

This safety data sheet was created pursuant to the requirements of:
UK REACH Regulations (SI 2019/758 as amended)

Supersedes date 21-Mar-2019

Revision date 28-Apr-2026

Revision Number 5

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Code(s)	23149
Safety data sheet number	23149
Product Name	HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE
EC Number	918-811-1
Synonyms	SHELLSOL A150 ND, PETROSOL 18-20, NAPHTHA 18/20, SOLVESSO 150 ND, EVERSOL 150 ND, CAROMAX 20LN, SOLVANT NAPHTA 90-200 ND/VRAC, SOLVAREX 10 LN, SOLVENT NAPHTHA 150 ND, SOLVENT 150 ND
Pure substance/mixture	Substance
Contains HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE	
Molecular weight	133

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Solvent Chemical intermediate Cleaning agent Lubricant Additive for Agrochemicals Laboratory chemicals Surface coating Water Treatment Fuels Binder Polymer production oil gas
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1.3. Details of the supplier of the safety data sheet

Supplier

Univar Solutions UK Ltd
Aquarius House
6 Mid Point Business Park
Bradford
GBR

For further information, please contact

E-mail address SDS.EMEA@univarsolutions.com

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

1.4. Emergency telephone number

Emergency Telephone

SGS - +32 (0)3 575 55 55 (24h)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Specific target organ toxicity — single exposure	Category 3 - (H336)
Aspiration hazard	Category 1 - (H304)
Chronic aquatic toxicity	Category 2 - (H411)

2.2. Label elements

Contains HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE



Signal word

Danger

Hazard statements

H304 - May be fatal if swallowed and enters airways

H336 - May cause drowsiness or dizziness

H411 - Toxic to aquatic life with long lasting effects

EUH066 - Repeated exposure may cause skin dryness or cracking

Precautionary statements

P261 - Avoid breathing dust/fume/gas/mist/vapours/spray

P273 - Avoid release to the environment

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor

P312 - Call a POISON CENTER or doctor if you feel unwell

P331 - Do NOT induce vomiting

P391 - Collect spillage

Additional information

This product requires child resistant fastenings if supplied to the general public. This product requires tactile warnings if supplied to the general public.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Weight-%	EC No (EU Index No)	UK REACH registration number	Classification according to GB CLP (SI 2020/1567 as amended)	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE*** -	90 - 100%	918-811-1	-	Asp. Tox. 1 (H304) STOT SE 3 (H336) Aquatic Chronic 2 (H411) (EUH066)***	-	-	-

Full text of H- and EUH-phrases: see section 16

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (UK REACH Article 59)

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Inhalation	Remove to fresh air. Aspiration into lungs can produce severe lung damage. If breathing has stopped, give artificial respiration. Get medical attention immediately. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.
Skin contact	Wash skin with soap and water. In the case of skin irritation or allergic reactions see a doctor.
Ingestion	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Get immediate medical attention.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms	Difficulty in breathing. Coughing and/ or wheezing. Dizziness. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Inhalation	May cause drowsiness or dizziness.
Dermal	Repeated exposure may cause skin dryness or cracking.
Ingestion	May be fatal if swallowed and enters airways

4.3. Indication of any immediate medical attention and special treatment needed

Note to doctors	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media	Dry chemical, CO2, alcohol-resistant foam or water spray.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products	Carbon oxides.
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5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas.
Other information	Refer to protective measures listed in Sections 7 and 8.
For emergency responders	Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions	See Section 12 for additional Ecological Information.
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6.3. Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Take up mechanically, placing in appropriate containers for disposal.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections	See section 8 for more information. See section 13 for more information.
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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation. Avoid breathing vapours or mists. In case of insufficient ventilation, wear suitable respiratory equipment.
General hygiene considerations	Wash hands before breaks and immediately after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store away from other materials.

7.3. Specific end use(s)

Specific use(s)

See section 1 for more information.

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE*** -		12.5 mg/kg/day [4] [6]	151 mg/m ³ [4] [6] 2.31 mg/m ³ [5] [6] 160.23 mg/m ³ [5] [7] 384 mg/m ³ [4] [6]***

[4] Systemic health effects.
[5] Local health effects.
[6] Long term.
[7] Short term.

Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE*** -	7.5 mg/kg/day [4] [6] 25.6 mg/kg [4] [6]	7.5 mg/kg/day [4] [6]	32 mg/m ³ [4] [6] 0.69 mg/m ³ [5] [6] 143.5 mg/m ³ [5] [7] 226 mg/m ³ [4] [6]

[4] Systemic health effects.
[5] Local health effects.
[6] Long term.
[7] Short term.

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering controls	No information available.
Personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles). According to EN 16321-1.
Hand protection	Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. Gloves must conform to standard EN 374.
Skin and body protection	No special protective equipment required.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
Type A.	

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Liquid
Colour	Colourless
Odour	Aromatic.
Odour threshold	No information available

Property	Values	Remarks • Method
Melting point / freezing point	< -10.0 °C	
Initial boiling point and boiling range	179.0 - 205.0 °C	
Flammability		No information available.
Flammability Limit in Air		No information available.
Upper flammability or explosive limits	7.0%	
Lower flammability or explosive limits	0.6%	
Flash point	62.0 - 65.0 °C	Pensky-Martens Closed Cup (PMCC).
Autoignition temperature	> 400.0 °C	
Decomposition temperature		No information available.
pH		No information available.
pH (as aqueous solution)		No information available.
Kinematic viscosity		No information available.
Dynamic viscosity	0.95 mm ² /s	@ 40.0 °C.
Water solubility	Insoluble in water	
Solubility(ies)		No information available.
Partition coefficient	2.80 - 6.50	
Vapour pressure	0.09 kPa	@ 20.0 °C.
Relative density	0.865 - 0.900	
Bulk density	844 kg/m ³	
Liquid Density	No information available	No information available
Relative vapour density	6.07	
Particle characteristics		No information available.
Particle Size	No information available	
Particle Size Distribution	No information available	
Explosive properties	No information available	

Oxidising properties No information available

9.2. Other information

Molecular weight 133 0.1 (diethyl ether = 1)

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity Stable under recommended storage conditions.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid Excessive heat. Keep away from open flames, hot surfaces and sources of ignition.

10.5. Incompatible materials

Incompatible materials Strong bases. Strong acids. Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Carbon oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information

Inhalation May cause drowsiness or dizziness.

Eye contact May cause temporary eye irritation.

Skin contact Repeated exposure may cause skin dryness or cracking.

Ingestion May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Difficulty in breathing. Coughing and/ or wheezing. Dizziness. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Acute toxicity

Numerical measures of toxicity

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE***	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 2 mg/l (Rat) <= 20 mg/l (Rat) > 4688 mg/m ³ (Rat) 4h 20 - 50 mg/l***

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Repeated exposure may cause skin dryness or cracking.

HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE (-)

Method	Species	Exposure route	Effective dose	Exposure time	Results
	Rabbit***	Dermal***			May cause slight irritation***

Serious eye damage/eye irritation No information available.

HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE (-)

Method	Species	Exposure route	Effective dose	Exposure time	Results
	Rabbit***	eye***			Mild eye irritation***

Respiratory or skin sensitisation No information available.

HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE (-)

Method	Species	Exposure route	Results
	Guinea pig***	Dermal***	Not a skin sensitiser***

Germ cell mutagenicity No information available.

Component Information

HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE (-)

Method	Species	Results
	in vitro***	Not mutagenic***
	in vivo***	Not mutagenic***

Carcinogenicity No information available.

Reproductive toxicity No information available.

HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE (-)

Method	Species	Results
	Rat***	Not classified***

STOT - single exposure May cause drowsiness or dizziness.

HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE (-)

Method	Species	Exposure route	Effective dose	Exposure time	Results
	human data Animal Data.***	Inhalation***			May cause drowsiness or dizziness***

STOT - repeated exposure No information available.

Aspiration hazard May be fatal if swallowed and enters airways.

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity Toxic to aquatic life with long lasting effects.

HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE (-)

Method	Species	Endpoint type	Effective dose	Exposure time	Results
	Green Algae***	EL50***	3 mg/L***	72 hours***	
	Oncorhynchus mykiss (rainbow trout)***	LL50***	5 mg/L***	96 hours***	
	Water flea***	EL50***	10 mg/L***	48 hours***	
	Green Algae***	NOEL***	1 mg/L***	72 hours***	

12.2. Persistence and degradability

Persistence and degradability Inherently Biodegradable.

HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE (-)

Method	Exposure time	Value	Results
	28 days	49.6% Biodegradation	Readily biodegradable

12.3. Bioaccumulative potential

Bioaccumulation No information available.

Bioconcentration factor (BCF) 99 - 5780

Component Information

Chemical name	Partition coefficient
HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE***	2.8-6.5

12.4. Mobility in soil

Mobility in soil Insoluble.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment The product does not contain any substance(s) classified as PBT or vPvB.

12.6. Other adverse effects

No information available.

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

SECTION 14: Transport information**IATA**

14.1 UN number or ID number	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	A97, A158, A197
ERG Code	9L

IMDG

14.1 UN number or ID number	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	274, 335, 969
EmS-No	F-A, S-F
14.7 Maritime transport in bulk according to IMO instruments	No information available

RID

14.1 UN number or ID number	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	274, 335, 375, 601
Classification code	M6

ADR

14.1 UN number or ID number	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE)

14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	274, 335, 601, 375
Classification code	M6
Tunnel restriction code	(-)

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Authorisations and/or restrictions on use:

This product does not contain substances subject to authorisation (UK REACH - Annex XIV).
This product does not contain substances subject to restriction (UK REACH - Annex XVII).

Persistent Organic Pollutants

Not applicable

Export Notification requirements

Not applicable

Dangerous substance category per COMAH Regulations 2015 (as amended)

E2 - Hazardous to the Aquatic Environment in Category Chronic 2

Named dangerous substances per COMAH Regulations 2015 (as amended)

Not applicable

The Ozone-Depleting Substances Regulations 2015

Not applicable

The Biocidal Products Regulations 2001 (as amended)

Not applicable

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (as amended)

Not applicable

Poisons Act 1972 (Explosive Precursors) Regulations (as Amended)

Not applicable

International Inventories

TSCA	Contact supplier for inventory compliance status
DSL/NDL	Contact supplier for inventory compliance status
EINECS/ELINCS	Contact supplier for inventory compliance status
ENCS	Contact supplier for inventory compliance status
IECSC	Contact supplier for inventory compliance status
KECI	Contact supplier for inventory compliance status
PICCS	Contact supplier for inventory compliance status
AIIC	Contact supplier for inventory compliance status
NZIoC	Contact supplier for inventory compliance status

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

15.2. Chemical safety assessment

Chemical Safety Report A Chemical Safety Assessment has been carried out for this substance

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend

SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
+	Sensitisers		

Revision Note ***Indicates updated data since last publication

Classification procedure

Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
European Chemicals Agency (ECHA) (ECHA_API)
Environmental Protection Agency
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)

Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Prepared By Jitendra Panchal

Supersedes date 21-Mar-2019

Revision date 28-Apr-2026

**This material safety data sheet complies with the requirements of UK REACH Regulations (SI 2019/758 as amended)
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical
agents at work**

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Manufacture of substance
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC1 - Manufacture of substances ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Specific Environmental Release Category ESVOC SpERC 1.1.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC15 - Use as laboratory reagent

Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU8 - Manufacture of bulk, large scale chemicals (including petroleum products) SU9 - Manufacture of fine chemicals SU10 - Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC1 - Manufacture of substances
 - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Specific Environmental Release Category - ESVOC SpERC 1.1.v1

Amounts used

Type	Annual site tonnage
Value	6000
Units	t(ons)/year
Type	Fraction of EU tonnage used in region
Value	0.1
Type	Fraction of regional tonnage used locally
Value	1
Type	Maximum daily site tonnage

Value	60000
Units	kg/d

Type	Regional use tonnage
Value	6000
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	100
Release fraction to air from process (initial release prior to RMM)	0.001
Release fraction to wastewater from process (initial release prior to RMM)	0.0003
Release fraction to soil from process (initial release prior to RMM)	0.0001
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	10000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater sediment Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of 90%
Water	If discharging to domestic sewage treatment plant, no onsite wastewater treatment required If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 60\%$ Not applicable as there is no release to wastewater

Conditions and measures related to external recovery of waste

Method	During manufacturing no waste of the substance is generated
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Conditions and measures related to external treatment of waste for disposal

Disposal	During manufacturing no waste of the substance is generated
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Control of worker exposure

Title	General measures applicable to all activities
Covers concentrations up to	100%

Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	General exposures (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Process sampling
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC15 - Use as laboratory reagent
Title	Laboratory activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to
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	vessels/large containers at dedicated facilities
Title	Bulk transfers (open systems) / (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC1 - Manufacture of substances
- ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Specific Environmental Release Category - ESVOC SpERC 1.1.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model
Msafe 440000 kg/d
Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.0007
Waste Water		<= 0.13

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Remarks Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name	SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture	Substance
REACH registration number	01-2119463583-34-XXXX
EC No (EU Index No)	918-811-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Distribution of substance
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC1 - Manufacture of substances ERC2 - Formulation of preparations (mixtures) ERC3 - Formulation in materials ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles ERC5 - Industrial use resulting in inclusion into or onto a matrix ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates) ERC6b - Industrial use of reactive processing aids ERC6c - Industrial use of monomers for manufacture of thermoplastics ERC6d - Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers ERC7 - Industrial use of substances in closed systems
Specific Environmental Release Category	ESVOC SpERC 1.1b.v1
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation) PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15 - Use as laboratory reagent
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU8 - Manufacture of bulk, large scale chemicals (including petroleum products) SU9 - Manufacture of fine chemicals

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

- Environmental release category(ies)** - ERC1 - Manufacture of substances
- ERC2 - Formulation of preparations (mixtures)
 - ERC3 - Formulation in materials
 - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
 - ERC5 - Industrial use resulting in inclusion into or onto a matrix
 - ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
 - ERC6b - Industrial use of reactive processing aids
 - ERC6c - Industrial use of monomers for manufacture of thermoplastics
 - ERC6d - Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

- ERC7 - Industrial use of substances in closed systems

Specific Environmental Release Category - ESVOC SpERC 1.1b.v1

Amounts used

Type	Annual site tonnage
Value	0.002
Units	t(ons)/year

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	0.002

Type	Maximum daily site tonnage
Value	0.1
Units	kg/d

Type	Regional use tonnage
Value	1
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	20
Release fraction to air from process (initial release prior to RMM)	0.001
Release fraction to wastewater from process (initial release prior to RMM)	0.00001
Release fraction to soil from process (initial release prior to RMM)	0.00001
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of 90%
Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= 0%

	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure	
Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	General exposures (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	Process sampling
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented

exposure	
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC15 - Use as laboratory reagent
Title	Laboratory activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Bulk transfers (open systems) / (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	Drum and small package filling
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system Transfer via enclosed lines
Organisational measures to prevent /limit releases, dispersion and	Assumes a good basic standard of occupational hygiene is implemented

exposure	
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC1 - Manufacture of substances

- ERC2 - Formulation of preparations (mixtures)

- ERC3 - Formulation in materials

- ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

- ERC5 - Industrial use resulting in inclusion into or onto a matrix

- ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)

- ERC6b - Industrial use of reactive processing aids

- ERC6c - Industrial use of monomers for manufacture of thermoplastics

- ERC6d - Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

- ERC7 - Industrial use of substances in closed systems

Specific Environmental Release Category - ESVOC SpERC 1.1b.v1

**Predicted No Effect Concentration
(PNEC)**

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrisk model

Msafe 50 kg/d

Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.0000043
Waste Water		<= 0.011

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Remarks Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Use as an intermediate
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
Specific Environmental Release Category ESVOC SpERC 6.1a.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC15 - Use as laboratory reagent

Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU8 - Manufacture of bulk, large scale chemicals (including petroleum products) SU9 - Manufacture of fine chemicals

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)

Specific Environmental Release Category - ESVOC SpERC 6.1a.v1

Amounts used

Type	Annual site tonnage
Value	45
Units	t(ons)/year
Type	Fraction of EU tonnage used in region
Value	0.1
Type	Fraction of regional tonnage used locally
Value	1
Type	Maximum daily site tonnage
Value	2300

Units	kg/d
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Type	Regional use tonnage
Value	45
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	20
Release fraction to air from process (initial release prior to RMM)	0.001
Release fraction to wastewater from process (initial release prior to RMM)	0.0003
Release fraction to soil from process (initial release prior to RMM)	0.001
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater sediment Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of 80%
Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater

Conditions and measures related to external treatment of waste for disposal

Disposal	This substance is consumed during use and no waste of the substance is generated
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Control of worker exposure

Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting

Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	General exposures (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Process sampling
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC15 - Use as laboratory reagent
Title	Laboratory activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Bulk transfers (open systems) / (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).

Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)

Specific Environmental Release Category - ESVOC SpERC 6.1a.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model

Msafe 89000 kg/d

Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.0000044
Waste Water		<= 0.025

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
Remarks	Risk management measures are based on qualitative risk characterization Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Formulation & (re)packing of substances and mixtures
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC2 - Formulation of preparations (mixtures)
Specific Environmental Release Category ESVOC SpERC 2.2.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
 PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
 PROC15 - Use as laboratory reagent

Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
 SU10 - Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC2 - Formulation of preparations (mixtures)
Specific Environmental Release Category - ESVOC SpERC 2.2.v1

Amounts used

Type	Annual site tonnage
Value	510
Units	t(ons)/year

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	1

Type	Maximum daily site tonnage
Value	5100
Units	kg/d

Type	Regional use tonnage
Value	510
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	100
Release fraction to air from process (initial release prior to RMM)	0.01
Release fraction to wastewater from process (initial release prior to RMM)	0.0002
Release fraction to soil from process (initial release prior to RMM)	0.0001
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater sediment Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of 0%
Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater

Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure	
Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	General exposures (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	Batch process Elevated temperature
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Elevated temperature
Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	Process sampling
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards	Avoid dip sampling

the worker	
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC15 - Use as laboratory reagent
Title	Laboratory activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Bulk transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Title	Mixing operations (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Drum/batch transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards	Use drum pumps or carefully pour from container

the worker	
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	Drum and small package filling
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC2 - Formulation of preparations (mixtures)
Specific Environmental Release Category - ESVOC SpERC 2.2.v1

**Predicted No Effect Concentration
(PNEC)**

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model

Msafe 130000 kg/d

Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.000059
Waste Water		<= 0.038

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Remarks Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Coatings
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Specific Environmental Release Category ESVOC SpERC 4.3a.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
 PROC7 - Industrial spraying
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
 PROC10 - Roller application or brushing
 PROC13 - Treatment of articles by dipping and pouring
 PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
 PROC15 - Use as laboratory reagent

Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Specific Environmental Release Category - ESVOC SpERC 4.3a.v1

Amounts used

Type	Annual site tonnage
Value	1700
Units	t(ons)/year

Type	Fraction of EU tonnage used in region
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Value	0.1
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Type	Fraction of regional tonnage used locally
Value	1

Type	Maximum daily site tonnage
Value	17000
Units	kg/d

Type	Regional use tonnage
Value	1700
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	100
Release fraction to air from process (initial release prior to RMM)	0.98
Release fraction to wastewater from process (initial release prior to RMM)	0.0007
Release fraction to soil from process (initial release prior to RMM)	0
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater sediment Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of 90%
Water	If discharging to domestic sewage treatment plant, no onsite wastewater treatment required If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 87.8\%$ Not applicable as there is no release to wastewater

Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	General exposures (closed systems) Use in contained systems
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Film formation
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	Mixing operations (closed systems) General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	Film formation
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).

Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Title	Preparation of material for application Mixing operations (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC7 - Industrial spraying
Title	Spraying
Covers concentrations up to	100%
Physical form of product	Sprays
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Carry out in a vented booth provided with laminar airflow
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC7 - Industrial spraying
Title	Manual spraying
Covers concentrations up to	100%
Physical form of product	Sprays
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Material transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Title	Roller, spreader, flow application
Covers concentrations up to	100%
Physical form of product	Liquid

Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC15 - Use as laboratory reagent
Title	Laboratory activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	Material transfers / Drum/batch transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Specific Environmental Release Category - ESVOC SpERC 4.3a.v1

Predicted No Effect Concentration (PNEC)

Calculation method	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model	
Msafe	38000 kg/d	
Remarks	Qualitative approach used to conclude safe use	
Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.0019
Waste Water		<= 0.44

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12. 5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
Remarks	Risk management measures are based on qualitative risk characterization Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Cleaning agent
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Specific Environmental Release Category ESVOC SpERC 4.4a.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC7 - Industrial spraying
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC10 - Roller application or brushing
 PROC13 - Treatment of articles by dipping and pouring
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Specific Environmental Release Category - ESVOC SpERC 4.4a.v1

Amounts used

Type	Annual site tonnage
Value	100000
Units	kg/d

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	1

Type	Maximum daily site tonnage
Value	5000

Units	kg/d
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Type	Regional use tonnage
Value	170
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	20
Release fraction to air from process (initial release prior to RMM)	1
Release fraction to wastewater from process (initial release prior to RMM)	0.000003
Release fraction to soil from process (initial release prior to RMM)	0
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of 70%
Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater

Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Covers concentrations up to	100%

Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Bulk transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation)
Title	Automated process with (semi) closed systems Use in contained systems / Drum/batch transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Filling/preparation of equipment from drums or containers.
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	Use in contained systems Batch process
Covers concentrations up to	100%
Physical form of product	Liquid

Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Title	Degreaser
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Title	Cleaning with low-pressure washers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC7 - Industrial spraying
Title	Cleaning with high-pressure washers
Covers concentrations up to	100%
Physical form of product	Liquid
Exposure duration	Avoid carrying out activities involving exposure for more than 1 hour
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Title	Surface cleaning Manual
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and	Assumes a good basic standard of occupational hygiene is implemented

exposure	
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Specific Environmental Release Category - ESVOC SpERC 4.4a.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model
Msafe 2000000 kg/d
Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.00035
Waste Water		<= 0.0016

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Remarks Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
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Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

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Section 1 - Title

Title Use in oil and gas field drilling and production operations
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Specific Environmental Release Category ESVOC SpERC 4.5a.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Specific Environmental Release Category - ESVOC SpERC 4.5a.v1

Amounts used

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Regional use tonnage
Value	920
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure	
Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Bulk transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Filling/preparation of equipment from drums or containers.
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	Drilling mud (re-)formulation
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	Drill floor operations
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and	Assumes a good basic standard of occupational hygiene is implemented

exposure	
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	Operation of solids filtering equipment
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	Process sampling
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid

Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	General exposures (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Specific Environmental Release Category - ESVOC SpERC 4.5a.v1

Predicted No Effect Concentration (PNEC)

Calculation method
Remarks

Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³

Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
Remarks	Risk management measures are based on qualitative risk characterization Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Lubricants
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
 ERC7 - Industrial use of substances in closed systems
Specific Environmental Release Category ESVOC SpERC 4.6a.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC7 - Industrial spraying
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
 PROC10 - Roller application or brushing
 PROC13 - Treatment of articles by dipping and pouring
 PROC17 - Lubrication at high energy conditions and in partly open process
 PROC18 - Greasing at high energy conditions
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
 - ERC7 - Industrial use of substances in closed systems
Specific Environmental Release Category - ESVOC SpERC 4.6a.v1

Amounts used

Type	Annual site tonnage
Value	56000
Units	kg/d
Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	1

Type	Maximum daily site tonnage
Value	2800
Units	kg/d

Type	Regional use tonnage
Value	56
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	20
Release fraction to air from process (initial release prior to RMM)	0.005
Release fraction to wastewater from process (initial release prior to RMM)	0.00003
Release fraction to soil from process (initial release prior to RMM)	0.001
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater sediment Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of 70%
Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater

Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure	
Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	General exposures (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Bulk transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Filling/preparation of equipment from drums or containers.
Covers concentrations up to	100%
Physical form of product	Liquid

Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC17 - Lubrication at high energy conditions and in partly open process PROC18 - Greasing at high energy conditions
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC7 - Industrial spraying
Covers concentrations up to	100%
Physical form of product	Sprays
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to

	vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of controlled ventilation (10 to 15 air changes per hour)
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Elevated temperature

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	Re-manufacture of reject articles
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system Transfer via enclosed lines
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

- ERC7 - Industrial use of substances in closed systems

Specific Environmental Release Category - ESVOC SpERC 4.6a.v1

Predicted No Effect Concentration

(PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model

Msafe 890000 kg/d

Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.0000052
Waste Water		<= 0.0031

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Remarks Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Metal working fluids / rolling oils,
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Specific Environmental Release Category ESVOC SpERC 4.7a.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
 PROC7 - Industrial spraying
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
 PROC10 - Roller application or brushing
 PROC13 - Treatment of articles by dipping and pouring
 PROC17 - Lubrication at high energy conditions and in partly open process
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Specific Environmental Release Category - ESVOC SpERC 4.7a.v1

Amounts used

Type	Annual site tonnage
Value	10000
Units	kg/d

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	1

Type	Maximum daily site tonnage
Value	500
Units	kg/d

Type	Regional use tonnage
Value	10
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	20
Release fraction to air from process (initial release prior to RMM)	0.02
Release fraction to wastewater from process (initial release prior to RMM)	0.00003
Release fraction to soil from process (initial release prior to RMM)	0
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of 70%
Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater

Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or
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	national regulations
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Control of worker exposure	
Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	General exposures (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Bulk transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
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Title	Filling/preparation of equipment from drums or containers.
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Process sampling
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC17 - Lubrication at high energy conditions and in partly open process
Title	Metal machining operations
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC7 - Industrial spraying
Covers concentrations up to	100%
Physical form of product	Sprays
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent	Assumes a good basic standard of occupational hygiene is implemented

/limit releases, dispersion and exposure	
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Automated metal rolling/forming Use in contained systems
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Elevated temperature
Process category(ies)	PROC17 - Lubrication at high energy conditions and in partly open process
Title	Semi-automated metal rolling/forming
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Elevated temperature
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system Transfer via enclosed lines
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Specific Environmental Release Category - ESVOC SpERC 4.7a.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model

Msafe 200000 kg/d

Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.000005
Waste Water		<= 0.0016

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Remarks Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Binder and Release agents
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Specific Environmental Release Category ESVOC SpERC 4.10a.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC6 - Calendaring operations
 PROC7 - Industrial spraying
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC10 - Roller application or brushing
 PROC13 - Treatment of articles by dipping and pouring
 PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising

Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Specific Environmental Release Category - ESVOC SpERC 4.10a.v1

Amounts used

Type	Annual site tonnage
Value	96000
Units	kg/d

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	1

Type	Maximum daily site tonnage
Value	4800
Units	kg/d

Type	Regional use tonnage
Value	96
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	20
Release fraction to air from process (initial release prior to RMM)	1
Release fraction to wastewater from process (initial release prior to RMM)	0.000003
Release fraction to soil from process (initial release prior to RMM)	0
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by soil Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of 80%
Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater

Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure	
Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation)
Title	Material transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Transfer via enclosed lines
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Drum/batch transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	Mixing operations (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	Mixing operations (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent	Assumes a good basic standard of occupational hygiene is implemented

/limit releases, dispersion and exposure	
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC6 - Calendaring operations
Title	(open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Elevated temperature
Process category(ies)	PROC7 - Industrial spraying
Title	Machine / Manual
Covers concentrations up to	100%
Physical form of product	Sprays
Exposure duration	Avoid carrying out activities involving exposure for more than 4 hours
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings Provide a good standard of controlled ventilation (10 to 15 air changes per hour)
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system

Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Specific Environmental Release Category - ESVOC SpERC 4.10a.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model

Msafe 1900000 kg/d

Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.00022
Waste Water		<= 0.0015

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Remarks Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in

section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Fuels
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC7 - Industrial use of substances in closed systems
Specific Environmental Release Category ESVOC SpERC 7.12a.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC16 - Using material as fuel sources, limited exposure to unburned product to be expected

Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC7 - Industrial use of substances in closed systems
Specific Environmental Release Category - ESVOC SpERC 7.12a.v1

Amounts used

Type	Annual site tonnage
Value	160
Units	t(ons)/year

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	1

Type	Maximum daily site tonnage
Value	7800
Units	kg/d

Type	Regional use tonnage
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Value	160
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	20
Release fraction to air from process (initial release prior to RMM)	0.005
Release fraction to wastewater from process (initial release prior to RMM)	0.00001
Release fraction to soil from process (initial release prior to RMM)	0
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater sediment Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of 95%
Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater

Conditions and measures related to external treatment of waste for disposal

Disposal	This substance is consumed during use and no waste of the substance is generated
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Control of worker exposure

Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented

Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Bulk transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Drum/batch transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems) Use in contained systems Batch process
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC16 - Using material as fuel sources, limited exposure to unburned product to be expected
Title	(closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent	Assumes a good basic standard of occupational hygiene is implemented

/limit releases, dispersion and exposure	
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system Transfer via enclosed lines
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC7 - Industrial use of substances in closed systems
Specific Environmental Release Category - ESVOC SpERC 7.12a.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model
Msafe 2700000 kg/d
Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.0000047
Waste Water		<= 0.0029

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
Remarks Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in

combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
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Supplier Univar Solutions UK Ltd
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 6 Mid Point Business Park
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Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

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Section 1 - Title

Title Functional fluids
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC7 - Industrial use of substances in closed systems
Specific Environmental Release Category ESVOC SpERC 7.13a.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC7 - Industrial use of substances in closed systems
Specific Environmental Release Category - ESVOC SpERC 7.13a.v1

Amounts used

Type	Annual site tonnage
Value	1
Units	t(ons)/year
Type	Fraction of EU tonnage used in region
Value	0.1
Type	Fraction of regional tonnage used locally
Value	1
Type	Maximum daily site tonnage
Value	50
Units	kg/d

Type	Regional use tonnage
Value	1
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	20
Release fraction to air from process (initial release prior to RMM)	0.005
Release fraction to wastewater from process (initial release prior to RMM)	0.00003
Release fraction to soil from process (initial release prior to RMM)	0.001
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of 0%
Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater

Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).

Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Bulk transfers (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Transfer via enclosed lines
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Drum/batch transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	(closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Filling/preparation of equipment from drums or containers.
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	General exposures (closed systems)

Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	General exposures (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	Re-manufacture of reject articles
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC7 - Industrial use of substances in closed systems
Specific Environmental Release Category - ESVOC SpERC 7.13a.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model

Msafe 24000 kg/d

Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.0000043
Waste Water		<= 0.0011

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Remarks Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Use in laboratories
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC2 - Formulation of preparations (mixtures) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Process category(ies) PROC10 - Roller application or brushing
 PROC15 - Use as laboratory reagent
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC2 - Formulation of preparations (mixtures)
 - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Amounts used

Type	Annual site tonnage
Value	0.2
Units	t(ons)/year

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	1

Type	Maximum daily site tonnage
Value	10
Units	kg/d

Type	Regional use tonnage
Value	0.2
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
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Emission days	20
Release fraction to air from process (initial release prior to RMM)	0.025
Release fraction to wastewater from process (initial release prior to RMM)	0.02
Release fraction to soil from process (initial release prior to RMM)	0.0001
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater sediment Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of 0%
Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater

Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC15 - Use as laboratory reagent
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Title	Laboratory activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC2 - Formulation of preparations (mixtures)
- ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model
Msafe 1300 kg/d
Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.0000043
Waste Water		<= 0.0075

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
Remarks Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in

combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
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Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Use in polymer processing.
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Specific Environmental Release Category ESVOC SpERC 4.21a.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
 PROC6 - Calendaring operations
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
 PROC13 - Treatment of articles by dipping and pouring
 PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
 PROC21 - Low energy manipulation of substances bound in materials and/or articles
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
 SU10 - Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Specific Environmental Release Category - ESVOC SpERC 4.21a.v1

Amounts used

Type	Annual site tonnage
Value	0.1
Units	t(ons)/year

Type	Fraction of EU tonnage used in region
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Value	0.1
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Type	Fraction of regional tonnage used locally
Value	1

Type	Maximum daily site tonnage
Value	5
Units	kg/d

Type	Regional use tonnage
Value	0.1
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	20
Release fraction to air from process (initial release prior to RMM)	0.25
Release fraction to wastewater from process (initial release prior to RMM)	0
Release fraction to soil from process (initial release prior to RMM)	0.00001
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of 80%
Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater

Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure	
Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	Bulk transfers (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Bulk weighing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	Small scale weighing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation) PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Title	Use in contained systems Batch process / Mixing operations (open systems)
Covers concentrations up to	100%

Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	General exposures (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC6 - Calendaring operations
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Elevated temperature

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Title	Injection moulding of articles
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented

Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC21 - Low energy manipulation of substances bound in materials and/or articles
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Specific Environmental Release Category - ESVOC SpERC 4.21a.v1

Predicted No Effect Concentration (PNEC)

Calculation method

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model

Msafe

2500 kg/d

Remarks

Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.0000043
Waste Water		<= 0.0011

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
Remarks	Risk management measures are based on qualitative risk characterization Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Water treatment chemicals
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC3 - Formulation in materials ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Specific Environmental Release Category ESVOC SpERC 3.22a.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC13 - Treatment of articles by dipping and pouring
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC3 - Formulation in materials
 - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Specific Environmental Release Category - ESVOC SpERC 3.22a.v1

Amounts used

Type	Annual site tonnage
Value	30
Units	t(ons)/year
Type	Fraction of EU tonnage used in region
Value	0.1
Type	Fraction of regional tonnage used locally
Value	1
Type	Maximum daily site tonnage
Value	100
Units	kg/d

Type	Regional use tonnage
Value	110
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	300
Release fraction to air from process (initial release prior to RMM)	0.05
Release fraction to wastewater from process (initial release prior to RMM)	0.95
Release fraction to soil from process (initial release prior to RMM)	0
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	98.5%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater sediment Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of 0%
Water	If discharging to domestic sewage treatment plant, no onsite wastewater treatment required If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 71.9\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 98.5\%$ Not applicable as there is no release to wastewater

Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Covers concentrations up to	100%

Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Bulk transfers Use in contained systems
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Transfer via enclosed lines
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Drum/batch transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	General exposures (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid

Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC3 - Formulation in materials
- ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Specific Environmental Release Category - ESVOC SpERC 3.22a.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model

Msafe 100 kg/d

Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.00004
Waste Water		<= 0.91

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
Remarks	Risk management measures are based on qualitative risk characterization Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Mining chemicals
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Specific Environmental Release Category ESVOC SpERC 4.23.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Specific Environmental Release Category - ESVOC SpERC 4.23.v1

Amounts used

Type	Annual site tonnage
Value	100
Units	t(ons)/year

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	1

Type	Maximum daily site tonnage
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Value	5100
Units	kg/d

Type	Regional use tonnage
Value	110
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	20
Release fraction to air from process (initial release prior to RMM)	0.25
Release fraction to wastewater from process (initial release prior to RMM)	0.5
Release fraction to soil from process (initial release prior to RMM)	0.05
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	99.9%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater sediment Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of 80%
Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 98.9\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 99.9\%$ Not applicable as there is no release to wastewater

Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
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Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Bulk transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Transfer via enclosed lines
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Title	General exposures (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	(closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	(closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	Process sampling
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Title	Mixing operations (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).

Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Specific Environmental Release Category - ESVOC SpERC 4.23.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model

Msafe 5100 kg/d

Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.00006
Waste Water		<= 0.91

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Remarks Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Coatings
Type Worker
Main user group Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category ESVOC SpERC 8.3b.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC10 - Roller application or brushing
 PROC11 - Non industrial spraying
 PROC13 - Treatment of articles by dipping and pouring
 PROC15 - Use as laboratory reagent
 PROC19 - Hand-mixing with intimate contact and only PPE available

Sector(s) of use SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
 - ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category - ESVOC SpERC 8.3b.v1

Amounts used

Type	Annual site tonnage
Value	0.11
Units	t(ons)/year
Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	1

Type	Maximum daily site tonnage
Value	0.3
Units	kg/d

Type	Regional use tonnage
Value	220
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.98
Release fraction to wastewater from process (initial release prior to RMM)	0.01
Release fraction to soil from process (initial release prior to RMM)	0.01
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure	
Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	General exposures (closed systems) Use in contained systems
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Filling/preparation of equipment from drums or containers. Use in contained systems
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation) PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Title	Preparation of material for application Use in contained systems Batch process
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Covers indoor and outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	Film formation
Covers concentrations up to	100%

Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Covers indoor and outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Material transfers Drum/batch transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Title	Roller, spreader, flow application
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Covers indoor and outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC11 - Non industrial spraying
Title	Manual spraying
Covers concentrations up to	50%
Physical form of product	Sprays
Exposure duration	Avoid carrying out activities involving exposure for more than 1 hour
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of controlled ventilation (10 to 15 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Covers indoor and outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Avoid manual contact with wet work pieces
Organisational measures to prevent	Assumes a good basic standard of occupational hygiene is implemented

/limit releases, dispersion and exposure	
Indoor/Outdoor use	Covers indoor and outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC15 - Use as laboratory reagent
Title	Laboratory activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Title	Hand application - fingerpaints, pastels, adhesives
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Ensure operation is undertaken outdoors
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Covers indoor and outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category - ESVOC SpERC 8.3b.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model
Msafe 140 kg/d
Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.00012
Waste Water		<= 0.0012

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
Remarks	Risk management measures are based on qualitative risk characterization Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Cleaning agent
Type Worker
Main user group Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category ESVOC SpERC 8.4b.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC10 - Roller application or brushing
 PROC11 - Non industrial spraying
 PROC13 - Treatment of articles by dipping and pouring
 PROC19 - Hand-mixing with intimate contact and only PPE available
 SU22 - Professional uses

Sector(s) of use

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
 - ERC8d - Wide dispersive outdoor use of processing aids in open systems

Specific Environmental Release Category - ESVOC SpERC 8.4b.v1

Amounts used

Type	Annual site tonnage
Value	0.3
Units	kg/d

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	1

Type	Maximum daily site tonnage
Value	0.00082
Units	kg/d

Type	Regional use tonnage
Value	0.6
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.02
Release fraction to wastewater from process (initial release prior to RMM)	0.000001
Release fraction to soil from process (initial release prior to RMM)	0
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
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Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Filling/preparation of equipment from drums or containers.
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Automated process with (semi) closed systems Use in contained systems / Drum/batch transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	Automated process with (semi) closed systems
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	Semi-automated process (e.g. semi-automatic application of floor care and maintenance products)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Filling/preparation of equipment from drums or containers.
Covers concentrations up to	100%
Physical form of product	Liquid

Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Title	Manual Surface cleaning
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Title	Surface cleaning Manual / Spraying
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Title	Cleaning with low-pressure washers Rolling, brushing / No Spraying
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC11 - Non industrial spraying
Title	Cleaning with high-pressure washers Spraying
Covers concentrations up to	5%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Covers indoor and outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC11 - Non industrial spraying
Title	Cleaning with high-pressure washers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and	Assumes a good basic standard of occupational hygiene is implemented

exposure	
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Title	Spraying Manual / Surface cleaning
Covers concentrations up to	100%
Physical form of product	Sprays
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Title	Ad hoc manual application via trigger sprays, dipping, etc Rolling, brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	(closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	Medical Devices
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

**Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8d - Wide dispersive outdoor use of processing aids in open systems**
Specific Environmental Release Category - ESVOC SpERC 8.4b.v1

**Predicted No Effect Concentration
(PNEC)**

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with

Msafe the Petrorisk model
Remarks 0.41 kg/d
Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.0000043
Waste Water		<= 0.0011

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12. 5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Remarks Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Use in oil and gas field drilling and production operations
Type Worker
Main user group Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category ESVOC SpERC 8.5b.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Sector(s) of use SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category - ESVOC SpERC 8.5b.v1

Amounts used

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Regional use tonnage
Value	920
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or
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	national regulations
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Control of worker exposure	
Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Bulk transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Filling/preparation of equipment from drums or containers.
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	Drilling mud (re-)formulation
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	Drill floor operations
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
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Title	Operation of solids filtering equipment - Vapour pressure
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	Process sampling
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	General exposures (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented

Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Sprays
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category - ESVOC SpERC 8.5b.v1

Predicted No Effect Concentration (PNEC)

Calculation method Risk management measures are based on qualitative risk characterization
Remarks Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Remarks Not applicable

Section 4 - Guidance to check compliance with the exposure scenario

Available hazard data does not support the need for a DNEL to be established for other health effects. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Lubricants
Type Worker
Main user group Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC9a - Wide dispersive indoor use of substances in closed systems ERC9b - Wide dispersive outdoor use of substances in closed systems
Specific Environmental Release Category ESVOC SpERC 9.6b.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
 PROC10 - Roller application or brushing
 PROC11 - Non industrial spraying
 PROC13 - Treatment of articles by dipping and pouring
 PROC17 - Lubrication at high energy conditions and in partly open process
 PROC18 - Greasing at high energy conditions
 PROC20 - Heat and pressure transfer fluids in dispersive, professional use but closed systems

Sector(s) of use SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC9a - Wide dispersive indoor use of substances in closed systems
 - ERC9b - Wide dispersive outdoor use of substances in closed systems
Specific Environmental Release Category - ESVOC SpERC 9.6b.v1

Amounts used

Type	Annual site tonnage
Value	1
Units	kg/d

Type	Fraction of EU tonnage used in region
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Value	0.1
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Type	Fraction of regional tonnage used locally
Value	1

Type	Maximum daily site tonnage
Value	0.0027
Units	kg/d

Type	Regional use tonnage
Value	2
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.01
Release fraction to wastewater from process (initial release prior to RMM)	0.01
Release fraction to soil from process (initial release prior to RMM)	0.01
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or
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	national regulations
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Control of worker exposure	
Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC20 - Heat and pressure transfer fluids in dispersive, professional use but closed systems
Title	Operation of equipment containing engine oils and similar
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	General exposures (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Bulk transfers
Covers concentrations up to	100%
Physical form of product	Liquid

Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Filling/preparation of equipment from drums or containers.
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC17 - Lubrication at high energy conditions and in partly open process PROC18 - Greasing at high energy conditions
Covers concentrations up to	100%
Physical form of product	Liquid
Exposure duration	Avoid carrying out activities involving exposure for more than 4 hours
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Restrict area of openings to equipment Ensure operation is undertaken outdoors
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Covers indoor and outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Drain down system prior to equipment break-in or maintenance
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Elevated temperature

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Drain down system prior to equipment break-in or maintenance
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Elevated temperature

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	Engine lubricant service
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC11 - Non industrial spraying
Title	Spraying
Covers concentrations up to	100%
Physical form of product	Sprays
Exposure duration	Avoid carrying out activities involving exposure for more than 1 hour
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A/P2 filter or better
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC9a - Wide dispersive indoor use of substances in closed systems
- ERC9b - Wide dispersive outdoor use of substances in closed systems
Specific Environmental Release Category - ESVOC SpERC 9.6b.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model

Msafe 1.4 kg/d
Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.0000053
Waste Water		<= 0.0011

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Remarks Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Lubricants
Type Worker
Main user group Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category ESVOC SpERC 8.6c.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
 PROC10 - Roller application or brushing
 PROC11 - Non industrial spraying
 PROC13 - Treatment of articles by dipping and pouring
 PROC17 - Lubrication at high energy conditions and in partly open process
 PROC18 - Greasing at high energy conditions
 PROC20 - Heat and pressure transfer fluids in dispersive, professional use but closed systems

Sector(s) of use SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
 - ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category - ESVOC SpERC 8.6c.v1

Amounts used

Type	Annual site tonnage
Value	1
Units	kg/d

Type	Fraction of EU tonnage used in region
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Value	0.1
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Type	Fraction of regional tonnage used locally
Value	1

Type	Maximum daily site tonnage
Value	0.0027
Units	kg/d

Type	Regional use tonnage
Value	2
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.15
Release fraction to wastewater from process (initial release prior to RMM)	0.05
Release fraction to soil from process (initial release prior to RMM)	0.05
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or
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	national regulations
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Control of worker exposure	
Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC20 - Heat and pressure transfer fluids in dispersive, professional use but closed systems
Title	Operation of equipment containing engine oils and similar
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	General exposures (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Bulk transfers
Covers concentrations up to	100%
Physical form of product	Liquid

Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Filling/preparation of equipment from drums or containers.
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC17 - Lubrication at high energy conditions and in partly open process PROC18 - Greasing at high energy conditions
Covers concentrations up to	100%
Physical form of product	Liquid
Exposure duration	Avoid carrying out activities involving exposure for more than 4 hours
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Restrict area of openings to equipment Ensure operation is undertaken outdoors
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Covers indoor and outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Drain down system prior to equipment break-in or maintenance
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Elevated temperature

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Drain down system prior to equipment break-in or maintenance
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Elevated temperature

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	Engine lubricant service
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC11 - Non industrial spraying
Title	Spraying
Covers concentrations up to	100%
Physical form of product	Sprays
Exposure duration	Avoid carrying out activities involving exposure for more than 1 hour
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A/P2 filter or better
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category - ESVOC SpERC 8.6c.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model

Msafe 1.4 kg/d

Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.0000096
Waste Water		<= 0.0011

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Remarks Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Metal working fluids / rolling oils,
Type Worker
Main user group Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category ESVOC SpERC 8.7c.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
 PROC10 - Roller application or brushing
 PROC11 - Non industrial spraying
 PROC13 - Treatment of articles by dipping and pouring
 PROC17 - Lubrication at high energy conditions and in partly open process

Sector(s) of use SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
 - ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category - ESVOC SpERC 8.7c.v1

Amounts used

Type	Annual site tonnage
Value	2.5
Units	kg/d
Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	1

Type	Maximum daily site tonnage
Value	0.0068
Units	kg/d

Type	Regional use tonnage
Value	5
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.15
Release fraction to wastewater from process (initial release prior to RMM)	0.05
Release fraction to soil from process (initial release prior to RMM)	0.05
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure	
Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Bulk transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	Filling/preparation of equipment from drums or containers.
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to

	vessels/large containers at dedicated facilities
Title	Process sampling
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC17 - Lubrication at high energy conditions and in partly open process
Title	Metal machining operations
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of controlled ventilation (10 to 15 air changes per hour)
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC11 - Non industrial spraying
Title	Spraying
Covers concentrations up to	100%
Physical form of product	Sprays
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A/P2 filter or better
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category - ESVOC SpERC 8.7c.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model

Msafe 3.4 kg/d

Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.000018
Waste Water		<= 0.0011

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise

Remarks	indicated Risk management measures are based on qualitative risk characterization Qualitative approach used to conclude safe use
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Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Binder and Release agents
Type Worker
Main user group Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8d - Wide dispersive outdoor use of processing aids in open systems
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC6 - Calendaring operations
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC10 - Roller application or brushing
 PROC11 - Non industrial spraying
 PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Sector(s) of use SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
 - ERC8d - Wide dispersive outdoor use of processing aids in open systems

Amounts used

Type	Annual site tonnage
Value	50
Units	kg/d

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	1

Type	Maximum daily site tonnage
Value	0.14

Units	kg/d
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Type	Regional use tonnage
Value	100
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.95
Release fraction to wastewater from process (initial release prior to RMM)	0.025
Release fraction to soil from process (initial release prior to RMM)	0.025
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Covers concentrations up to	100%

Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation)
Title	Material transfers (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Transfer via enclosed lines
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Drum/batch transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	Mixing operations (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	Mixing operations (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC6 - Calendaring operations
Title	Casting (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Exposure duration	Avoid carrying out activities involving exposure for more than 4 hours
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of controlled ventilation (10 to 15 air changes per hour)
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Elevated temperature

Process category(ies)	PROC11 - Non industrial spraying
Title	Spraying Machine / Manual
Covers concentrations up to	100%
Physical form of product	Sprays
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Minimise exposure by extracted full enclosure for the operation or equipment
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent	Assumes a good basic standard of occupational hygiene is implemented

/limit releases, dispersion and exposure	
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8d - Wide dispersive outdoor use of processing aids in open systems

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model

Msafe 65 kg/d
Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.00013
Waste Water		<= 0.0012

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Remarks Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Use in agrochemicals
Type Worker
Main user group Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category ESVOC SpERC 8.11a.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC11 - Non industrial spraying
 PROC13 - Treatment of articles by dipping and pouring
Sector(s) of use SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
 - ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category - ESVOC SpERC 8.11a.v1

Amounts used

Type	Annual site tonnage
Value	1800
Units	kg/d
Type	Fraction of EU tonnage used in region
Value	0.1
Type	Fraction of regional tonnage used locally
Value	1
Type	Maximum daily site tonnage
Value	4.9

Units	kg/d
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Type	Regional use tonnage
Value	900
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.9
Release fraction to wastewater from process (initial release prior to RMM)	0.01
Release fraction to soil from process (initial release prior to RMM)	0.09
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid

Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	Mixing operations (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC11 - Non industrial spraying
Title	Manual spraying
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC11 - Non industrial spraying
Title	Machine Spraying
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Title	Ad hoc manual application via trigger sprays, dipping, etc

Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category - ESVOC SpERC 8.11a.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model
Msafe 1400 kg/d
Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.0019
Waste Water		<= 0.0018

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic 12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic 150 mg/m³

Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
Remarks	Risk management measures are based on qualitative risk characterization Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
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Supplier Univar Solutions UK Ltd
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 6 Mid Point Business Park
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Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Fuels
Type Worker
Main user group Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC9a - Wide dispersive indoor use of substances in closed systems ERC9b - Wide dispersive outdoor use of substances in closed systems
Specific Environmental Release Category ESVOC SpERC 9.12b.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC16 - Using material as fuel sources, limited exposure to unburned product to be expected
Sector(s) of use SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC9a - Wide dispersive indoor use of substances in closed systems
 - ERC9b - Wide dispersive outdoor use of substances in closed systems
Specific Environmental Release Category - ESVOC SpERC 9.12b.v1

Amounts used

Type	Annual site tonnage
Value	0.12
Units	t(ons)/year
Type	Fraction of EU tonnage used in region
Value	0.1
Type	Fraction of regional tonnage used locally
Value	1
Type	Maximum daily site tonnage
Value	0.33

Units	kg/d
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Type	Regional use tonnage
Value	240
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.0001
Release fraction to wastewater from process (initial release prior to RMM)	0.00001
Release fraction to soil from process (initial release prior to RMM)	0.00001
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater
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Conditions and measures related to external treatment of waste for disposal

Disposal	This substance is consumed during use and no waste of the substance is generated
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Control of worker exposure

Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent	Assumes a good basic standard of occupational hygiene is implemented

/limit releases, dispersion and exposure	
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Bulk transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system Clear transfer lines prior to de-coupling
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Drum/batch transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Refuelling
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems) Use in contained systems Batch process
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC16 - Using material as fuel sources, limited exposure to unburned product to be expected

Title	Fuels (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC9a - Wide dispersive indoor use of substances in closed systems
- ERC9b - Wide dispersive outdoor use of substances in closed systems
Specific Environmental Release Category - ESVOC SpERC 9.12b.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model
Msafe 160 kg/d
Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.0000044
Waste Water		<= 0.0011

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic 12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic 150 mg/m³

Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
Remarks	Risk management measures are based on qualitative risk characterization Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Functional fluids
Type Worker
Main user group Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC9a - Wide dispersive indoor use of substances in closed systems ERC9b - Wide dispersive outdoor use of substances in closed systems
Specific Environmental Release Category ESVOC SpERC 9.13b.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
 PROC20 - Heat and pressure transfer fluids in dispersive, professional use but closed systems
Sector(s) of use SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC9a - Wide dispersive indoor use of substances in closed systems
 - ERC9b - Wide dispersive outdoor use of substances in closed systems
Specific Environmental Release Category - ESVOC SpERC 9.13b.v1

Amounts used

Type	Annual site tonnage
Value	0.0005
Units	t(ons)/year
Type	Fraction of EU tonnage used in region
Value	0.1
Type	Fraction of regional tonnage used locally
Value	1
Type	Maximum daily site tonnage
Value	0.0014

Units	kg/d
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Type	Regional use tonnage
Value	1
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.05
Release fraction to wastewater from process (initial release prior to RMM)	0.025
Release fraction to soil from process (initial release prior to RMM)	0.025
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid

Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Drum/batch transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	Filling/preparation of equipment from drums or containers.
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC20 - Heat and pressure transfer fluids in dispersive, professional use but closed systems

Title	Operation of equipment containing engine oils and similar (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Elevated temperature

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	Re-manufacture of reject articles
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC9a - Wide dispersive indoor use of substances in closed systems
- ERC9b - Wide dispersive outdoor use of substances in closed systems
Specific Environmental Release Category - ESVOC SpERC 9.13b.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with

Msafe Remarks	the Petrorisk model	
	0.68 kg/d	
	Qualitative approach used to conclude safe use	
	Environment	predicted exposure level
	Air	
Waste Water		Risk characterisation ratio (RCR)
		<= 0.0000056
		<= 0.0011

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
Remarks	Risk management measures are based on qualitative risk characterization Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
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Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title road and construction products.
Type Worker
Main user group Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC8d - Wide dispersive outdoor use of processing aids in open systems ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix
Specific Environmental Release Category ESVOC SpERC 8.15.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
 PROC10 - Roller application or brushing
 PROC11 - Non industrial spraying
 PROC13 - Treatment of articles by dipping and pouring
Sector(s) of use SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8d - Wide dispersive outdoor use of processing aids in open systems
 - ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix
Specific Environmental Release Category - ESVOC SpERC 8.15.v1

Amounts used

Type	Annual site tonnage
Value	6
Units	kg/d

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	1

Type	Maximum daily site tonnage
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Value	0.016
Units	kg/d

Type	Regional use tonnage
Value	12
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.95
Release fraction to wastewater from process (initial release prior to RMM)	0.01
Release fraction to soil from process (initial release prior to RMM)	0.04
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Covers concentrations up to	100%

Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Drum/batch transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Drum/batch transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Exposure duration	Avoid carrying out activities involving exposure for more than 4 hours
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Ensure operation is undertaken outdoors
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Elevated temperature

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC11 - Non industrial spraying
Title	Machine Spraying
Covers concentrations up to	50%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Ensure operation is undertaken outdoors
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better
Organisational measures to prevent	Assumes a good basic standard of occupational hygiene is implemented

/limit releases, dispersion and exposure	
Operational conditions	Elevated temperature
Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	Drum and small package filling
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8d - Wide dispersive outdoor use of processing aids in open systems

- ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix

Specific Environmental Release Category - ESVOC SpERC 8.15.v1

Predicted No Effect Concentration (PNEC)

Calculation method

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model

Msafe

8.1 kg/d

Remarks

Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.000011
Waste Water		<= 0.0011

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
Remarks	Risk management measures are based on qualitative risk characterization Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
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Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Use in laboratories
Type Worker
Main user group Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC8a - Wide dispersive indoor use of processing aids in open systems
Specific Environmental Release Category ESVOC SpERC 8.17.v1
Process category(ies) PROC10 - Roller application or brushing
 PROC15 - Use as laboratory reagent
Sector(s) of use SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
Specific Environmental Release Category - ESVOC SpERC 8.17.v1

Amounts used

Type	Annual site tonnage
Value	0.00005
Units	t(ons)/year

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	1

Type	Maximum daily site tonnage
Value	0.00014
Units	kg/d

Type	Regional use tonnage
Value	0.1
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.5
Release fraction to wastewater from process (initial release prior to RMM)	0.5
Release fraction to soil from process (initial release prior to RMM)	0
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of 0%
Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater

Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC15 - Use as laboratory reagent
Title	Laboratory activities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
Specific Environmental Release Category - ESVOC SpERC 8.17.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model

Msafe 0.068 kg/d

Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.000007
Waste Water		<= 0.0011

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Remarks Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating

conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
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Section 1 - Title

Title Use in polymer processing.
Type Worker
Main user group Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category ESVOC SpERC 8.21b.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC6 - Calendaring operations
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
 PROC21 - Low energy manipulation of substances bound in materials and/or articles
Sector(s) of use SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
 - ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category - ESVOC SpERC 8.21b.v1

Amounts used

Type	Annual site tonnage
Value	0.049
Units	t(ons)/year

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	1

Type	Maximum daily site tonnage
Value	0.13

Units	kg/d
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Type	Regional use tonnage
Value	98
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.98
Release fraction to wastewater from process (initial release prior to RMM)	0.01
Release fraction to soil from process (initial release prior to RMM)	0.01
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by freshwater Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Water	If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 0\%$ Not applicable as there is no release to wastewater
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid

Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Bulk transfers (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Material transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC6 - Calendaring operations PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Title	Injection moulding of articles
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC21 - Low energy manipulation of substances bound in materials and/or articles
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance

Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category - ESVOC SpERC 8.21b.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model
Msafe 66 kg/d
Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.000053
Waste Water		<= 0.0011

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
Remarks Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Water treatment chemicals
Type Worker
Main user group Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix
Specific Environmental Release Category ESVOC SpERC 8.22b.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC13 - Treatment of articles by dipping and pouring

Sector(s) of use SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix
Specific Environmental Release Category - ESVOC SpERC 8.22b.v1

Amounts used

Type	Annual site tonnage
Value	1.5
Units	t(ons)/year
Type	Fraction of EU tonnage used in region
Value	0.1
Type	Fraction of regional tonnage used locally
Value	1
Type	Maximum daily site tonnage
Value	4
Units	kg/d

Type	Regional use tonnage
Value	100
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.01
Release fraction to wastewater from process (initial release prior to RMM)	0.99
Release fraction to soil from process (initial release prior to RMM)	0
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%
Removal efficiency (total)	94.6%
Sludge treatment	Do not apply industrial sludge to natural soils Sludge should be incinerated, contained or reclaimed

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Risk from environmental exposure is driven by soil Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of 0%
Water	If discharging to domestic sewage treatment plant, no onsite wastewater treatment required If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0\%$ Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of $\geq 64.3\%$ Not applicable as there is no release to wastewater

Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Covers concentrations up to	100%
Physical form of product	Liquid

Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Drum/batch transfers
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	General exposures (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Organisational measures to prevent /limit releases, dispersion and	Assumes a good basic standard of occupational hygiene is implemented

exposure	
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Title	Storage
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix
Specific Environmental Release Category - ESVOC SpERC 8.22b.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrisk model

Msafe 26 kg/d
Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.16
Waste Water		<= 0.15

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Remarks Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Available hazard data does not support the need for a DNEL to be established for other health effects. Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in

section 2 are implemented. Risk management measures are based on qualitative risk characterization. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Coatings
Type Consumer
Main user group Consumer uses: Private households (= general public = consumers)
Environmental release category(ies) ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category ESVOC SpERC 8.3c.v1
Product category(ies) PC1 - Adhesives, sealants PC4 - Anti-freeze and de-icing products PC8 - Biocidal Products (e.g. disinfectants, pest control) PC9a - Coatings and paints, thinners, paint removers PC9b - Fillers, putties, plasters, modelling clay PC9c - Finger paints PC15 - Non-metal-surface treatment products PC18 - Ink and toners PC23 - Leather tanning, dye, finishing, impregnation and care products PC24 - Lubricants, greases, release products PC31 - Polishes and wax blends PC34 - Textile dyes, finishing and impregnating products SU21 - Consumer uses

Sector(s) of use

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
 - ERC8d - Wide dispersive outdoor use of processing aids in open systems

Specific Environmental Release Category - ESVOC SpERC 8.3c.v1

Amounts used

Type	Annual site tonnage
Value	0.025
Units	t(ons)/year

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	0.0005

Type	Maximum daily site tonnage
Value	0.069
Units	kg/d

Type	Regional use tonnage
Value	50

Units	t(ons)/year
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Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.985
Release fraction to wastewater from process (initial release prior to RMM)	0.01
Release fraction to soil from process (initial release prior to RMM)	0.005
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Control measures to prevent releases

Water	Not applicable as there is no release to wastewater
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of consumer exposure

Product (sub) category(ies)	General measures applicable to all activities
Physical form of product	Liquid
Risk management measures	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting Keep away from children

Product categories [PC]	PC1 - Adhesives, sealants
Product (sub) category(ies)	Glues, hobby use
Covers concentrations up to	30%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 9 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 4 hours
Covers skin contact area up to	35.73 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation.

	Covers use at ambient temperatures
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Product categories [PC]	PC1 - Adhesives, sealants
Product (sub) category(ies)	Glues DIY-use (carpet glue, tile glue, wood parquet glue)
Covers concentrations up to	30%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 6390 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 1 days per year Covers exposure up to 6 hours
Covers skin contact area up to	110 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC1 - Adhesives, sealants
Product (sub) category(ies)	Glue from spray
Covers concentrations up to	30%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 85.05 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 6 days per year Covers exposure up to 4 hours
Covers skin contact area up to	35.73 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC1 - Adhesives, sealants
Product (sub) category(ies)	Sealant
Covers concentrations up to	30%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 75 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 1 hours
Covers skin contact area up to	35.73 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC4 - Anti-freeze and de-icing products
Product (sub) category(ies)	Washing car window
Covers concentrations up to	1%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 0.5 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 0.02 hours
Covers skin contact area up to	857.5 cm ²
Use in room with a volume of minimum	34 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC4 - Anti-freeze and de-icing products
Product (sub) category(ies)	Pouring into radiator
Covers concentrations up to	10%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP

Amounts used	Covers use up to 2000 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 0.17 hours
Covers skin contact area up to	428 cm2
Use in room with a volume of minimum	34 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC4 - Anti-freeze and de-icing products
Product (sub) category(ies)	Lock de-icer
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 4 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 0.25 hours
Covers skin contact area up to	214.4 cm2
Use in room with a volume of minimum	34 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC8 - Biocidal Products (e.g. disinfectants, pest control)
Product (sub) category(ies)	Laundry and dish washing products
Covers concentrations up to	5%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 15 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 0.5 hours
Covers skin contact area up to	857.5 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC8 - Biocidal Products (e.g. disinfectants, pest control)
Product (sub) category(ies)	Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)
Covers concentrations up to	5%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 27 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 128 days per year Covers exposure up to 0.33 hours
Covers skin contact area up to	857.5 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC8 - Biocidal Products (e.g. disinfectants, pest control)
Product (sub) category(ies)	Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)
Covers concentrations up to	15%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 35 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 128 days per year Covers exposure up to 0.17 hours
Covers skin contact area up to	428 cm2

Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC9a - Coatings and paints, thinners, paint removers
Product (sub) category(ies)	Waterborne latex wall paint
Covers concentrations up to	1.5%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 2760 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 4 days per year Covers exposure up to 2.2 hours
Covers skin contact area up to	428.75 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC9a - Coatings and paints, thinners, paint removers
Product (sub) category(ies)	Solvent rich, high solid, water borne paint
Covers concentrations up to	27.5%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 744 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 6 days per year Covers exposure up to 2.2 hours
Covers skin contact area up to	428.75 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC9a - Coatings and paints, thinners, paint removers
Product (sub) category(ies)	Aerosol spray can
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 215 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 2 days per year Covers exposure up to 0.33 hours
Covers skin contact area up to	857.5 cm2
Use in room with a volume of minimum	34 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC9a - Coatings and paints, thinners, paint removers
Product (sub) category(ies)	Removers (paint-, glue-, wall paper-, sealant-remover)
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 491 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 3 days per year Covers exposure up to 2 hours
Covers skin contact area up to	857.5 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC9b - Fillers, putties, plasters, modelling clay
Product (sub) category(ies)	Fillers and putty

Covers concentrations up to	2%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 85 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 12 days per year Covers exposure up to 4 hours
Covers skin contact area up to	35.73 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC9b - Fillers, putties, plasters, modelling clay
Product (sub) category(ies)	Plasters and floor equalisers
Covers concentrations up to	2%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 13800 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 12 days per year Covers exposure up to 2 hours
Covers skin contact area up to	857.5 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC9b - Fillers, putties, plasters, modelling clay
Product (sub) category(ies)	Modelling clay
Covers concentrations up to	1%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 13800 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 6 hours
Covers skin contact area up to	254.4 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC9c - Finger paints
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 13800 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 6 hours
Covers skin contact area up to	254.4 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC15 - Non-metal-surface treatment products
Product (sub) category(ies)	Waterborne latex wall paint
Covers concentrations up to	1.5%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 2760 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 4 days per year Covers exposure up to 2.2 hours
Covers skin contact area up to	428.75 cm ²

Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC15 - Non-metal-surface treatment products
Covers concentrations up to	27.5%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 744 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 6 days per year Covers exposure up to 2.2 hours
Covers skin contact area up to	428.75 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC15 - Non-metal-surface treatment products
Product (sub) category(ies)	Aerosol spray can
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 215 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 2 days per year Covers exposure up to 0.33 hours
Covers skin contact area up to	857.5 cm2
Use in room with a volume of minimum	34 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC15 - Non-metal-surface treatment products
Product (sub) category(ies)	Removers (paint-, glue-, wall paper-, sealant-remover)
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 491 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 3 days per year Covers exposure up to 2 hours
Covers skin contact area up to	857.5 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC18 - Ink and toners
Covers concentrations up to	10%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 40 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 2.2 hours
Covers skin contact area up to	71.4 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC23 - Leather tanning, dye, finishing, impregnation and care products
Product (sub) category(ies)	Polishes, wax / cream (floor, furniture, shoes)
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP

Amounts used	Covers use up to 56 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 29 days per year Covers exposure up to 1.23 hours
Covers skin contact area up to	430 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC23 - Leather tanning, dye, finishing, impregnation and care products
Product (sub) category(ies)	Polishes, spray (furniture, shoes)
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 56 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 8 days per year Covers exposure up to 0.33 hours
Covers skin contact area up to	430 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC24 - Lubricants, greases, release products
Product (sub) category(ies)	Liquids
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 2200 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 4 days per year Covers exposure up to 0.17 hours
Covers skin contact area up to	468 cm2
Use in room with a volume of minimum	34 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC24 - Lubricants, greases, release products
Product (sub) category(ies)	Pastes
Covers concentrations up to	20%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP Paste
Amounts used	Covers use up to 34 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 10 days per year Covers exposure up to 4 hours
Covers skin contact area up to	468 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC24 - Lubricants, greases, release products
Product (sub) category(ies)	Sprays
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP Sprays
Amounts used	Covers use up to 73 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 6 days per year Covers exposure up to 0.17 hours

Covers skin contact area up to	428.75 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC31 - Polishes and wax blends
Product (sub) category(ies)	Polishes, wax / cream (floor, furniture, shoes)
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 142 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 29 days per year Covers exposure up to 1.23 hours
Covers skin contact area up to	430 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC31 - Polishes and wax blends
Product (sub) category(ies)	Polishes, spray (furniture, shoes)
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 35 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 8 days per year Covers exposure up to 0.33 hours
Covers skin contact area up to	430 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC34 - Textile dyes, finishing and impregnating products
Covers concentrations up to	10%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 115 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 1 hours
Covers skin contact area up to	857.5 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Section 3 - Exposure estimation

**Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category - ESVOC SpERC 8.3c.v1**

**Predicted No Effect Concentration
(PNEC)**

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrisk model

Msafe 34 kg/d

Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.000027
Waste Water		<= 0.0011

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method	The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated
Remarks	Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable consumer reference values when the operational conditions/risk management measures given in section 2 are implemented. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Lubricants
Type Consumer
Main user group Consumer uses: Private households (= general public = consumers)
Environmental release category(ies) ERC9a - Wide dispersive indoor use of substances in closed systems ERC9b - Wide dispersive outdoor use of substances in closed systems
Specific Environmental Release Category ESVOC SpERC 9.6d.v1
Product category(ies) PC1 - Adhesives, sealants PC24 - Lubricants, greases, release products PC31 - Polishes and wax blends
Sector(s) of use SU21 - Consumer uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC9a - Wide dispersive indoor use of substances in closed systems
 - ERC9b - Wide dispersive outdoor use of substances in closed systems
Specific Environmental Release Category - ESVOC SpERC 9.6d.v1

Amounts used

Type	Annual site tonnage
Value	0.001
Units	t(ons)/year

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	0.0005

Type	Maximum daily site tonnage
Value	0.0027
Units	kg/d

Type	Regional use tonnage
Value	2
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.01
Release fraction to wastewater from process (initial release prior to RMM)	0.01
Release fraction to soil from process (initial release prior to RMM)	0.01
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Control measures to prevent releases

Water	Not applicable as there is no release to wastewater
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of consumer exposure

Product (sub) category(ies)	General measures applicable to all activities
Physical form of product	Liquid
Risk management measures	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting Keep away from children

Product categories [PC]	PC1 - Adhesives, sealants
Product (sub) category(ies)	Glues, hobby use
Covers concentrations up to	30%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 9 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 4 hours
Covers skin contact area up to	35.73 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC1 - Adhesives, sealants
Product (sub) category(ies)	Glues DIY-use (carpet glue, tile glue, wood parquet glue)

Covers concentrations up to	30%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 6390 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 1 days per year Covers exposure up to 6 hours
Covers skin contact area up to	110 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC1 - Adhesives, sealants
Product (sub) category(ies)	Glue from spray
Covers concentrations up to	30%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 85.05 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 6 days per year Covers exposure up to 4 hours
Covers skin contact area up to	35.73 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC1 - Adhesives, sealants
Product (sub) category(ies)	Sealant
Covers concentrations up to	30%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 75 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 1 hours
Risk management measures	Open windows during application to ensure natural ventilation
Covers skin contact area up to	35.73 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC24 - Lubricants, greases, release products
Product (sub) category(ies)	Liquids
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 2200 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 4 days per year Covers exposure up to 0.17 hours
Covers skin contact area up to	468 cm ²
Use in room with a volume of minimum	34 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC24 - Lubricants, greases, release products
Product (sub) category(ies)	Pastes
Covers concentrations up to	20%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP Paste
Amounts used	Covers use up to 34 g/event
Use frequency	Covers use up to 1 events per day

	Covers use up to 10 days per year Covers exposure up to 4 hours
Covers skin contact area up to	468 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC24 - Lubricants, greases, release products
Product (sub) category(ies)	Sprays
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP Sprays
Amounts used	Covers use up to 73 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 6 days per year Covers exposure up to 0.17 hours
Covers skin contact area up to	428.75 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC31 - Polishes and wax blends
Product (sub) category(ies)	Polishes, wax / cream (floor, furniture, shoes)
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 142 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 29 days per year Covers exposure up to 1.23 hours
Covers skin contact area up to	430 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Section 3 - Exposure estimation

**Environmental release category(ies) - ERC9a - Wide dispersive indoor use of substances in closed systems
- ERC9b - Wide dispersive outdoor use of substances in closed systems**
Specific Environmental Release Category - ESVOC SpERC 9.6d.v1

**Predicted No Effect Concentration
(PNEC)**

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model

Msafe 1.4 kg/d

Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.0000053
Waste Water		<= 0.0011

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic

12. 5 mg/kg bw/d

Worker - inhalative, long-term - systemic

150 mg/m³

Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method	The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated
Remarks	Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable consumer reference values when the operational conditions/risk management measures given in section 2 are implemented. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Lubricants
Type Consumer
Main user group Consumer uses: Private households (= general public = consumers)
Environmental release category(ies) ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category ESVOC SpERC 8.6e.v1
Product category(ies) PC1 - Adhesives, sealants PC24 - Lubricants, greases, release products PC31 - Polishes and wax blends
Sector(s) of use SU21 - Consumer uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
 - ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category - ESVOC SpERC 8.6e.v1

Amounts used

Type	Annual site tonnage
Value	0.001
Units	t(ons)/year

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	0.0005

Type	Maximum daily site tonnage
Value	0.0027
Units	kg/d

Type	Regional use tonnage
Value	2
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.15
Release fraction to wastewater from process (initial release prior to RMM)	0.05
Release fraction to soil from process (initial release prior to RMM)	0.05
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Control measures to prevent releases

Water	Not applicable as there is no release to wastewater
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of consumer exposure

Product (sub) category(ies)	General measures applicable to all activities
Physical form of product	Liquid
Risk management measures	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting Keep away from children

Product categories [PC]	PC1 - Adhesives, sealants
Product (sub) category(ies)	Glues, hobby use
Covers concentrations up to	30%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 9 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 4 hours
Covers skin contact area up to	35.73 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC1 - Adhesives, sealants
Product (sub) category(ies)	Glues DIY-use (carpet glue, tile glue, wood parquet glue)

Covers concentrations up to	30%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 6390 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 1 days per year Covers exposure up to 6 hours
Covers skin contact area up to	110 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC1 - Adhesives, sealants
Product (sub) category(ies)	Glue from spray
Covers concentrations up to	30%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 85.05 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 6 days per year Covers exposure up to 4 hours
Covers skin contact area up to	35.73 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC1 - Adhesives, sealants
Product (sub) category(ies)	Sealant
Covers concentrations up to	30%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 75 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 1 hours
Risk management measures	Open windows during application to ensure natural ventilation
Covers skin contact area up to	35.73 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC24 - Lubricants, greases, release products
Product (sub) category(ies)	Liquids
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 2200 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 4 days per year Covers exposure up to 0.17 hours
Covers skin contact area up to	468 cm ²
Use in room with a volume of minimum	34 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC24 - Lubricants, greases, release products
Product (sub) category(ies)	Pastes
Covers concentrations up to	20%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP Paste
Amounts used	Covers use up to 34 g/event
Use frequency	Covers use up to 1 events per day

	Covers use up to 10 days per year Covers exposure up to 4 hours
Covers skin contact area up to	468 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC24 - Lubricants, greases, release products
Product (sub) category(ies)	Sprays
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP Sprays
Amounts used	Covers use up to 73 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 6 days per year Covers exposure up to 0.17 hours
Covers skin contact area up to	428.75 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC31 - Polishes and wax blends
Product (sub) category(ies)	Polishes, wax / cream (floor, furniture, shoes)
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 142 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 29 days per year Covers exposure up to 1.23 hours
Covers skin contact area up to	430 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category - ESVOC SpERC 8.6e.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model

Msafe 1.4 kg/d

Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.0000096
Waste Water		<= 0.0011

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic

12. 5 mg/kg bw/d

Worker - inhalative, long-term - systemic

150 mg/m³

Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method	The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated
Remarks	Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable consumer reference values when the operational conditions/risk management measures given in section 2 are implemented. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Use in agrochemicals
Type Consumer
Main user group Consumer uses: Private households (= general public = consumers)
Environmental release category(ies) ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category ESVOC SpERC 8.11b.v1
Product category(ies) PC12 - Fertilisers PC27 - Plant protection products
Sector(s) of use SU21 - Consumer uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
 - ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category - ESVOC SpERC 8.11b.v1

Amounts used

Type	Annual site tonnage
Value	0.05
Units	t(ons)/year

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	0.0005

Type	Maximum daily site tonnage
Value	0.14
Units	kg/d

Type	Regional use tonnage
Value	25
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.9
Release fraction to wastewater from process (initial release prior to RMM)	0.01
Release fraction to soil from process (initial release prior to RMM)	0.09
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Control measures to prevent releases

Water	Not applicable as there is no release to wastewater
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of consumer exposure

Product (sub) category(ies)	General measures applicable to all activities
Physical form of product	Liquid
Risk management measures	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting Keep away from children

Product categories [PC]	PC12 - Fertilisers
Product (sub) category(ies)	Lawn and garden preparations
Covers concentrations up to	15%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 0.3 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 4 hours
Covers skin contact area up to	857.5 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC27 - Plant protection products
Covers concentrations up to	15%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP

Amounts used	Covers use up to 0.3 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 4 hours
Covers skin contact area up to	857.5 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8d - Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category - ESVOC SpERC 8.11b.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model

Msafe 67 kg/d

Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.000054
Waste Water		<= 0.0011

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated

Remarks Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable consumer reference values when the operational conditions/risk management measures given in section 2 are implemented. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Fuels
Type Consumer
Main user group Consumer uses: Private households (= general public = consumers)
Environmental release category(ies) ERC9a - Wide dispersive indoor use of substances in closed systems ERC9b - Wide dispersive outdoor use of substances in closed systems
Specific Environmental Release Category ESVOC SpERC 9.12c.v1
Product category(ies) PC13 - Fuels
Sector(s) of use SU21 - Consumer uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC9a - Wide dispersive indoor use of substances in closed systems
 - ERC9b - Wide dispersive outdoor use of substances in closed systems
Specific Environmental Release Category - ESVOC SpERC 9.12c.v1

Amounts used

Type	Annual site tonnage
Value	0.086
Units	t(ons)/year

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	0.0005

Type	Maximum daily site tonnage
Value	0.23
Units	kg/d

Type	Regional use tonnage
Value	170
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.0001
Release fraction to wastewater from process (initial release prior to RMM)	0.00001
Release fraction to soil from process (initial release prior to RMM)	0.00001
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Control measures to prevent releases

Water	Not applicable as there is no release to wastewater
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Conditions and measures related to external treatment of waste for disposal

Disposal	This substance is consumed during use and no waste of the substance is generated
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Control of consumer exposure

Product (sub) category(ies)	General measures applicable to all activities
Physical form of product	Liquid
Risk management measures	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting Keep away from children

Product categories [PC]	PC13 - Fuels
Product (sub) category(ies)	Liquid: automotive refuelling
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 37500 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 52 days per year Covers exposure up to 0.05 hours
Covers skin contact area up to	210 cm2
Indoor/Outdoor use	Outdoor use
Use in room with a volume of minimum	100 m3
Operational conditions	Covers use at ambient temperatures

Product categories [PC]	PC13 - Fuels
Product (sub) category(ies)	Liquid: scooter refuelling
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 3750 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 52 days per year Covers exposure up to 0.03 hours

Covers skin contact area up to	210 cm2
Indoor/Outdoor use	Outdoor use
Use in room with a volume of minimum	100 m3
Operational conditions	Covers use at ambient temperatures

Product categories [PC]	PC13 - Fuels
Product (sub) category(ies)	Liquid: garden equipment - use
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 750 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 26 days per year Covers exposure up to 2 hours
Covers skin contact area up to	420 cm2
Indoor/Outdoor use	Outdoor use
Use in room with a volume of minimum	100 m3
Operational conditions	Covers use at ambient temperatures

Product categories [PC]	PC13 - Fuels
Product (sub) category(ies)	Liquid: garden equipment - refuelling
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 750 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 26 days per year Covers exposure up to 0.03 hours
Covers skin contact area up to	420 cm2
Use in room with a volume of minimum	34 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC13 - Fuels
Product (sub) category(ies)	Liquid: lamp oil
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 100 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 52 days per year Covers exposure up to 0.01 hours
Covers skin contact area up to	210 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC13 - Fuels
Product (sub) category(ies)	Liquid: home space heater fuel
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 3000 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 0.03 hours
Covers skin contact area up to	210 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Section 3 - Exposure estimation

Environmental release category(ies) - ERC9a - Wide dispersive indoor use of substances in closed systems
- ERC9b - Wide dispersive outdoor use of substances in closed systems
Specific Environmental Release Category - ESVOC SpERC 9.12c.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model

Msafe 120 kg/d

Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.0000044
Waste Water		<= 0.0011

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated

Remarks Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable consumer reference values when the operational conditions/risk management measures given in section 2 are implemented. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
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Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Functional fluids
Type Consumer
Main user group Consumer uses: Private households (= general public = consumers)
Environmental release category(ies) ERC9a - Wide dispersive indoor use of substances in closed systems ERC9b - Wide dispersive outdoor use of substances in closed systems
Specific Environmental Release Category ESVOC SpERC 9.13c.v1
Product category(ies) PC16 - Heat transfer fluids PC17 - Hydraulic fluids
Sector(s) of use SU21 - Consumer uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC9a - Wide dispersive indoor use of substances in closed systems
 - ERC9b - Wide dispersive outdoor use of substances in closed systems
Specific Environmental Release Category - ESVOC SpERC 9.13c.v1

Amounts used

Type	Annual site tonnage
Value	0.0005
Units	t(ons)/year

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	0.0005

Type	Maximum daily site tonnage
Value	0.0014
Units	kg/d

Type	Regional use tonnage
Value	1
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.05
Release fraction to wastewater from process (initial release prior to RMM)	0.025
Release fraction to soil from process (initial release prior to RMM)	0.025
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Control measures to prevent releases

Water	Not applicable as there is no release to wastewater
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of consumer exposure

Product (sub) category(ies)	General measures applicable to all activities
Physical form of product	Liquid
Risk management measures	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting Keep away from children

Product categories [PC]	PC16 - Heat transfer fluids
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 2200 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 4 days per year Covers exposure up to 0.17 hours
Covers skin contact area up to	468 cm2
Use in room with a volume of minimum	34 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC17 - Hydraulic fluids
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 2200 g/event

Use frequency	Covers use up to 1 events per day Covers use up to 4 days per year Covers exposure up to 0.17 hours
Covers skin contact area up to	468 cm ²
Use in room with a volume of minimum	34 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Section 3 - Exposure estimation

Environmental release category(ies) - ERC9a - Wide dispersive indoor use of substances in closed systems
- ERC9b - Wide dispersive outdoor use of substances in closed systems
Specific Environmental Release Category - ESVOC SpERC 9.13c.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model
Msafe 0.68 kg/d
Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.0000056
Waste Water		<= 0.0011

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated
Remarks Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable consumer reference values when the operational conditions/risk management measures given in section 2 are implemented. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Chemical name SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC
Pure substance/mixture Substance
REACH registration number 01-2119463583-34-XXXX
EC No (EU Index No) 918-811-1
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 6 Mid Point Business Park
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Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

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Section 1 - Title

Title Cleaning agent
Type Consumer
Main user group Consumer uses: Private households (= general public = consumers)
Environmental release category(ies) ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8b - Wide dispersive indoor use of reactive substances in open systems
Specific Environmental Release Category ESVOC SpERC 8.4c.v1
Product category(ies) PC3 - Air care products PC4 - Anti-freeze and de-icing products PC8 - Biocidal Products (e.g. disinfectants, pest control) PC9a - Coatings and paints, thinners, paint removers PC9b - Fillers, putties, plasters, modelling clay PC9c - Finger paints PC24 - Lubricants, greases, release products PC35 - Washing and cleaning products (including solvent based products) PC38 - Welding and soldering products, flux products
Sector(s) of use SU21 - Consumer uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
 - ERC8b - Wide dispersive indoor use of reactive substances in open systems

Specific Environmental Release Category - ESVOC SpERC 8.4c.v1

Amounts used

Type	Annual site tonnage
Value	0.00005
Units	t(ons)/year

Type	Fraction of EU tonnage used in region
Value	0.1

Type	Fraction of regional tonnage used locally
Value	0.0005

Type	Maximum daily site tonnage
Value	0.00014
Units	kg/d

Type	Regional use tonnage
Value	0.1
Units	t(ons)/year

Product characteristics

Remarks	Substance is complex UVCB
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	365
Release fraction to air from process (initial release prior to RMM)	0.95
Release fraction to wastewater from process (initial release prior to RMM)	0.025
Release fraction to soil from process (initial release prior to RMM)	0.025
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	94.6%

Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Control measures to prevent releases

Water	Not applicable as there is no release to wastewater
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of consumer exposure

Product (sub) category(ies)	General measures applicable to all activities
Physical form of product	Liquid
Risk management measures	H304 - May be fatal if swallowed and enters airways Do not ingest. If swallowed then seek immediate medical assistance Do NOT induce vomiting Keep away from children

Product categories [PC]	PC3 - Air care products
Product (sub) category(ies)	Air care, instant action (aerosol sprays)
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 0.1 g/event
Use frequency	Covers use up to 4 events per day Covers use up to 365 days per year Covers exposure up to 0.25 hours
Covers skin contact area up to	857.5 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC3 - Air care products
Product (sub) category(ies)	Air care, continuous action (solid and liquid)
Covers concentrations up to	10%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP Solid and Liquid
Amounts used	Covers use up to 0.48 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers daily exposures up to 8 hours (unless stated differently).
Covers skin contact area up to	35.7 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC4 - Anti-freeze and de-icing products
Product (sub) category(ies)	Washing car window
Covers concentrations up to	1%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 0.5 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 0.02 hours
Covers skin contact area up to	857.5 cm ²
Use in room with a volume of minimum	34 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC4 - Anti-freeze and de-icing products
Product (sub) category(ies)	Pouring into radiator
Covers concentrations up to	10%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 2000 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 0.17 hours
Covers skin contact area up to	428 cm ²
Use in room with a volume of minimum	34 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC4 - Anti-freeze and de-icing products
Product (sub) category(ies)	Lock de-icer
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 4 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 0.25 hours
Covers skin contact area up to	214.4 cm ²
Use in room with a volume of minimum	34 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC8 - Biocidal Products (e.g. disinfectants, pest control)
Product (sub) category(ies)	Laundry and dish washing products
Covers concentrations up to	5%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP

Amounts used	Covers use up to 15 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 0.5 hours
Covers skin contact area up to	857.5 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC8 - Biocidal Products (e.g. disinfectants, pest control)
Product (sub) category(ies)	Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)
Covers concentrations up to	5%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 27 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 128 days per year Covers exposure up to 0.33 hours
Covers skin contact area up to	857.5 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC8 - Biocidal Products (e.g. disinfectants, pest control)
Product (sub) category(ies)	Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)
Covers concentrations up to	15%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 35 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 128 days per year Covers exposure up to 0.17 hours
Covers skin contact area up to	428 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC9a - Coatings and paints, thinners, paint removers
Product (sub) category(ies)	Waterborne latex wall paint
Covers concentrations up to	1.5%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 2760 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 4 days per year Covers exposure up to 2.2 hours
Covers skin contact area up to	428.75 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC9a - Coatings and paints, thinners, paint removers
Product (sub) category(ies)	Solvent rich, high solid, water borne paint
Covers concentrations up to	27.5%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 744 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 6 days per year Covers exposure up to 2.2 hours
Covers skin contact area up to	428.75 cm ²

Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC9a - Coatings and paints, thinners, paint removers
Product (sub) category(ies)	Aerosol spray can
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 215 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 2 days per year Covers exposure up to 0.33 hours
Covers skin contact area up to	857.5 cm2
Use in room with a volume of minimum	34 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC9a - Coatings and paints, thinners, paint removers
Product (sub) category(ies)	Removers (paint-, glue-, wall paper-, sealant-remover)
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 491 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 3 days per year Covers exposure up to 2 hours
Covers skin contact area up to	857.5 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC9b - Fillers, putties, plasters, modelling clay
Product (sub) category(ies)	Fillers and putty
Covers concentrations up to	2%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 85 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 12 days per year Covers exposure up to 4 hours
Covers skin contact area up to	35.73 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC9b - Fillers, putties, plasters, modelling clay
Product (sub) category(ies)	Plasters and floor equalisers
Covers concentrations up to	2%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 13800 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 12 days per year Covers exposure up to 2 hours
Covers skin contact area up to	857.5 cm2
Use in room with a volume of minimum	20 m3
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC9b - Fillers, putties, plasters, modelling clay
Product (sub) category(ies)	Modelling clay

Covers concentrations up to	1%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 13800 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers daily exposures up to 8 hours (unless stated differently).
Covers skin contact area up to	254.4 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC9c - Finger paints
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 13800 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers daily exposures up to 8 hours (unless stated differently).
Covers skin contact area up to	254.4 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC24 - Lubricants, greases, release products
Product (sub) category(ies)	Liquids
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 2200 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 4 days per year Covers exposure up to 0.17 hours
Covers skin contact area up to	468 cm ²
Use in room with a volume of minimum	34 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC24 - Lubricants, greases, release products
Product (sub) category(ies)	Pastes
Covers concentrations up to	20%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP Paste
Amounts used	Covers use up to 34 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 10 days per year Covers exposure up to 4 hours
Covers skin contact area up to	468 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC24 - Lubricants, greases, release products
Product (sub) category(ies)	Sprays
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP Sprays
Amounts used	Covers use up to 73 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 6 days per year

	Covers exposure up to 0.17 hours
Covers skin contact area up to	428.75 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC35 - Washing and cleaning products (including solvent based products)
Product (sub) category(ies)	Laundry and dish washing products
Covers concentrations up to	5%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 15 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 0.5 hours
Covers skin contact area up to	857.5 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC35 - Washing and cleaning products (including solvent based products)
Product (sub) category(ies)	Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)
Covers concentrations up to	5%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 27 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 128 days per year Covers exposure up to 0.33 hours
Covers skin contact area up to	857.5 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC35 - Washing and cleaning products (including solvent based products)
Product (sub) category(ies)	Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)
Covers concentrations up to	15%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 35 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 128 days per year Covers exposure up to 0.17 hours
Covers skin contact area up to	428 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC38 - Welding and soldering products, flux products
Covers concentrations up to	20%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 12 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers exposure up to 1 hours
Covers skin contact area up to	857.5 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC3 - Air care products
Product (sub) category(ies)	Air care, instant action (aerosol sprays)
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Amounts used	Covers use up to 0.5 g/event
Use frequency	Covers use up to 4 events per day Covers use up to 365 days per year Covers exposure up to 0.25 hours
Covers skin contact area up to	857.5 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Product categories [PC]	PC3 - Air care products
Product (sub) category(ies)	Air care, continuous action (solid and liquid)
Covers concentrations up to	30%
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP Solid and Liquid
Amounts used	Covers use up to 0.48 g/event
Use frequency	Covers use up to 1 events per day Covers use up to 365 days per year Covers daily exposures up to 8 hours (unless stated differently).
Covers skin contact area up to	35.7 cm ²
Use in room with a volume of minimum	20 m ³
Operational conditions	Covers use under typical household ventilation. Covers use at ambient temperatures

Section 3 - Exposure estimation

**Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8b - Wide dispersive indoor use of reactive substances in open systems**
Specific Environmental Release Category - ESVOC SpERC 8.4c.v1

Predicted No Effect Concentration (PNEC)

Calculation method The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model
Msafe 0.068 kg/d
Remarks Qualitative approach used to conclude safe use

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Air		<= 0.0000044
Waste Water		<= 0.0011

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12.5 mg/kg bw/d
Worker - inhalative, long-term - systemic	150 mg/m ³
Consumer - oral, long-term - systemic	7.5 mg/kg bw/d
Consumer - dermal, long-term - systemic	7.5 mg/kg bw/d
Consumer - inhalative, long-term - systemic	32 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated
Remarks Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable consumer reference values when the operational conditions/risk management measures given in section 2 are implemented. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.