

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

Supersedes date 02-Dec-2019

Revision date 05-Jul-2024

Revision Number 5

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

1.1. Product identifier

Product Code(s)	00649
Safety data sheet number	00649
Product Name	ISOBUTYL ACETATE
Index No	607-026-00-7
EC Number	203-745-1
CAS No	110-19-0
Pure substance/mixture	Substance
Contains ISOBUTYL ACETATE	
Molecular weight	116.16

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

Recommended use	paint Adhesives Solvent Surface coating Cleaning agent Laboratory chemicals For further information, see attached Exposure Scenario
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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)
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Flammable liquids	Category 2 - (H225)
Specific target organ toxicity — single exposure	Category 3 - (H336)

2.2. Label elements

Contains ISOBUTYL ACETATE



Signal word
Danger

Hazard statements

H336 - May cause drowsiness or dizziness
H225 - Highly flammable liquid and vapour
EUH066 - Repeated exposure may cause skin dryness or cracking

Precautionary statements

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
P312 - Call a POISON CENTER or doctor if you feel unwell
P370 + P378 - In case of fire: Use dry chemical, CO₂, water spray or alcohol-resistant foam to extinguish
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P501 - Dispose of contents/ container to an approved waste disposal plant

Additional information

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

2.3. Other hazards

Vapours can form explosive mixtures with air. Vapours are heavier than air and may travel along the floor and in the bottom of containers. Vapours may be ignited by a spark, a hot surface or an ember.

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)
ISOBUTYL ACETATE 110-19-0	>99%	203-745-1	-	(EUH066) Flam. Liq. 2 (H225)	-	-	-

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.
Inhalation	Remove to fresh air. IF exposed or concerned: Get medical advice/attention.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical attention.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if symptoms occur.
Ingestion	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a doctor.
Self-protection of the first aider	Remove all sources of ignition. 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. See section 8 for more information.

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

Symptoms	Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Inhalation	Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Eyes	May cause temporary eye irritation.
Dermal	Repeated exposure may cause skin dryness or cracking.
Ingestion	May result in aspiration into the lungs, causing chemical pneumonia. Risk of lung oedema.

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. Carbon dioxide (CO ₂). Water spray. Alcohol resistant foam.
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

Specific hazards arising from the chemical	Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Vapours are heavier than air and may travel along the floor and in the bottom of containers. Vapours may be ignited by a spark, a hot surface or an ember.
Hazardous combustion products	Carbon oxides.

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	Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.
Other information	Ventilate the area. 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	Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.
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6.3. Methods and material for containment and cleaning up

Methods for containment	Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapour suppressing foam may be used to reduce vapours. Dyke far ahead of spill to collect run-off water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
Methods for cleaning up	Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Use non-sparking tools.
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	Use personal protection equipment. Avoid contact with skin and eyes. Avoid breathing vapours or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. In case of insufficient ventilation, wear suitable respiratory equipment.
General hygiene considerations	Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Ensure that eyewash stations and safety showers are close to the workstation location.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labelled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Avoid contact with: Strong acids. Strong bases. Strong oxidising agents.
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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**

Chemical name	United Kingdom
ISOBUTYL ACETATE 110-19-0	TWA: 150 ppm TWA: 724 mg/m ³ STEL: 187 ppm STEL: 903 mg/m ³

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
ISOBUTYL ACETATE 110-19-0		10 mg/kg/day [4] [7]	600 mg/m ³ [4] [7]

[4] Systemic health effects.
[7] Short term.

Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
ISOBUTYL ACETATE 110-19-0	5 mg/kg/day [4] [7]	5 mg/kg bw/day [4] [6] 5 mg/kg bw/day [4] [7]	35.7 mg/m ³ [4] [6]

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

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
ISOBUTYL ACETATE 110-19-0	0.17 mg/l	0.34 mg/L	0.017 mg/l		

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
ISOBUTYL ACETATE 110-19-0	0.877 mg/kg	0.0877 mg/kg	200 mg/L	0.0755 mg/kg	200 mg/l

8.2. Exposure controls**Engineering controls**

Apply technical measures to comply with the occupational exposure limits. Ensure adequate ventilation, especially in confined areas. Use non sparking handtools and explosion-proof electric equipment.

Personal protective equipment

Eye/face protection	Tight sealing safety goggles. Use eye protection according to EN 166.		
Hand protection	Wear suitable gloves. Impervious gloves. 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.		
Gloves			
Duration of contact	PPE - Glove material	Glove thickness	Break through time
	Nitrile rubber	0.9 mm	>30 minutes
	Butyl rubber	0.3 mm	>60 minutes
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Antistatic boots.		
Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Gas filter, type A.		
General hygiene considerations	Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Ensure that eyewash stations and safety showers are close to the workstation location.		

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state	Liquid	
Appearance	Liquid	
Colour	Colourless	
Odour	Fruity.	
Odour threshold	19.3 mg/m ³	
Property	Values	Remarks • Method
Melting point / freezing point	< -90 °C	No information available.
Initial boiling point and boiling range	117 °C	No information available.
Flammability		No information available.
Flammability Limit in Air		No information available.
Upper flammability or explosive limits	10.5 Vol %	
Lower flammability or explosive limits	1.3 Vol %	
Flash point	22 °C	Closed cup.
Autoignition temperature	430 °C	430°C.
Decomposition temperature		No information available.
pH		No information available.
pH (as aqueous solution)	6.7	solution (0.5 %).
Kinematic viscosity	0.804 mm ² /s	@ 20 °C.
Dynamic viscosity		No information available.
Water solubility	5.6 g/l @ 20 °C	No information available.
Solubility(ies)		No information available.
Partition coefficient	log Pow: 2.3	No information available.
Vapour pressure	21 hPa @ 20°C 89 hPa @ 50°C	No information available.
Relative density	0.871 @ 20°C	No information available.
Bulk density		No information available
Liquid Density	No information available	No information available
Relative vapour density	4	No information available.
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	116.16 2 n-butyl acetate=1
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SECTION 10: Stability and reactivity**10.1. Reactivity**

Reactivity	Stable under recommended storage conditions.
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10.2. Chemical stability

Stability	Stable under normal conditions.
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Explosion data

Sensitivity to mechanical impact	None.
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Sensitivity to static discharge	Yes.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Highly flammable liquid and vapour. Vapours can form explosive mixtures with air.
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10.4. Conditions to avoid

Conditions to avoid	Heat, flames and sparks. static discharge (electrostatic discharge).
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10.5. Incompatible materials

Incompatible materials	Strong acids. Strong bases. Strong oxidising agents.
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10.6. Hazardous decomposition products

Hazardous decomposition products	Carbon oxides.
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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	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
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Acute toxicity**Numerical measures of toxicity****Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
ISOBUTYL ACETATE	= 15400 mg/kg (Rat)	> 17400 mg/kg (Rabbit)	30 mg/l (Rat)

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

Skin corrosion/irritation Based on available data the classification criteria are not met.

Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD 404	Rabbit	Dermal			non-irritant

Serious eye damage/eye irritation Based on available data the classification criteria are not met.

Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD 405	Rabbit	eye			non-irritant

Respiratory or skin sensitisation Based on available data the classification criteria are not met.

Method	Species	Exposure route	Results
OECD 406	Guinea pig	Dermal	Not a skin sensitiser

Germ cell mutagenicity Based on available data the classification criteria are not met.

Product Information		
Method	Species	Results
OECD 473	in vitro	Negative

Carcinogenicity Based on available data the classification criteria are not met.

Reproductive toxicity Based on available data the classification criteria are not met.

STOT - single exposure May cause drowsiness or dizziness.

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard Based on available data the classification criteria are not met.

Other adverse effects No information available.

SECTION 12: Ecological information**12.1. Toxicity**

Ecotoxicity The environmental impact of this product has not been fully investigated.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
ISOBUTYL ACETATE	EC50: =397mg/L (72h, Pseudokirchneriella subcapitata)	LC50: =17mg/L (96h, Oryzias latipes)	-	EC50: =25mg/L (48h, Daphnia magna)

12.2. Persistence and degradability

Persistence and degradability Readily biodegradable.

Method	Exposure time	Value	Results
OECD Test No. 301D: Ready Biodegradability: Closed Bottle Test (TG 301 D)	20 days	81%	Readily biodegradable

12.3. Bioaccumulative potential

Bioaccumulation Not likely to bioaccumulate.

Bioconcentration factor (BCF) 15.3

Component Information

Chemical name	Partition coefficient
ISOBUTYL ACETATE	2.3

12.4. Mobility in soil

Mobility in soil No information available.

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.

Chemical name	PBT and vPvB assessment
ISOBUTYL ACETATE	The substance is not PBT / vPvB

12.6. Other adverse effects

No information available.

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

Waste from residues/unused products Waste is classified as hazardous waste. Disposal to licensed waste disposal site in accordance with the local Waste Disposal Authority.

Contaminated packaging Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

SECTION 14: Transport information**IATA**

14.1 UN number or ID number UN1213
 14.2 UN proper shipping name ISOBUTYL ACETATE
 14.3 Transport hazard class(es) 3
 14.4 Packing group II
 14.5 Environmental hazards No
 14.6 Special precautions for user
 Special Provisions None
 ERG Code 3L

IMDG

14.1 UN number or ID number UN1213
 UN proper shipping name ISOBUTYL ACETATE
 14.3 Transport hazard class(es) 3
 14.4 Packing group II
 14.5 Environmental hazards No
 14.6 Special precautions for user
 Special Provisions None
 EmS-No F-E, S-D
 14.7 Maritime transport in bulk according to IMO instruments No information available

RID

14.1 UN number or ID number	UN1213
14.2 UN proper shipping name	ISOBUTYL ACETATE
14.3 Transport hazard class(es)	3
14.4 Packing group	II
14.5 Environmental hazards	No
14.6 Special precautions for user	
Special Provisions	None
Classification code	F1

ADR

14.1 UN number or ID number	UN1213
14.2 UN proper shipping name	ISOBUTYL ACETATE
14.3 Transport hazard class(es)	3
14.4 Packing group	II
14.5 Environmental hazards	No
14.6 Special precautions for user	
Special Provisions	None
Classification code	F1
Tunnel restriction code	(D/E)

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 contains one or more substances subject to restriction (UK REACH - Annex XVII).

Product restricted per REACH Annex XVII: 3

Persistent Organic Pollutants

Not applicable

Export Notification requirements

Not applicable

Dangerous substance category per COMAH Regulations 2015 (as amended)

P5b - FLAMMABLE LIQUIDS

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	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECI	Complies

PICCS	Complies
AIIC	Complies
NZIoC	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - 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****Full text of H-Statements referred to under section 3**

EUH066 - Repeated exposure may cause skin dryness or cracking
 H225 - Highly flammable liquid and vapour

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 **SDS sections updated 1 8 9 11 16**

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 K Winter
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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 ISOBUTYL ACETATE
REACH registration number 01-2119488971-22-XXXX
CAS No 110-19-0
EC No (EU Index No) 203-745-1
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	Daily amount per site
Value	13330
Units	kg/d

Type	Annual amount per site
Value	4000
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	300
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Release fraction to air from process (initial release prior to RMM)	2.5%
Release fraction to wastewater from process (initial release prior to RMM)	0.05%
Release fraction to soil from process (initial release prior to RMM)	0.01%

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000
Removal efficiency fraction (offsite; STP)	89.4%
Sludge treatment	Do not apply industrial sludge to natural soils

Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	10
Local marine water dilution factor	100

Control measures to prevent releases

Water	Typical onsite wastewater treatment technology provides removal efficiency of 90% Acclimated biological treatment
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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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Control of worker exposure

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC3 - Use in closed batch process (synthesis or formulation) PROC15 - Use as laboratory reagent
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Covers skin contact area up to	240 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Covers skin contact area up to	480 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Conditions and measures related to personal protection, hygiene and	Wear suitable gloves tested to EN 374

health evaluation	
Covers skin contact area up to	480 cm2
Indoor/Outdoor use	Covers indoor and outdoor use
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) 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
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374 In case of inadequate ventilation wear respiratory protection Wear a respirator providing a minimum efficiency of 90%
Covers skin contact area up to	480 cm2
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, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374 In case of inadequate ventilation wear respiratory protection Wear a respirator providing a minimum efficiency of 90%
Covers skin contact area up to	960 cm2
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, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Covers skin contact area up to	960 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

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)

Freshwater	0.17 mg/l
Freshwater sediment	0.877 mg/kg
Marine water	0.017 mg/l
Marine sediment	0.0877 mg/kg

Soil 0.0755 mg/kg
Impact on Sewage Treatment 200 mg/l

Calculation method	Used CHESAR model	
Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.036 mg/l	0.209
Freshwater sediment	0.713 mg/kg	0.813
Marine water	0.004 mg/l	0.209
Marine sediment	0.071 mg/kg	0.812
Soil	0.011 mg /kg	0.143
STP: Sewage Treatment Plant	0.354 mg/l	0.01

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic 10 mg/kg/day
Worker - inhalative, long-term - systemic 300 mg/m³

Calculation method	Used CHESAR model		
Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.194 mg/m ³	0.0003
PROC1 - Use in closed process, no likelihood of exposure	Worker - dermal, long-term - systemic	0.034 mg/kg/d	0.003
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.137
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	193.6 mg/m ³	0.323
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.69 mg/kg/d	0.069
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	387.2 mg/m ³	0.645
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, long-term - systemic	1.372 mg/kg/d	0.137
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - dermal, long-term - systemic	2.742 mg/kg/d	0.274
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	2.742 mg/kg/d	0.274
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	484 mg/m ³	0.807

PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	1.371 mg/kg/d	0.137
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - dermal, long-term - systemic	6.86 mg/kg/d	0.686
PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161
PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising	Worker - dermal, long-term - systemic	0.686 mg/kg/d	0.069
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	193.6 mg/m ³	0.323
PROC15 - Use as laboratory reagent	Worker - dermal, long-term - systemic	0.34 mg/kg/d	0.034

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. 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 ISOBUTYL ACETATE
REACH registration number 01-2119488971-22-XXXX
CAS No 110-19-0
EC No (EU Index No) 203-745-1
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) ERC2 - Formulation of preparations (mixtures)
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

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 1.1b.v1

Amounts used

Type	Daily amount per site
Value	33
Units	kg/d

Type	Annual amount per site
Value	50000
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	300
Release fraction to air from process (initial release prior to RMM)	0.01%
Release fraction to wastewater from process (initial release prior to RMM)	0.001%
Release fraction to soil from process	0.001%

(initial release prior to RMM)	
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Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000
Removal efficiency fraction (offsite; STP)	89.4%

Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	10
Local marine water dilution factor	100

Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of 90%
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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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Control of worker exposure

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC3 - Use in closed batch process (synthesis or formulation) PROC15 - Use as laboratory reagent
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Covers skin contact area up to	240 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374
Covers skin contact area up to	480 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

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, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374 In case of inadequate ventilation wear respiratory protection Wear a respirator providing a minimum efficiency of 90%
Covers skin contact area up to	960 cm2

Indoor/Outdoor use	Covers indoor and outdoor use
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, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur 90% Local exhaust ventilation - efficiency of at least
Conditions and measures related to personal protection, hygiene and health evaluation	In case of inadequate ventilation wear respiratory protection Wear a respirator providing a minimum efficiency of 90%
Covers skin contact area up to	480 cm ²
Indoor/Outdoor use	Covers indoor and outdoor use

Section 3 - Exposure estimation

Environmental release category(ies) - ERC2 - Formulation of preparations (mixtures)
Specific Environmental Release Category - ESVOC SpERC 1.1b.v1

Predicted No Effect Concentration (PNEC)

Freshwater	0.17 mg/l
Freshwater sediment	0.877 mg/kg
Marine water	0.017 mg/l
Marine sediment	0.0877 mg/kg
Soil	0.0755 mg/kg
Impact on Sewage Treatment	200 mg/l

Calculation method Used CHESAR model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.0002 mg/l	0.01
Freshwater sediment	0.005 mg/kg	0.01
Marine water	0.00002 mg/l	0.01
Marine sediment	0.0004 mg/kg	0.01
Soil	0.0006 mg /kg	0.008
STP: Sewage Treatment Plant	0.00002 mg/l	0.01

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	10 mg/kg/day
Worker - inhalative, long-term - systemic	300 mg/m ³

Calculation method Used CHESAR model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.194 mg/m ³	0.0003
PROC1 - Use in closed process, no likelihood of exposure	Worker - dermal, long-term - systemic	0.034 mg/kg/d	0.003
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - dermal, long-term - systemic	0.274 mg/kg/d	0.027

PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	193.6 mg/m ³	0.323
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.69 mg/kg/d	0.069
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	387.2 mg/m ³	0.645
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, long-term - systemic	1.372 mg/kg/d	0.137
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	2.742 mg/kg/d	0.274
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	484 mg/m ³	0.807
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	1.371 mg/kg/d	0.137
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - dermal, long-term - systemic	6.86 mg/kg/d	0.686
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	193.6 mg/m ³	0.323
PROC15 - Use as laboratory reagent	Worker - dermal, long-term - systemic	0.34 mg/kg/d	0.034

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. 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]

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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 coatings (Industrial)
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
 PROC10 - Roller application or brushing
 PROC13 - Treatment of articles by dipping and pouring
 PROC15 - Use as laboratory reagent

Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU5
 - Manufacture of textiles, leather, fur SU7 - Printing and reproduction of recorded media

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	Daily amount per site
Value	13330
Units	kg/d

Type	Annual amount per site
Value	4000
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	300
Release fraction to air from process (initial release prior to RMM)	14.7%
Release fraction to wastewater from process (initial release prior to RMM)	0.04%
Release fraction to soil from process (initial release prior to RMM)	0%

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000
Removal efficiency fraction (offsite; STP)	89.4%
Sludge treatment	Do not apply industrial sludge to natural soils

Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	10
Local marine water dilution factor	100

Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of Efficiency of at least
Water	Typical onsite wastewater treatment technology provides removal efficiency of 98% Acclimated biological treatment

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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Control of worker exposure

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC3 - Use in closed batch process (synthesis or formulation) PROC15 - Use as laboratory reagent
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Covers skin contact area up to	240 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Covers skin contact area up to	480 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)

Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374
Covers skin contact area up to	480 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374 In case of inadequate ventilation wear respiratory protection Wear a respirator providing a minimum efficiency of 90%
Covers skin contact area up to	480 cm2

Process category(ies)	PROC7 - Industrial spraying
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Covers skin contact area up to	1500 cm2
Indoor/Outdoor use	Indoor use

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374 In case of inadequate ventilation wear respiratory protection Wear a respirator providing a minimum efficiency of 90%
Covers skin contact area up to	960 cm2

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, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Covers skin contact area up to	960 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

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)

Freshwater	0.17 mg/l
Freshwater sediment	0.877 mg/kg
Marine water	0.017 mg/l
Marine sediment	0.0877 mg/kg
Soil	0.0755 mg/kg
Impact on Sewage Treatment	200 mg/l

Calculation method Used CHESAR model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.029 mg/l	0.168
Freshwater sediment	0.571 mg/kg	0.651
Marine water	0.003 mg/l	0.168
Marine sediment	0.057 mg/kg	0.651
Soil	0.063 mg /kg	0.84
STP: Sewage Treatment Plant	0.283 mg/l	0.01

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	10 mg/kg/day
Worker - inhalative, long-term - systemic	300 mg/m ³

Calculation method Used CHESAR model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.194 mg/m ³	0.0002
PROC1 - Use in closed process, no likelihood of exposure	Worker - dermal, long-term - systemic	0.034 mg/kg/d	0.003
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.137
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	193.6 mg/m ³	0.323
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.69 mg/kg/d	0.069
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	387.2 mg/m ³	0.645
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, long-term - systemic	1.372 mg/kg/d	0.137
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161
PROC5 - Mixing or blending in batch	Worker - dermal, long-term -	2.742 mg/kg/d	0.274

processes for formulation of preparations and articles (multi-stage and/or significant contact)	systemic		
PROC7 - Industrial spraying	Worker - inhalative, long-term - systemic	242 mg/m ³	0.403
PROC7 - Industrial spraying	Worker - dermal, long-term - systemic	4.286 mg/kg/d	0.429
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	2.742 mg/kg/d	0.274
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	484 mg/m ³	0.807
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	1.371 mg/kg/d	0.137
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	5.486 mg/kg/d	0.549
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161
PROC13 - Treatment of articles by dipping and pouring	Worker - dermal, long-term - systemic	2.742 mg/kg/d	0.274
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	193.6 mg/m ³	0.323
PROC15 - Use as laboratory reagent	Worker - dermal, long-term - systemic	0.34 mg/kg/d	0.034

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. 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 ISOBUTYL ACETATE
REACH registration number 01-2119488971-22-XXXX
CAS No 110-19-0
EC No (EU Index No) 203-745-1
Supplier Univar Solutions UK Ltd
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 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 coatings (Professional)
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 8.3b.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
Specific Environmental Release Category - ESVOC SpERC 8.3b.v1

Amounts used

Type	Daily amount for wide dispersive uses
Value	0.5
Units	kg/d

Type	Annual amount per site
Value	4000
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

Other operational conditions of use affecting environmental exposure

Release fraction to air from process (initial release prior to RMM)	98%
Release fraction to wastewater from process (initial release prior to RMM)	1%
Release fraction to soil from process (initial release prior to RMM)	1%

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000
Removal efficiency fraction (offsite; STP)	89.4%

Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	10
Local marine water dilution factor	100

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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Control of worker exposure

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC3 - Use in closed batch process (synthesis or formulation) PROC15 - Use as laboratory reagent
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Covers skin contact area up to	240 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Covers skin contact area up to	480 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

Process category(ies)	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) PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards	Provide a basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least

the worker	80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374 In case of inadequate ventilation wear respiratory protection Wear a respirator providing a minimum efficiency of 90%
Covers skin contact area up to	480 cm2

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
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374 In case of inadequate ventilation wear respiratory protection Wear a respirator providing a minimum efficiency of 90%
Covers skin contact area up to	960 cm2

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training In case of inadequate ventilation wear respiratory protection Wear a respirator providing a minimum efficiency of 90%
Covers skin contact area up to	960 cm2

Process category(ies)	PROC11 - Non industrial spraying
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Wear a respirator providing a minimum efficiency of 90%
Covers skin contact area up to	1500 cm2
Indoor/Outdoor use	Indoor use

Process category(ies)	PROC11 - Non industrial spraying
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Wear a respirator providing a minimum efficiency of 95%
Covers skin contact area up to	1500 cm2

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP

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 basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Wear a respirator providing a minimum efficiency of 90%
Covers skin contact area up to	1980 cm2

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 8.3b.v1

Predicted No Effect Concentration (PNEC)

Freshwater	0.17 mg/l
Freshwater sediment	0.877 mg/kg
Marine water	0.017 mg/l
Marine sediment	0.0877 mg/kg
Soil	0.0755 mg/kg
Impact on Sewage Treatment	200 mg/l

Calculation method Used CHESAR model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.0003 mg/l	0.01
Freshwater sediment	0.005 mg/kg	0.01
Marine water	0.00002 mg/l	0.01
Marine sediment	0.0005 mg/kg	0.01
Soil	0.0001 mg /kg	0.01
STP: Sewage Treatment Plant	0.0003 mg/l	0.01

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	10 mg/kg/day
Worker - inhalative, long-term - systemic	300 mg/m ³

Calculation method Used CHESAR model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.194 mg/m ³	0.0002
PROC1 - Use in closed process, no likelihood of exposure	Worker - dermal, long-term - systemic	0.034 mg/kg/d	0.003
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	387.2 mg/m ³	0.645
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.137
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	484 mg/m ³	0.807
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.69 mg/kg/d	0.069
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	193.6 mg/m ³	0.323

PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, long-term - systemic	1.372 mg/kg/d	0.137
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	387.2 mg/m ³	0.645
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - dermal, long-term - systemic	2.742 mg/kg/d	0.274
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	387.2 mg/m ³	0.645
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	2.742 mg/kg/d	0.274
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	2.742 mg/kg/d	0.274
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	387.2 mg/m ³	0.645
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	2.743 mg/kg/d	0.274
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	116.2 mg/m ³	0.194
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	203.3 mg/m ³	0.339
PROC11 - Non industrial spraying	Worker - dermal, long-term - systemic	6.428 mg/kg/d	0.643
PROC11 - Non industrial spraying	Worker - dermal, long-term - systemic	6.428 mg/kg/d	0.643
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	387.2 mg/m ³	0.645
PROC13 - Treatment of articles by dipping and pouring	Worker - dermal, long-term - systemic	2.742 mg/kg/d	0.274
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	193.6 mg/m ³	0.323
PROC15 - Use as laboratory reagent	Worker - dermal, long-term - systemic	0.34 mg/kg/d	0.034
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	81.31 mg/m ³	0.136
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - dermal, long-term - systemic	8.486 mg/kg/d	0.849

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. 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 ISOBUTYL ACETATE
REACH registration number 01-2119488971-22-XXXX
CAS No 110-19-0
EC No (EU Index No) 203-745-1
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 Cleaning Agents (Industrial)
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 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) - 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	Daily amount per site
Value	5000
Units	kg/d

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

Other operational conditions of use affecting environmental exposure

Emission days	20
Release fraction to air from process	50%

(initial release prior to RMM)	
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%

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000
Removal efficiency fraction (offsite; STP)	89.4%

Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	10
Local marine water dilution factor	100

Control measures to prevent releases

Air	Treat air emission to provide a typical removal efficiency of 50%
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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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Control of worker exposure	
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Covers skin contact area up to	240 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374
Covers skin contact area up to	480 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

Process category(ies)	PROC7 - Industrial spraying
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least 95%
Conditions and measures related to	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee

personal protection, hygiene and health evaluation	training
Covers skin contact area up to	1500 cm2
Indoor/Outdoor use	Indoor

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374 In case of inadequate ventilation wear respiratory protection Wear a respirator providing a minimum efficiency of 90%
Covers skin contact area up to	960 cm2

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, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Covers skin contact area up to	960 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374 In case of inadequate ventilation wear respiratory protection Wear a respirator providing a minimum efficiency of 90%
Covers skin contact area up to	480 cm2

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)

Freshwater	0.17 mg/l
Freshwater sediment	0.877 mg/kg
Marine water	0.017 mg/l
Marine sediment	0.0877 mg/kg
Soil	0.0755 mg/kg
Impact on Sewage Treatment	200 mg/l

Calculation method	Used CHESAR model	
Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.003 mg/l	0.017
Freshwater sediment	0.058 mg/kg	0.066
Marine water	0.0003 mg/l	0.017
Marine sediment	0.006 mg/kg	0.065
Soil	0.015 mg /kg	0.204
STP: Sewage Treatment Plant	0.027 mg/l	0.01

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic

10 mg/kg/day

Worker - inhalative, long-term - systemic

300 mg/m³

Calculation method	Used CHESAR model		
Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.194 mg/m ³	0.0001
PROC1 - Use in closed process, no likelihood of exposure	Worker - dermal, long-term - systemic	0.034 mg/kg/d	0.003
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - dermal, long-term - systemic	0.274 mg/kg/d	0.027
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	193.6 mg/m ³	0.323
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.69 mg/kg/d	0.069
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	387.2 mg/m ³	0.645
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, long-term - systemic	1.372 mg/kg/d	0.137
PROC7 - Industrial spraying	Worker - inhalative, long-term - systemic	242 mg/m ³	0.403
PROC7 - Industrial spraying	Worker - dermal, long-term - systemic	4.286 mg/kg/d	0.429
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	2.742 mg/kg/d	0.274
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	484 mg/m ³	0.807
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	1.371 mg/kg/d	0.137
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161

PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	5.486 mg/kg/d	0.549
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161
PROC13 - Treatment of articles by dipping and pouring	Worker - dermal, long-term - systemic	2.742 mg/kg/d	0.274

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. 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]

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REACH registration number 01-2119488971-22-XXXX
CAS No 110-19-0
EC No (EU Index No) 203-745-1
Supplier Univar Solutions UK Ltd
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 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 Cleaning Agents (Professional)
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 8.4b.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

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 8.4b.v1

Amounts used

Type	Daily amount for wide dispersive uses
Value	0.3
Units	kg/d

Type	Annual amount per site
Value	2000
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

Other operational conditions of use affecting environmental exposure

Release fraction to air from process (initial release prior to RMM)	2%
Release fraction to wastewater from process (initial release prior to RMM)	0.0001%
Release fraction to soil from process (initial release prior to RMM)	0%

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000
Removal efficiency fraction (offsite; STP)	89.4%

Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	10
Local marine water dilution factor	100

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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Control of worker exposure

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Covers skin contact area up to	240 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Covers skin contact area up to	480 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374 In case of inadequate ventilation wear respiratory protection Wear a respirator providing a minimum efficiency of 90%
Covers skin contact area up to	480 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	5%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Covers skin contact area up to	480 cm ²
Indoor/Outdoor use	Covers indoor and outdoor use

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374
Covers skin contact area up to	480 cm ²
Indoor/Outdoor use	Outdoor use

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
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374 In case of inadequate ventilation wear respiratory protection Wear a respirator providing a minimum efficiency of 90%
Covers skin contact area up to	960 cm ²
Indoor/Outdoor use	Covers indoor and outdoor use

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 PROC10 - Roller application or brushing
Covers concentrations up to	5%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374
Covers skin contact area up to	960 cm ²
Indoor/Outdoor use	Covers indoor and outdoor use

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374

health evaluation	
Covers skin contact area up to	960 cm2
Indoor/Outdoor use	Outdoor use

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374 In case of inadequate ventilation wear respiratory protection Wear a respirator providing a minimum efficiency of 90%
Covers skin contact area up to	960 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

Process category(ies)	PROC11 - Non industrial spraying
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Exposure duration	Avoid carrying out activities involving exposure for more than 4 hours
Technical conditions and measures to control dispersion from source towards the worker	Provide a basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Wear a respirator providing a minimum efficiency of 90%
Covers skin contact area up to	1500 cm2
Indoor/Outdoor use	Indoor use

Process category(ies)	PROC11 - Non industrial spraying
Covers concentrations up to	5%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Exposure duration	Avoid carrying out activities involving exposure for more than 4 hours
Technical conditions and measures to control dispersion from source towards the worker	Provide a basic standard of general ventilation (1 to 3 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Wear a respirator providing a minimum efficiency of 95%
Covers skin contact area up to	1500 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

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 8.4b.v1

Predicted No Effect Concentration (PNEC)

Freshwater	0.17 mg/l
Freshwater sediment	0.877 mg/kg
Marine water	0.017 mg/l
Marine sediment	0.0877 mg/kg
Soil	0.0755 mg/kg
Impact on Sewage Treatment	200 mg/l

Calculation method	Used CHESAR model	
Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.0002 mg/l	0.01
Freshwater sediment	0.005 mg/kg	0.01
Marine water	0.00002 mg/l	0.01
Marine sediment	0.0004 mg/kg	0.01
Soil	0.00002 mg /kg	0.01
STP: Sewage Treatment Plant	1.432E-8 mg/l	0.01

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic

10 mg/kg/day

Worker - inhalative, long-term - systemic

300 mg/m³

Calculation method	Used CHESAR model		
Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.194 mg/m ³	0.0003
PROC1 - Use in closed process, no likelihood of exposure	Worker - dermal, long-term - systemic	0.034 mg/kg/d	0.003
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	387.2 mg/m ³	0.645
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.137
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	484 mg/m ³	0.807
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.69 mg/kg/d	0.069
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	193.6 mg/m ³	0.323
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	193.6 mg/m ³	0.323
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	406.6 mg/m ³	0.678
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, long-term - systemic	1.372 mg/kg/d	0.137
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, long-term - systemic	1.372 mg/kg/d	0.137
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, long-term - systemic	0.823 mg/kg/d	0.082
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	387.2 mg/m ³	0.645
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	387.2 mg/m ³	0.645
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non	Worker - dermal, long-term - systemic	2.742 mg/kg/d	0.274

dedicated facilities			
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	0.548 mg/kg/d	0.055
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	193.6 mg/m ³	0.323
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	406.6 mg/m ³	0.678
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	2.742 mg/kg/d	0.274
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	0.548 mg/kg/d	0.055
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	1.645 mg/kg/d	0.165
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	232.2 mg/m ³	0.387
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	387.2 mg/m ³	0.645
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	3.292 mg/kg/d	0.329
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	1.097 mg/kg/d	0.110
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	116.2 mg/m ³	0.194
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	290.4 mg/m ³	0.484
PROC11 - Non industrial spraying	Worker - dermal, long-term - systemic	3.857 mg/kg/d	0.386
PROC11 - Non industrial spraying	Worker - dermal, long-term - systemic	3.857 mg/kg/d	0.386
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	387.2 mg/m ³	0.645
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	387.2 mg/m ³	0.645
PROC13 - Treatment of articles by dipping and pouring	Worker - dermal, long-term - systemic	2.742 mg/kg/d	0.274
PROC13 - Treatment of articles by dipping and pouring	Worker - dermal, long-term - systemic	2.742 mg/kg/d	0.274

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. 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 ISOBUTYL ACETATE
REACH registration number 01-2119488971-22-XXXX
CAS No 110-19-0
EC No (EU Index No) 203-745-1
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 Laboratory activities
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 8.4b.v1
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) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Specific Environmental Release Category - ESVOC SpERC 8.4b.v1

Amounts used

Type	Daily amount per site
Value	50
Units	kg/d

Type	Annual amount per site
Value	1
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Release fraction to air from process (initial release prior to RMM)	100%
Release fraction to wastewater from process (initial release prior to RMM)	10%
Release fraction to soil from process (initial release prior to RMM)	5%

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000
Removal efficiency fraction (offsite; STP)	89.4%
Sludge treatment	Do not apply industrial sludge to natural soils

Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	10
Local marine water dilution factor	100

Control measures to prevent releases

Water	Typical onsite wastewater treatment technology provides removal efficiency of 90% Acclimated biological treatment
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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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Control of worker exposure

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374 In case of inadequate ventilation wear respiratory protection Wear a respirator providing a minimum efficiency of 90%
Covers skin contact area up to	960 cm2

Process category(ies)	PROC15 - Use as laboratory reagent
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Covers skin contact area up to	240 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

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 8.4b.v1

Predicted No Effect Concentration (PNEC)

Freshwater	0.17 mg/l
Freshwater sediment	0.877 mg/kg
Marine water	0.017 mg/l
Marine sediment	0.0877 mg/kg
Soil	0.0755 mg/kg
Impact on Sewage Treatment	200 mg/l

Calculation method Used CHESAR model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.027 mg/l	0.157
Freshwater sediment	0.536 mg/kg	0.611

Marine water	0.003 mg/l	0.157
Marine sediment	0.054 mg/kg	0.61
Soil	0.0001 mg /kg	0.01
STP: Sewage Treatment Plant	0.265 mg/l	0.01

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic

10 mg/kg/day

Worker - inhalative, long-term - systemic

300 mg/m³

Calculation method	Used CHESAR model		
Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	96.8 mg/m ³	0.161
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	5.486 mg/kg/d	0.549
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	193.6 mg/m ³	0.323
PROC15 - Use as laboratory reagent	Worker - dermal, long-term - systemic	0.34 mg/kg/d	0.034

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. 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 ISOBUTYL ACETATE
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 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 Laboratory activities
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	Daily amount for wide dispersive uses
Value	0.0001
Units	kg/d

Type	Annual amount per site
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	0.0005

Other operational conditions of use affecting environmental exposure

Release fraction to air from process (initial release prior to RMM)	50%
Release fraction to wastewater from process (initial release prior to RMM)	50%

Release fraction to soil from process (initial release prior to RMM)	0%
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Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000
Removal efficiency fraction (offsite; STP)	89.4%
Sludge treatment	Do not apply industrial sludge to natural soils

Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	10
Local marine water dilution factor	100

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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Control of worker exposure

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour) Provide extract ventilation to points where emissions occur Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374 In case of inadequate ventilation wear respiratory protection Wear a respirator providing a minimum efficiency of 90%
Covers skin contact area up to	960 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

Process category(ies)	PROC15 - Use as laboratory reagent
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
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 basic standard of general ventilation (1 to 3 air changes per hour)
Covers skin contact area up to	240 cm2
Indoor/Outdoor use	Covers indoor and outdoor use

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)**

Freshwater	0.17 mg/l
Freshwater sediment	0.877 mg/kg
Marine water	0.017 mg/l
Marine sediment	0.0877 mg/kg
Soil	0.0755 mg/kg
Impact on Sewage Treatment	200 mg/l

Calculation method	Used CHESAR model	
Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.0002 mg/l	0.01
Freshwater sediment	0.005 mg/kg	0.01
Marine water	0.00002 mg/l	0.01
Marine sediment	0.0004 mg/kg	0.01
Soil	0.00002 mg /kg	0.01
STP: Sewage Treatment Plant	3.632E-6 mg/l	0.01

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic 10 mg/kg/day
Worker - inhalative, long-term - systemic 300 mg/m³

Calculation method	Used CHESAR model		
Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	232.3 mg/m ³	0.387
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	3.292 mg/kg/d	0.329
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	193.6 mg/m ³	0.323
PROC15 - Use as laboratory reagent	Worker - dermal, long-term - systemic	0.34 mg/kg/d	0.034

Section 4 - Guidance to check compliance with the exposure scenario

Further details on scaling and control technologies are provided in SpERC factsheet. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.