

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

Supersedes date 25-May-2021

Revision date 04-Nov-2025

Revision Number 7.01

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

1.1. Product identifier

Product Code(s)	395
Safety data sheet number	395
Product Name	DICHLOROMETHANE
Index No	602-004-00-3
EC Number	200-838-9
CAS No	75-09-2
Synonyms	METHYLENE CHLORIDE, DCM, METHYLENE CHLORIDE E100, METHOKLONE GR, METHYLENE CHLORIDE E1500, METHYLENE CHLORIDE E2000, METHYLENE CHLORIDE FR***
Pure substance/mixture	Substance
Contains DICHLOROMETHANE	
Molecular weight	84.9 g/mol

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

Recommended use	Solvent Chemical intermediate Heat transfer medium Adhesives Laboratory chemicals Colouring agent Foaming agent Blowing agent Anti-set-off agent Metal surface treatment Processing aid. For further information, see attached Exposure Scenario
Uses advised against	Paint strippers (Paint or Paint-Related) Cosmetics

1.3. Details of the supplier of the safety data sheet

Supplier

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

For further information, please contact

E-mail address SDS.EMEA@univarsolutions.com

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

1.4. Emergency telephone number

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

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

Skin corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 2 - (H319)
Carcinogenicity	Category 2 - (H351)
Specific target organ toxicity — single exposure	Category 3 - (H336)
Category 3	

2.2. Label elements

Contains DICHLOROMETHANE



Signal word
Warning

Hazard statements

H315 - Causes skin irritation
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness
H351 - Suspected of causing cancer

Precautionary statements

P201 - Obtain special instructions before use
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P501 - Dispose of contents/ container to an approved waste disposal plant

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients**3.1 Substances**

Chemical name	Weight-%	EC No (EU Index No)	UK REACH registration number	Classification according to GB CLP (SI)	Specific concentration	M-Factor	M-Factor (long-term)
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				2020/1567 as amended)	limit (SCL)		
DICHLOROMETHANE 75-09-2	90 - 100%	200-838-9	-	Eye Irrit. 2 (H319) Skin Irrit. 2 (H315) Carc. 2 (H351) STOT SE 3 (H336)	-	-	-

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	IF exposed or concerned: Get medical advice/attention. Show this safety data sheet to the doctor in attendance.
Inhalation	Remove to fresh air. IF exposed or concerned: Get medical advice/attention. Get medical attention immediately if symptoms occur. General first aid, rest, warmth and fresh air. Administer oxygen if breathing is difficult. If breathing is irregular or stopped, administer artificial respiration.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.
Skin contact	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if symptoms occur. Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Drink 1 or 2 glasses of water. Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a doctor.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

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

Symptoms	May cause redness and tearing of the eyes. Burning sensation. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing.
Inhalation	May cause drowsiness or dizziness.
Eyes	Causes serious eye irritation.
Dermal	Causes skin irritation.

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	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
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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.
<u>5.2. Special hazards arising from the substance or mixture</u>	
Specific hazards arising from the chemical	Dusts or fumes may form explosive mixtures in air. Thermal decomposition can lead to release of irritating and toxic gases and vapours.
Hazardous combustion products	Phosgene. Hydrogen chloride.
<u>5.3. Advice for firefighters</u>	
Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Cool containers with flooding quantities of water until well after fire is out.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing. Avoid breathing vapours or mists.
Other information	Refer to protective measures listed in Sections 7 and 8.
For emergency responders	Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions	Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained. Prevent further leakage or spillage if safe to do so.
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6.3. Methods and material for containment and cleaning up

Methods for containment	Keep out of drains, sewers, ditches and waterways.
Methods for cleaning up	Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

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

7.1. Precautions for safe handling

Advice on safe handling	Wash thoroughly after handling. Wear protective gloves/protective clothing and eye/face protection. Use personal protection recommended in Section 8. Avoid breathing vapours or mists. Most vapours are heavier than air. Vapours may spread along ground and collect in low or confined areas (sewers, basements, tanks).
General hygiene considerations	Wash hands and face before breaks and immediately after handling the product. Take off all contaminated clothing and wash it before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep container tightly closed in a dry and well-ventilated place. Protect from direct sunlight. Store at ambient conditions. See section 10 for more information.
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Packaging materials Unsuitable container/equipment material. Aluminium.

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
DICHLOROMETHANE 75-09-2	TWA: 353 mg/m ³ TWA: 100 ppm STEL: 200 ppm STEL: 706 mg/m ³ Sk*

Biological occupational exposure limits

Chemical name	United Kingdom
DICHLOROMETHANE 75-09-2	30 ppm - end-tidal breath (Carbon monoxide) - post shift

Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
DICHLOROMETHANE 75-09-2		12 mg/kg/day [4] [6]	176 mg/m ³ [4] [6]

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

Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
DICHLOROMETHANE 75-09-2	0.06 mg/kg/day [5] [7]	5.82 mg/kg/day [4] [6]	44 mg/m ³ [4] [6]

[4] Systemic health effects.
[5] Local 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
DICHLOROMETHANE 75-09-2	0.31 mg/l	0.27 mg/l	0.031 mg/l	0.027 mg/L	

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
DICHLOROMETHANE 75-09-2	2.57 mg/kg	0.26 mg/kg	26 mg/L	0.33 mg/kg	26 mg/l

8.2. Exposure controls

Engineering controls Ensure adequate ventilation. Local and General Ventilation. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye/face protection Tight sealing safety goggles. Wear safety glasses with side shields (or goggles).

Hand protection Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. Gloves must conform to standard EN 374.

Gloves			
Duration of contact	PPE - Glove material	Glove thickness	Break through time
Short term	Fluorine	0.4 mm	Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves
Short term	PVC		5 minutes
	PVA		Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves

Skin and body protection Wear suitable protective clothing. Long sleeved clothing.

Respiratory protection In case of inadequate ventilation wear respiratory protection.

General hygiene considerations Wash hands and face before breaks and immediately after handling the product. Take off all contaminated clothing and wash it before reuse.

Environmental exposure controls Avoid release to the environment.

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

Physical state Liquid
Appearance Liquid
Colour Clear liquid
Odour Characteristic. Penetrating.
Odour threshold ~200 ppm

Property	Values
Melting point / freezing point	-95 °C
Initial boiling point and boiling range	40 °C
Flammability	
Flammability Limit in Air	
Upper flammability or explosive limits	21.5%
Lower flammability or explosive limits	16.1%

Remarks • Method

No information available.
No information available.

Flash point		No information available.
Autoignition temperature	605 °C	
Decomposition temperature	> 120 °C	
pH		No information available.
pH (as aqueous solution)		No information available.
Kinematic viscosity		No information available.
Dynamic viscosity	0.420 mPa s @ 25°C	@ 25.0 °C.
Water solubility	Slightly soluble in water	
Solubility(ies)	Organic solvents Miscible	No information available.
Partition coefficient	log Pow: 1.25	@ 20.0 °C.
Vapour pressure	58400 Pa	@ 25.0 °C.
Relative density	1.320	25.0 °C.
Bulk density		No information available
Liquid Density	No information available	No information available
Relative vapour density	2.93	
Particle characteristics		No information available.
Particle Size	No information available	
Particle Size Distribution	No information available	
Explosive properties	Not considered to be explosive.	
Oxidising properties	Does not meet the criteria for classification as oxidising	

9.2. Other information

Molecular weight 84.9 g/mol 1.8

SECTION 10: Stability and reactivity**10.1. Reactivity**

Reactivity Stable under normal conditions. Decomposes on exposure to light.

10.2. Chemical stability

Stability Stable under recommended storage conditions. Decomposes on exposure to light.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Amines. Forms a detonable mixture with Nitric acid.

10.4. Conditions to avoid

Conditions to avoid Heat. Protect from direct sunlight. Protect from moisture.

10.5. Incompatible materials

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

10.6. Hazardous decomposition products

Hazardous decomposition products Hydrogen chloride. Phosgene.

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 Causes serious eye irritation.

Skin contact Causes skin irritation.

Ingestion Gastrointestinal discomfort.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. May cause redness and tearing of the eyes. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Acute toxicity

Numerical measures of toxicity

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
DICHLOROMETHANE	>2000 mg/kg (Rat)	>2000 mg/kg (Rat)	= 56230 mg/m ³ (Mouse) 8h

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

Skin corrosion/irritation Causes skin irritation.

Method	Species	Exposure route	Effective dose	Exposure time	Results
	Rabbit	Dermal			Irritant

Serious eye damage/eye irritation Causes serious eye irritation.

Method	Species	Exposure route	Effective dose	Exposure time	Results
	Rabbit	eye			Irritant

Respiratory or skin sensitisation Not classified.

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

Carcinogenicity Suspected of causing cancer.

Method	Species	Results
	Mouse	Carcinogenic

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	United Kingdom
DICHLOROMETHANE	Carc. 2

Reproductive toxicity Not classified.

DICHLOROMETHANE (75-09-2)

Method	Species	Results
	Rat	Based on available data the classification criteria are not met.
	Mouse	Based on available data the classification criteria are not met.

STOT - single exposure May cause drowsiness or dizziness.

STOT - repeated exposure Not classified.

Aspiration hazard Not classified.

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity Not considered to be harmful to aquatic life.

Method	Species	Endpoint type	Effective dose	Exposure time	Results
	Invertebrate	LC50	27 mg/l Fresh water , 109 mg/l Marine water	48 hours	
	Fish	LC50	193 mg/l Fresh water , 97 mg/l Marine water	96 hours	
	Algae	NOEC	550 mg/L		
Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea	
DICHLOROMETHANE	EC50: >500mg/L (96h, Pseudokirchneriella subcapitata) EC50: >500mg/L (72h, Pseudokirchneriella subcapitata)	LC50: 140.8 - 277.8mg/L (96h, Pimephales promelas) LC50: 262 - 855mg/L (96h, Pimephales promelas) LC50: =193mg/L (96h, Lepomis macrochirus)	-	EC50: 1532 - 1847mg/L (48h, Daphnia magna) EC50: =190mg/L (48h, Daphnia magna)	

12.2. Persistence and degradability

Persistence and degradability Expected to biodegrade very slowly.

12.3. Bioaccumulative potential

Bioaccumulation Not likely to bioaccumulate.

Bioconcentration factor (BCF) 0.91-40 l/kg

Component Information

Chemical name	Partition coefficient
DICHLOROMETHANE	1.25***

12.4. Mobility in soil

Mobility in soil partially soluble.

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
DICHLOROMETHANE	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	Do not reuse empty containers.

SECTION 14: Transport information**IATA**

14.1 UN number or ID number	UN1593
14.2 UN proper shipping name	DICHLOROMETHANE
14.3 Transport hazard class(es)	6.1
14.4 Packing group	III
14.5 Environmental hazards	No
14.6 Special precautions for user	
Special Provisions	None
ERG Code	6L

IMDG

14.1 UN number or ID number	UN1593
14.2 UN proper shipping name	DICHLOROMETHANE
14.3 Transport hazard class(es)	6.1
14.4 Packing group	III
14.5 Environmental hazards	No
14.6 Special precautions for user	
Special Provisions	None
EmS-No	F-A, S-A
14.7 Maritime transport in bulk according to IMO instruments	No information available

RID

14.1 UN number or ID number	UN1593
14.2 UN proper shipping name	DICHLOROMETHANE
14.3 Transport hazard class(es)	6.1
14.4 Packing group	III
14.5 Environmental hazards	No
14.6 Special precautions for user	
Special Provisions	516
Classification code	T1

ADR

14.1 UN number or ID number	UN1593
14.2 UN proper shipping name	DICHLOROMETHANE
14.3 Transport hazard class(es)	6.1
14.4 Packing group	III
14.5 Environmental hazards	No
14.6 Special precautions for user	
Special Provisions	516
Classification code	T1
Tunnel restriction code	(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).
 This product does not contain substances subject to authorisation (UK REACH - Annex XIV).

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
DICHLOROMETHANE - 75-09-2	Use restricted. See item 59.	-

Persistent Organic Pollutants

Not applicable

Export Notification requirements

Not applicable

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)

Chemical name	The Water Environment Regulations 2017 (as amended)
DICHLOROMETHANE - 75-09-2	Priority substance

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

Not applicable

International Inventories

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

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

15.2. Chemical safety assessment**Chemical Safety Report**

A Chemical Safety Assessment has been carried out for this substance

SECTION 16: Other information**Key or legend to abbreviations and acronyms used in the safety data sheet****Full text of H-Statements referred to under section 3**

H315 - Causes skin irritation

H319 - Causes serious eye irritation
 H336 - May cause drowsiness or dizziness
 H351 - Suspected of causing cancer

Legend

SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: Exposure controls/personal protection

TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit)
 Ceiling Maximum limit value * Skin designation
 + Sensitisers
 Revision Note ***Indicates updated data since last publication

Classification procedure

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

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

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
 European Chemicals Agency (ECHA) (ECHA_API)
 Environmental Protection Agency
 Acute Exposure Guideline Level(s) (AEGL(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 National Institute of Technology and Evaluation (NITE)
 Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 U.S. National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)
 Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
 Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
 Organisation for Economic Co-operation and Development Screening Information Data Set
 World Health Organization

Prepared By Jitendra Panchal

Supersedes date 25-May-2021

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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 Dichloromethane
Pure substance/mixture Substance
REACH registration number 01-2119480404-41-XXXX
CAS No 75-09-2
EC No (EU Index No) 200-838-9
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

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

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Manufacture of substance
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC1 - Manufacture of substances
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
 PROC15 - Use as laboratory reagent

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

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

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

Amounts used

Type	Fraction of EU tonnage used in region
Value	0.25

Type	Regional use tonnage
Value	25700
Units	t(ons)/year

Type	Fraction of regional tonnage used locally
Value	1

Type	Annual site tonnage
Value	25700
Units	t(ons)/year

Product characteristics

Remarks	Readily biodegradable
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	300
Release fraction to air from process (initial release prior to RMM)	0.0000596
Release fraction to wastewater from process (initial release prior to RMM)	0.0000369
Release fraction to soil from process (initial release prior to RMM)	0
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Operational conditions

Other	Closed systems Water-based process or Dry processes
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Conditions and measures related to municipal sewage treatment plant

Assumed on-site sewage treatment plant flow	63072 m3/d
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Further information

Operational conditions	Indoor use
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Environmental factors not influenced by risk management

Remarks	Receiving surface water flow is 18000 m3/d
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Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide the required removal efficiency of 0%
Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of 93.5%
Soil	not applicable - no direct release to soil

Conditions and measures related to external treatment of waste for disposal

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

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Handle substance within a closed system Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented

Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Handle substance within a closed system Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Handle substance within a predominantly closed system provided with extract ventilation Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	Batch process
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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 extract ventilation to points where emissions occur Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently
Process category(ies)	PROC15 - Use as laboratory reagent
Title	Laboratory activities
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 10 kPa at STP
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to	Ensure that direct skin contact is avoided

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

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Material transfers Bulk transfers
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Drain or remove substance from equipment prior to break-in or maintenance Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Material transfers Bulk transfers
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Fill containers/cans at dedicated fill points supplied with local extract ventilation Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	Material transfers Drum/batch transfers
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Fill containers/cans at dedicated fill points supplied with local extract ventilation Ensure that direct skin contact is avoided
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

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

Section 3 - Exposure estimation

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

Predicted No Effect Concentration (PNEC)

Freshwater	0.31 mg/l
Freshwater sediment	2.57 mg/kg
Marine water	0.031 mg/l
Marine sediment	0.26 mg/kg
Soil	0.33 mg/kg
Impact on Sewage Treatment	25.9 mg/l
Intermittent release	0.27 mg/l

Calculation method

Used EUSES model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.00517 mg/l	0.00957
Freshwater sediment	0.000416 mg/kg w.w.	0.00214
Marine water	0.0093 mg/l	0.00957
Marine sediment	0.000749 mg/kg w.w.	0.00214
Soil	0.000126 mg/kg w.w.	0.000245
STP: Sewage Treatment Plant	0.000883 mg/l	0.0000341

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12 mg/kg bw/d
Worker - inhalative, long-term - systemic	176 mg/m ³
Consumer - dermal, long-term - systemic	5.82 mg/kg bw/d
Consumer - inhalative, long-term - systemic	44 mg/m ³

Calculation method

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

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	0.01 ppm	0.0001
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - dermal, long-term - systemic	0.07 mg/kg/d	0.00001
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - combined, long-term - systemic		0.0001
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	50 ppm	0.50
PROC1 - Use in closed process, no likelihood of exposure	Worker - dermal, long-term - systemic	0.17 mg/kg/d	0.00006
PROC1 - Use in closed process, no likelihood of exposure	Worker - combined, long-term - systemic		0.50
PROC3 - Use in closed batch process	Worker - inhalative, long-term	10.00 ppm	0.10

(synthesis or formulation)	- systemic		
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.07 mg/kg/d	0.00001
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - combined, long-term - systemic		0.10
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	10.00 ppm	0.10
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.0003
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - combined, long-term - systemic		0.10
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	50.00 ppm	0.50
PROC15 - Use as laboratory reagent	Worker - dermal, long-term - systemic	0.07 mg/kg/d	0.00001
PROC15 - Use as laboratory reagent	Worker - combined, long-term - systemic		0.50
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	50.00 ppm	0.50
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	2.74 mg/kg/d	0.0006
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - combined, long-term - systemic		0.50
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	4.50 ppm	0.05
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.0003
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - combined, long-term - systemic		0.05
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	20.00 ppm	0.2
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.0003
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - combined, long-term - systemic		0.20

Section 4 - Guidance to check compliance with the exposure scenario

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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

Chemical name Dichloromethane
Pure substance/mixture Substance
REACH registration number 01-2119480404-41-XXXX
CAS No 75-09-2
EC No (EU Index No) 200-838-9
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

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

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

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

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

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

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

Amounts used

Type	Regional use tonnage
Value	2570
Units	t(ons)/year

Type	Fraction of regional tonnage used locally
Value	1

Type	Annual site tonnage
Value	2570
Units	t(ons)/year

Product characteristics

Remarks	Readily biodegradable
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
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Emission days	300
Release fraction to air from process (initial release prior to RMM)	0.0005
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
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Operational conditions

Other	Closed systems Water-based process or Dry processes
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Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	93.5%

Further information

Operational conditions	Indoor use
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Remarks	Receiving surface water flow is 18000 m3/d

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide the required removal efficiency of 0%
Soil	not applicable - no direct release to soil

Conditions and measures related to external treatment of waste for disposal

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

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Handle substance within a closed system Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
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Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Handle substance within a closed system Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Handle substance within a predominantly closed system provided with extract ventilation Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	Batch process
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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 extract ventilation to points where emissions occur Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC15 - Use as laboratory reagent
Title	Laboratory activities
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Ensure that direct skin contact is avoided
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

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

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Material transfers Bulk transfers
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Drain or remove substance from equipment prior to break-in or maintenance Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Material transfers Bulk transfers
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Fill containers/cans at dedicated fill points supplied with local extract ventilation Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

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

Predicted No Effect Concentration (PNEC)

Freshwater	0.31 mg/l
Freshwater sediment	2.57 mg/kg
Marine water	0.031 mg/l
Marine sediment	0.26 mg/kg
Soil	0.33 mg/kg
Impact on Sewage Treatment	25.9 mg/l
Intermittent release	0.27 mg/l

Calculation method	Used EUSES model	
Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.283 mg/l	0.524
Freshwater sediment	0.509 mg/kg w.w.	0.524
Marine water	0.0282 mg/l	0.145
Marine sediment	0.0507 mg/kg w.w.	0.145
Soil	0.308 mg/kg w.w.	0.599
STP: Sewage Treatment Plant	2.78 mg/l	0.107

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12 mg/kg bw/d
Worker - inhalative, long-term - systemic	176 mg/m ³
Consumer - dermal, long-term - systemic	5.82 mg/kg bw/d
Consumer - inhalative, long-term - systemic	44 mg/m ³

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

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	0.01 ppm	0.0001
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - dermal, long-term - systemic	0.07 mg/kg/d	0.00001
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - combined, long-term - systemic		0.0001
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	50.00 ppm	0.50
PROC1 - Use in closed process, no likelihood of exposure	Worker - dermal, long-term - systemic	0.27 mg/kg/d	0.00006
PROC1 - Use in closed process, no likelihood of exposure	Worker - combined, long-term - systemic		0.50
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	10.00 ppm	0.10
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.07 mg/kg/d	0.00001
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - combined, long-term - systemic		0.10
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	10.00 ppm	0.10
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.0003
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - combined, long-term - systemic		0.10
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	50.00 ppm	0.50
PROC15 - Use as laboratory reagent	Worker - dermal, long-term - systemic	0.07 mg/kg/d	0.00001
PROC15 - Use as laboratory reagent	Worker - combined, long-term - systemic		0.50
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	50.00 ppm	0.50

PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	2.74 mg/kg/d	0.0006
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - combined, long-term - systemic		0.50
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	4.50 ppm	0.05
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.0003
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - combined, long-term - systemic		0.05

Section 4 - Guidance to check compliance with the exposure scenario

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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

Chemical name Dichloromethane
Pure substance/mixture Substance
REACH registration number 01-2119480404-41-XXXX
CAS No 75-09-2
EC No (EU Index No) 200-838-9
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)
Process category(ies) 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)
 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)

Amounts used

Type	Regional use tonnage
Value	2810
Units	t(ons)/year

Type	Fraction of regional tonnage used locally
Value	0.42

Type	Annual site tonnage
Value	1180
Units	t(ons)/year

Product characteristics

Remarks	Readily biodegradable
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
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Emission days	300
Release fraction to air from process (initial release prior to RMM)	0.025
Release fraction to wastewater from process (initial release prior to RMM)	0.02
Release fraction to soil from process (initial release prior to RMM)	0
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Operational conditions

Other	Closed systems Water-based process or Dry processes
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Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	93.5%

Further information

Operational conditions	Indoor use
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Remarks	Receiving surface water flow is 18000 m3/d

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide the required removal efficiency of 0%
Soil	not applicable - no direct release to soil

Conditions and measures related to external treatment of waste for disposal

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

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Handle substance within a predominantly closed system provided with extract ventilation Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	Batch process
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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 extract ventilation to points where emissions occur Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Title	Mixing operations (open systems)
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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 extract ventilation to points where emissions occur Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC15 - Use as laboratory reagent
Title	Laboratory activities
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Material transfers Bulk transfers Manual
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 10 kPa at STP
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to	Provide extract ventilation to points where emissions occur

control dispersion from source towards the worker	Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Material transfers Bulk transfers
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Fill containers/cans at dedicated fill points supplied with local extract ventilation Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	Drum and small package filling
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Fill containers/cans at dedicated fill points supplied with local extract ventilation Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC2 - Formulation of preparations (mixtures)

Predicted No Effect Concentration (PNEC)

Freshwater	0.31 mg/l
Freshwater sediment	2.57 mg/kg
Marine water	0.031 mg/l

Marine sediment	0.26 mg/kg
Soil	0.33 mg/kg
Impact on Sewage Treatment	25.9 mg/l
Intermittent release	0.27 mg/l

Calculation method Used EUSES model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.259 mg/l	0.480
Freshwater sediment	0.467 mg/kg w.w.	0.480
Marine water	0.029 mg/l	0.133
Marine sediment	0.047 mg/kg w.w.	0.133
Soil	0.283 mg/kg w.w.	0.550
STP: Sewage Treatment Plant	2.54 mg/l	0.098

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12 mg/kg bw/d
Worker - inhalative, long-term - systemic	176 mg/m ³
Consumer - dermal, long-term - systemic	5.82 mg/kg bw/d
Consumer - inhalative, long-term - systemic	44 mg/m ³

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

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	10.00 ppm	0.10
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.07 mg/kg/d	0.00001
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - combined, long-term - systemic		0.10
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	10.00 ppm	0.10
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.0003
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - combined, long-term - systemic		0.10
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	25.00 ppm	0.25
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - dermal, long-term - systemic	2.74 mg/kg/d	0.0006
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - combined, long-term - systemic		0.25
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	50.00 ppm	0.50
PROC15 - Use as laboratory reagent	Worker - dermal, long-term - systemic	0.07 mg/kg/d	0.00001
PROC15 - Use as laboratory reagent	Worker - combined, long-term - systemic		0.50
PROC8a - Transfer of substance or	Worker - inhalative, long-term	25.00 ppm	0.25

preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	- systemic		
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	2.74 mg/kg/d	0.0006
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - combined, long-term - systemic		0.25
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	4.50 ppm	0.05
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.0003
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - combined, long-term - systemic		0.05
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	20.00 ppm	0.20
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.0003
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - combined, long-term - systemic		0.20

Section 4 - Guidance to check compliance with the exposure scenario

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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

Chemical name Dichloromethane
Pure substance/mixture Substance
REACH registration number 01-2119480404-41-XXXX
CAS No 75-09-2
EC No (EU Index No) 200-838-9
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 Process solvent.
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
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
 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 SU5
 - Manufacture of textiles, leather, fur 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

Amounts used

Type	Regional use tonnage
Value	13400
Units	t(ons)/year

Type	Fraction of regional tonnage used locally
Value	1

Type	Annual site tonnage
Value	13400
Units	t(ons)/year

Product characteristics

Remarks	Readily biodegradable
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	100
Release fraction to air from process (initial release prior to RMM)	0.669

Release fraction to wastewater from process (initial release prior to RMM)	0.095
Release fraction to soil from process (initial release prior to RMM)	0
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Operational conditions

Other	Closed systems Water-based process or Dry processes
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Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	93.5%

Further information

Operational conditions	Indoor use
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Remarks	Receiving surface water flow is 18000 m3/d

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide the required removal efficiency of 0%
Soil	not applicable - no direct release to soil

Conditions and measures related to external treatment of waste for disposal

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

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Handle substance within a closed system Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Title	General exposures (closed systems)
Covers concentrations up to	100%

Physical form of product	Liquid, vapour pressure > 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	Handle substance within a closed system Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Handle substance within a predominantly closed system provided with extract ventilation Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	Batch process
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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 extract ventilation to points where emissions occur Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Title	Laboratory activities Rolling, brushing
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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 extract ventilation to points where emissions occur Ensure that direct skin contact is avoided
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

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

Process category(ies)	PROC15 - Use as laboratory reagent
Title	Laboratory activities
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

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

Predicted No Effect Concentration (PNEC)

Freshwater	0.31 mg/l
Freshwater sediment	2.57 mg/kg
Marine water	0.031 mg/l
Marine sediment	0.26 mg/kg
Soil	0.33 mg/kg
Impact on Sewage Treatment	25.9 mg/l
Intermittent release	0.27 mg/l

Calculation method Used EUSES model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.185 mg/l	0.343
Freshwater sediment	0.334 mg/kg w.w.	0.343
Marine water	0.018 mg/l	0.093
Marine sediment	0.033 mg/kg w.w.	0.093
Soil	0.211 mg/kg w.w.	0.411
STP: Sewage Treatment Plant	1.81 mg/l	0.070

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12 mg/kg bw/d
Worker - inhalative, long-term - systemic	176 mg/m ³
Consumer - dermal, long-term - systemic	5.82 mg/kg bw/d
Consumer - inhalative, long-term - systemic	44 mg/m ³

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

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	0.01 ppm	0.0001
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - dermal, long-term - systemic	0.07 mg/kg/d	0.00001
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - combined, long-term - systemic		0.0001
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	50.00 ppm	0.50
PROC1 - Use in closed process, no likelihood of exposure	Worker - dermal, long-term - systemic	0.27 mg/kg/d	0.00006
PROC1 - Use in closed process, no likelihood of exposure	Worker - combined, long-term - systemic		0.50
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	10.00 ppm	0.10
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.07 mg/kg/d	0.00001
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - combined, long-term - systemic		0.10
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	10.00 ppm	0.10
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.0003
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - combined, long-term - systemic		0.10
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	25.00 ppm	0.25
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	5.49 mg/kg/d	0.001
PROC10 - Roller application or brushing	Worker - combined, long-term - systemic		0.25
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	50.00 ppm	0.50
PROC15 - Use as laboratory reagent	Worker - dermal, long-term - systemic	0.07 mg/kg/d	0.00001
PROC15 - Use as laboratory reagent	Worker - combined, long-term - systemic		0.50

Section 4 - Guidance to check compliance with the exposure scenario

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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

Chemical name Dichloromethane
Pure substance/mixture Substance
REACH registration number 01-2119480404-41-XXXX
CAS No 75-09-2
EC No (EU Index No) 200-838-9
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

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

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Coatings
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Process category(ies) PROC7 - Industrial spraying
 PROC10 - Roller application or brushing
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
 SU11 - Manufacture of rubber products SU18 - Manufacture of furniture

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

Amounts used

Type	Regional use tonnage
Value	2070
Units	t(ons)/year

Type	Fraction of regional tonnage used locally
Value	0.483

Type	Annual site tonnage
Value	2070
Units	t(ons)/year

Product characteristics

Remarks	Readily biodegradable
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	100
Release fraction to air from process (initial release prior to RMM)	0.95
Release fraction to wastewater from process (initial release prior to RMM)	1
Release fraction to soil from process	0

(initial release prior to RMM)	
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Operational conditions

Other	Closed systems Water-based process or Dry processes
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Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	93.5%

Further information

Operational conditions	Indoor use
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Remarks	Receiving surface water flow is 18000 m3/d

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide the required removal efficiency of 0%
Soil	not applicable - no direct release to soil

Conditions and measures related to external treatment of waste for disposal

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

Process category(ies)	PROC7 - Industrial spraying
Title	Spraying paint / Coatings
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure > 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	Carry out in a vented booth provided with laminar airflow Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC7 - Industrial spraying
Title	Spraying Mould release lubricant
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure > 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	Carry out in a vented booth provided with laminar airflow Ensure that direct skin contact is avoided

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

Process category(ies)	PROC10 - Roller application or brushing
Title	Rolling, brushing
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure > 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 extract ventilation to points where emissions occur Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

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

Predicted No Effect Concentration (PNEC)

Freshwater	0.31 mg/l
Freshwater sediment	2.57 mg/kg
Marine water	0.031 mg/l
Marine sediment	0.26 mg/kg
Soil	0.33 mg/kg
Impact on Sewage Treatment	25.9 mg/l
Intermittent release	0.27 mg/l

Calculation method

Used EUSES model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.00496 mg/l	0.00919
Freshwater sediment	0.00893 mg/kg w.w.	0.00919
Marine water	0.0004 mg/l	0.00206
Marine sediment	0.000720 mg/kg w.w.	0.000206
Soil	0.045 mg/kg w.w.	0.087
STP: Sewage Treatment Plant	0.00106 mg/l	0.0000411

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12 mg/kg bw/d
Worker - inhalative, long-term - systemic	176 mg/m ³
Consumer - dermal, long-term - systemic	5.82 mg/kg bw/d
Consumer - inhalative, long-term - systemic	44 mg/m ³

Calculation method	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated		
Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC7 - Industrial spraying	Worker - inhalative, long-term - systemic	25.00 ppm	0.25
PROC7 - Industrial spraying	Worker - dermal, long-term - systemic	8.57 mg/kg/d	0.002
PROC7 - Industrial spraying	Worker - combined, long-term - systemic		0.25
PROC7 - Industrial spraying	Worker - inhalative, long-term - systemic	25.00 ppm	0.25
PROC7 - Industrial spraying	Worker - dermal, long-term - systemic	8.57 mg/kg/d	0.002
PROC7 - Industrial spraying	Worker - combined, long-term - systemic		0.25
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	25.00 ppm	0.25
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	5.49 mg/kg/d	0.001
PROC10 - Roller application or brushing	Worker - combined, long-term - systemic		0.25

Section 4 - Guidance to check compliance with the exposure scenario

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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

Chemical name Dichloromethane
Pure substance/mixture Substance
REACH registration number 01-2119480404-41-XXXX
CAS No 75-09-2
EC No (EU Index No) 200-838-9
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
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Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Cleaning agent
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
 ERC7 - Industrial use of substances in closed systems
Process category(ies) PROC0 - Other Process
 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
 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
 SU5 - Manufacture of textiles, leather, fur
 SU7 - Printing and reproduction of recorded media
 SU12 - Manufacture of plastics products, including compounding and conversion
 SU13 - Manufacture of other non-metallic mineral products
 SU17 - General manufacturing

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
 - ERC7 - Industrial use of substances in closed systems

Amounts used

Type	Regional use tonnage
Value	2810
Units	t(ons)/year

Type	Fraction of regional tonnage used locally
Value	0.11

Type	Annual site tonnage
Value	2810
Units	t(ons)/year

Product characteristics

Remarks	Readily biodegradable
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	20
Release fraction to air from process (initial release prior to RMM)	0.3
Release fraction to wastewater from process (initial release prior to RMM)	0.001
Release fraction to soil from process (initial release prior to RMM)	0.001
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Operational conditions

Other	Closed systems Water-based process or Dry processes
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Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	93.5%

Further information

Operational conditions	Indoor/Outdoor use
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Remarks	Receiving surface water flow is 18000 m3/d

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide the required removal efficiency of 0%
Soil	not applicable - no direct release to soil

Conditions and measures related to external treatment of waste for disposal

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

Process category(ies)	PROC0 - Other Process
Title	Washing and cleaning products Surface cleaning
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Handle substance within a closed system Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
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Title	Washing and cleaning products (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Handle substance within a predominantly closed system provided with extract ventilation Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	Washing and cleaning products Drum/batch transfers
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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 extract ventilation to points where emissions occur Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	Batch process
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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 extract ventilation to points where emissions occur Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC7 - Industrial spraying
Title	Spraying
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Ensure that direct skin contact is avoided
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

health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Title	No Spraying Manual Surface cleaning
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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 extract ventilation to points where emissions occur Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Title	Manual Surface cleaning
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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 extract ventilation to points where emissions occur Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Title	Manual Surface cleaning
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 10 kPa at STP
Exposure duration	Avoid carrying out activities involving exposure for more than 1 hour
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

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

- ERC7 - Industrial use of substances in closed systems

Predicted No Effect Concentration (PNEC)

Freshwater	0.31 mg/l
Freshwater sediment	2.57 mg/kg
Marine water	0.031 mg/l
Marine sediment	0.26 mg/kg
Soil	0.33 mg/kg
Impact on Sewage Treatment	25.9 mg/l
Intermittent release	0.27 mg/l

Calculation method

Used EUSES model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.00652 mg/l	0.012
Freshwater sediment	0.0121 mg/kg w.w.	0.012
Marine water	0.000564 mg/l	0.00291
Marine sediment	0.001 mg/kg w.w.	0.00291
Soil	0.00285 mg/kg w.w.	0.00553
STP: Sewage Treatment Plant	0.017 mg/l	0.000681

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12 mg/kg bw/d
Worker - inhalative, long-term - systemic	176 mg/m ³
Consumer - dermal, long-term - systemic	5.82 mg/kg bw/d
Consumer - inhalative, long-term - systemic	44 mg/m ³

Calculation method

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

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC0 - Other Process	Worker - inhalative, long-term - systemic	50.00 ppm	0.50
PROC0 - Other Process	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.00006
PROC0 - Other Process	Worker - combined, long-term - systemic		0.50
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	10.00 ppm	0.10
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - dermal, long-term - systemic	0.34 mg/kg/d	0.00001
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - combined, long-term - systemic		0.10
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	10.00 ppm	0.10
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.34 mg/kg/d	0.00001
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - combined, long-term - systemic		0.10

PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	10.00 ppm	0.10
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.0003
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - combined, long-term - systemic		0.10
PROC7 - Industrial spraying	Worker - inhalative, long-term - systemic	50.00 ppm	0.50
PROC7 - Industrial spraying	Worker - dermal, long-term - systemic	42.86 mg/kg/d	0.002
PROC7 - Industrial spraying	Worker - combined, long-term - systemic		0.50
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	25.00 ppm	0.25
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	27.43 mg/kg/d	0.001
PROC10 - Roller application or brushing	Worker - combined, long-term - systemic		0.25
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	25.00 ppm	0.25
PROC13 - Treatment of articles by dipping and pouring	Worker - dermal, long-term - systemic	13.71 mg/kg/d	0.0006
PROC13 - Treatment of articles by dipping and pouring	Worker - combined, long-term - systemic		0.25
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	50.00 ppm	0.5
PROC13 - Treatment of articles by dipping and pouring	Worker - dermal, long-term - systemic	13.71 mg/kg/d	0.0006
PROC13 - Treatment of articles by dipping and pouring	Worker - combined, long-term - systemic		0.50

Section 4 - Guidance to check compliance with the exposure scenario

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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

Chemical name Dichloromethane
Pure substance/mixture Substance
REACH registration number 01-2119480404-41-XXXX
CAS No 75-09-2
EC No (EU Index No) 200-838-9
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 Blowing agent
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
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
 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)
 PROC12 - Use of blow agents in manufacture of foam
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

Amounts used

Type	Regional use tonnage
Value	955
Units	t(ons)/year

Type	Fraction of regional tonnage used locally
Value	1

Type	Annual site tonnage
Value	955
Units	t(ons)/year

Product characteristics

Remarks	Readily biodegradable
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	300

Release fraction to air from process (initial release prior to RMM)	1
Release fraction to wastewater from process (initial release prior to RMM)	0.001
Release fraction to soil from process (initial release prior to RMM)	0
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Operational conditions

Other	Closed systems Water-based process or Dry processes
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Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	93.5%

Further information

Operational conditions	Indoor/Outdoor use
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Remarks	Receiving surface water flow is 18000 m3/d

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide the required removal efficiency of 0%
Soil	not applicable - no direct release to soil

Conditions and measures related to external treatment of waste for disposal

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

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	General exposures (closed systems)
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure > 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	Handle substance within a closed system Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Title	General exposures (closed systems)

Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure > 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	Handle substance within a closed system Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure > 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	Handle substance within a closed system Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	Batch process
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure > 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	Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Material transfers Bulk transfers
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure > 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	Ensure that direct skin contact is avoided
Conditions and measures related to personal protection, hygiene and	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training

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

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	Drum and small package filling
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure > 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 extract ventilation to points where emissions occur Limit the substance content in the product to 25 % Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC12 - Use of blow agents in manufacture of foam
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure > 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	Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

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

Predicted No Effect Concentration (PNEC)

Freshwater	0.31 mg/l
Freshwater sediment	2.57 mg/kg
Marine water	0.031 mg/l
Marine sediment	0.26 mg/kg
Soil	0.33 mg/kg
Impact on Sewage Treatment	25.9 mg/l
Intermittent release	0.27 mg/l

Calculation method Used EUSES model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
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Freshwater	0.015 mg/l	0.028
Freshwater sediment	0.027 mg/kg w.w.	0.028
Marine water	0.00142 mg/l	0.00732
Marine sediment	0.00256 mg/kg w.w.	0.00732
Soil	0.048 mg/kg w.w.	0.093
STP: Sewage Treatment Plant	0.103 mg/l	0.00398

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12 mg/kg bw/d
Worker - inhalative, long-term - systemic	176 mg/m ³
Consumer - dermal, long-term - systemic	5.82 mg/kg bw/d
Consumer - inhalative, long-term - systemic	44 mg/m ³

Calculation method

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

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	0.01 ppm	0.0001
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - dermal, long-term - systemic	0.04 mg/kg/d	0.00001
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - combined, long-term - systemic		0.0001
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	30.00 ppm	0.30
PROC1 - Use in closed process, no likelihood of exposure	Worker - dermal, long-term - systemic	0.16 mg/kg/d	0.00003
PROC1 - Use in closed process, no likelihood of exposure	Worker - combined, long-term - systemic		0.30
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	60.00 ppm	0.60
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.04 mg/kg/d	0.00001
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - combined, long-term - systemic		0.60
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	60.00 ppm	0.60
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, long-term - systemic	0.82 mg/kg/d	0.0002
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - combined, long-term - systemic		0.60
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	90.00 ppm	0.90
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	0.82 mg/kg/d	0.0002
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - combined, long-term - systemic		0.90

PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	12.00 ppm	0.12
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - dermal, long-term - systemic	0.82 mg/kg/d	0.2
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - combined, long-term - systemic		0.12
PROC12 - Use of blow agents in manufacture of foam	Worker - inhalative, long-term - systemic	0.01 ppm	0.0001
PROC12 - Use of blow agents in manufacture of foam	Worker - dermal, long-term - systemic	0.04 mg/kg/d	0.00001
PROC12 - Use of blow agents in manufacture of foam	Worker - combined, long-term - systemic		0.0001
PROC12 - Use of blow agents in manufacture of foam	Worker - inhalative, long-term - systemic	60.00 ppm	0.60
PROC12 - Use of blow agents in manufacture of foam	Worker - dermal, long-term - systemic	0.04 mg/kg/d	0.00001
PROC12 - Use of blow agents in manufacture of foam	Worker - combined, long-term - systemic		0.60

Section 4 - Guidance to check compliance with the exposure scenario

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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

Chemical name Dichloromethane
Pure substance/mixture Substance
REACH registration number 01-2119480404-41-XXXX
CAS No 75-09-2
EC No (EU Index No) 200-838-9
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

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

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Functional fluids (Heat transfer fluids)
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC7 - Industrial use of substances in closed systems
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

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

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC7 - Industrial use of substances in closed systems

Amounts used

Type	Regional use tonnage
Value	257
Units	t(ons)/year

Type	Fraction of regional tonnage used locally
Value	0.04

Type	Annual site tonnage
Value	10
Units	t(ons)/year

Product characteristics

Remarks	Readily biodegradable
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	20
Release fraction to air from process (initial release prior to RMM)	0.01
Release fraction to wastewater from process (initial release prior to RMM)	0.001
Release fraction to soil from process (initial release prior to RMM)	0.001

Remarks	Common practices vary across sites, thus conservative process release estimates used.
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Operational conditions

Other	Closed systems Water-based process or Dry processes
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Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	93.5%

Further information

Operational conditions	Indoor/Outdoor use
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Remarks	Receiving surface water flow is 18000 m3/d

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide the required removal efficiency of 0%
Soil	not applicable - no direct release to soil

Conditions and measures related to external treatment of waste for disposal

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

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Handle substance within a closed system Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Handle substance within a closed system Ensure that direct skin contact is avoided

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

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Handle substance within a predominantly closed system provided with extract ventilation Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Title	Batch process
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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 extract ventilation to points where emissions occur Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC7 - Industrial use of substances in closed systems

Predicted No Effect Concentration (PNEC)

Freshwater	0.31 mg/l
Freshwater sediment	2.57 mg/kg
Marine water	0.031 mg/l
Marine sediment	0.26 mg/kg
Soil	0.33 mg/kg
Impact on Sewage Treatment	25.9 mg/l

Intermittent release 0.27 mg/l

Calculation method Used EUSES model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.00652 mg/l	0.012
Freshwater sediment	0.0121 mg/kg w.w.	0.012
Marine water	0.000556 mg/l	0.00287
Marine sediment	0.001 mg/kg w.w.	0.00287
Soil	0.00186 mg/kg w.w.	0.00361
STP: Sewage Treatment Plant	0.017 mg/l	0.000656

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12 mg/kg bw/d
Worker - inhalative, long-term - systemic	176 mg/m ³
Consumer - dermal, long-term - systemic	5.82 mg/kg bw/d
Consumer - inhalative, long-term - systemic	44 mg/m ³

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

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	0.01 ppm	0.0001
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - dermal, long-term - systemic	0.07 mg/kg/d	0.00001
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - combined, long-term - systemic		0.0001
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	50.00 ppm	0.50
PROC1 - Use in closed process, no likelihood of exposure	Worker - dermal, long-term - systemic	0.27 mg/kg/d	0.00006
PROC1 - Use in closed process, no likelihood of exposure	Worker - combined, long-term - systemic		0.50
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	10.00 ppm	0.10
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.07 mg/kg/d	0.00001
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - combined, long-term - systemic		0.10
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	10.00 ppm	0.10
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.0003
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - combined, long-term - systemic		0.10

Section 4 - Guidance to check compliance with the exposure scenario

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e.,

RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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

Chemical name Dichloromethane
Pure substance/mixture Substance
REACH registration number 01-2119480404-41-XXXX
CAS No 75-09-2
EC No (EU Index No) 200-838-9
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

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

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Coatings
Type Worker
Main user group Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8b - Wide dispersive indoor use of reactive substances in open systems
Process category(ies) PROC10 - Roller application or brushing
 PROC11 - Non industrial spraying
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
 - ERC8b - Wide dispersive indoor use of reactive substances in open systems

Amounts used

Type	Regional use tonnage
Value	2070
Units	t(ons)/year

Type	Fraction of regional tonnage used locally
Value	0.002

Type	Annual site tonnage
Value	4.14
Units	t(ons)/year

Product characteristics

Remarks	Readily biodegradable
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Other operational conditions of use affecting environmental exposure

Emission days	365
Release fraction to air from process (initial release prior to RMM)	1
Release fraction to wastewater from process (initial release prior to RMM)	1
Release fraction to soil from process (initial release prior to RMM)	0.01

Remarks	Common practices vary across sites, thus conservative process release estimates used.
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Operational conditions

Other	Closed systems Water-based process or Dry processes
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Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	93.5%

Further information

Operational conditions	Indoor/Outdoor use
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Remarks	Receiving surface water flow is 18000 m3/d

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide the required removal efficiency of 0%
Soil	not applicable - no direct release to soil

Conditions and measures related to external treatment of waste for disposal

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

Process category(ies)	PROC10 - Roller application or brushing
Title	Rolling, brushing paint / Coatings
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure > 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 extract ventilation to points where emissions occur
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Title	Rolling, brushing paint / Coatings
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure > 10 kPa at STP
Exposure duration	Avoid carrying out activities involving exposure for more than 1 hour
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Conditions and measures related to personal protection, hygiene and	Wear suitable gloves tested to EN 374

health evaluation	
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Title	Rolling, brushing Adhesives and/or sealants
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure > 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
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC11 - Non industrial spraying
Title	Spraying paint / Coatings
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure > 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 extract ventilation to points where emissions occur
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC11 - Non industrial spraying
Title	Spraying paint / Coatings
Covers concentrations up to	50%
Physical form of product	Liquid, vapour pressure > 10 kPa at STP
Exposure duration	Avoid carrying out activities involving exposure for more than 1 hour
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8b - Wide dispersive indoor use of reactive substances in open systems

Predicted No Effect Concentration (PNEC)

Freshwater	0.31 mg/l
Freshwater sediment	2.57 mg/kg

Marine water	0.031 mg/l
Marine sediment	0.26 mg/kg
Soil	0.33 mg/kg
Impact on Sewage Treatment	25.9 mg/l
Intermittent release	0.27 mg/l

Calculation method Used EUSES model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.019 mg/l	0.035
Freshwater sediment	0.035 mg/kg w.w.	0.035
Marine water	0.00185 mg/l	0.00954
Marine sediment	0.00333 mg/kg w.w.	0.00954
Soil	0.016 mg/kg w.w.	0.016
STP: Sewage Treatment Plant	0.146 mg/l	0.00563

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12 mg/kg bw/d
Worker - inhalative, long-term - systemic	176 mg/m ³
Consumer - dermal, long-term - systemic	5.82 mg/kg bw/d
Consumer - inhalative, long-term - systemic	44 mg/m ³

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

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	50.00 ppm	0.5
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	2.74 mg/kg/d	0.001
PROC10 - Roller application or brushing	Worker - combined, long-term - systemic		0.50
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	35.00 ppm	0.35
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	2.74 mg/kg/d	0.001
PROC10 - Roller application or brushing	Worker - combined, long-term - systemic		0.35
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	50.00 ppm	0.50
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	2.74 mg/kg/d	0.001
PROC10 - Roller application or brushing	Worker - combined, long-term - systemic		0.50
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	60.00 ppm	0.6
PROC11 - Non industrial spraying	Worker - dermal, long-term - systemic	10.71 mg/kg/d	0.002
PROC11 - Non industrial spraying	Worker - combined, long-term - systemic		0.60
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	35.00 ppm	0.35
PROC11 - Non industrial spraying	Worker - dermal, long-term - systemic	10.71 mg/kg/d	0.002
PROC11 - Non industrial spraying	Worker - combined, long-term - systemic		0.35

Section 4 - Guidance to check compliance with the exposure scenario

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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

Chemical name Dichloromethane
Pure substance/mixture Substance
REACH registration number 01-2119480404-41-XXXX
CAS No 75-09-2
EC No (EU Index No) 200-838-9
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

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

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Cleaning agent
Type Worker
Main user group Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8b - Wide dispersive indoor use of reactive substances in open systems
Process category(ies) 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
 - ERC8b - Wide dispersive indoor use of reactive substances in open systems

Amounts used

Type	Regional use tonnage
Value	2810
Units	t(ons)/year

Type	Fraction of regional tonnage used locally
Value	0.002

Type	Annual site tonnage
Value	5.62
Units	t(ons)/year

Product characteristics

Remarks	Readily biodegradable
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Other operational conditions of use affecting environmental exposure

Emission days	365
Release fraction to air from process (initial release prior to RMM)	1
Release fraction to wastewater from process (initial release prior to RMM)	1
Release fraction to soil from process	0.01

(initial release prior to RMM)	
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Operational conditions

Other	Closed systems Water-based process or Dry processes
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Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	93.5%

Further information

Operational conditions	Indoor/Outdoor use
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Remarks	Receiving surface water flow is 18000 m3/d

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide the required removal efficiency of 0%
Soil	not applicable - no direct release to soil

Conditions and measures related to external treatment of waste for disposal

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

Process category(ies)	PROC10 - Roller application or brushing
Title	Rolling, brushing Manual Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Ensure that direct skin contact is avoided
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Title	Manual Equipment cleaning and maintenance
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Ensure that direct skin contact is avoided
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Title	Rolling, brushing Surface cleaning
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Ensure that direct skin contact is avoided
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC10 - Roller application or brushing
Title	Rolling, brushing Surface cleaning
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Ensure that direct skin contact is avoided
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC11 - Non industrial spraying
Title	Spraying Surface cleaning Cleaning with high-pressure washers
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Ensure that direct skin contact is avoided

Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC11 - Non industrial spraying
Title	Spraying Surface cleaning Cleaning with high-pressure washers
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Ensure that direct skin contact is avoided
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC11 - Non industrial spraying
Title	Spraying Degreaser
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Ensure that direct skin contact is avoided
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC11 - Non industrial spraying
Title	Spraying Cleaning with high-pressure washers Degreaser
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Ensure that direct skin contact is avoided
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training

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

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Title	Treatment of articles by dipping and pouring Manual
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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 extract ventilation to points where emissions occur Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Title	Treatment of articles by dipping and pouring Manual
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Ensure that direct skin contact is avoided
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8b - Wide dispersive indoor use of reactive substances in open systems

Predicted No Effect Concentration (PNEC)

Freshwater	0.31 mg/l
Freshwater sediment	2.57 mg/kg
Marine water	0.031 mg/l
Marine sediment	0.26 mg/kg
Soil	0.33 mg/kg
Impact on Sewage Treatment	25.9 mg/l

Intermittent release 0.27 mg/l

Calculation method		Used EUSES model
Environment		predicted exposure level
Freshwater		0.024 mg/l
Freshwater sediment		0.043 mg/kg w.w.
Marine water		0.00230 mg/l
Marine sediment		0.00414 mg/kg w.w.
Soil		0.021 mg/kg w.w.
STP: Sewage Treatment Plant		0.191 mg/l
		Risk characterisation ratio (RCR)
		0.044
		0.044
		0.012
		0.012
		0.041
		0.00737

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic 12 mg/kg bw/d
Worker - inhalative, long-term - systemic 176 mg/m³
Consumer - dermal, long-term - systemic 5.82 mg/kg bw/d
Consumer - inhalative, long-term - systemic 44 mg/m³

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

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	30.00 ppm	0.3
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	5.49 mg/kg/d	0.001
PROC10 - Roller application or brushing	Worker - combined, long-term - systemic		0.50
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	21.00 ppm	0.2
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	5.49 mg/kg/d	0.001
PROC10 - Roller application or brushing	Worker - combined, long-term - systemic		0.35
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	50.00 ppm	0.50
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	5.49 mg/kg/d	0.001
PROC10 - Roller application or brushing	Worker - combined, long-term - systemic		0.50
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	35.00 ppm	0.35
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	5.49 mg/kg/d	0.001
PROC10 - Roller application or brushing	Worker - combined, long-term - systemic		0.35
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	50.00 ppm	0.50
PROC11 - Non industrial spraying	Worker - dermal, long-term - systemic	21.43 mg/kg/d	0.005
PROC11 - Non industrial spraying	Worker - combined, long-term - systemic		0.50
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	35.00 ppm	0.35
PROC11 - Non industrial spraying	Worker - dermal, long-term - systemic	21.43 mg/kg/d	0.005
PROC11 - Non industrial spraying	Worker - combined, long-term - systemic		0.35
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	50.00 ppm	0.50

PROC11 - Non industrial spraying	Worker - dermal, long-term - systemic	21.43 mg/kg/d	0.005
PROC11 - Non industrial spraying	Worker - combined, long-term - systemic		0.50
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	35.00 ppm	0.35
PROC11 - Non industrial spraying	Worker - dermal, long-term - systemic	21.43 mg/kg/d	0.005
PROC11 - Non industrial spraying	Worker - combined, long-term - systemic		0.35
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	50.00 ppm	0.50
PROC13 - Treatment of articles by dipping and pouring	Worker - dermal, long-term - systemic	2.74 mg/kg/d	0.001
PROC13 - Treatment of articles by dipping and pouring	Worker - combined, long-term - systemic		0.50
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	25.00 ppm	0.25
PROC13 - Treatment of articles by dipping and pouring	Worker - dermal, long-term - systemic	2.74 mg/kg/d	0.001
PROC13 - Treatment of articles by dipping and pouring	Worker - combined, long-term - systemic		0.25

Section 4 - Guidance to check compliance with the exposure scenario

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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

Chemical name	Dichloromethane
Pure substance/mixture	Substance
REACH registration number	01-2119480404-41-XXXX
CAS No	75-09-2
EC No (EU Index No)	200-838-9
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Use in agrochemicals
Type	Worker
Main user group	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies)	ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8d - Wide dispersive outdoor use of processing aids in open systems
Process category(ies)	PROC11 - Non industrial spraying
Sector(s) of use	SU1 - Agriculture, forestry, fishery SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

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

Amounts used

Type	Regional use tonnage
Value	1120
Units	t(ons)/year

Type	Fraction of regional tonnage used locally
Value	0.002

Type	Annual site tonnage
Value	2.24
Units	t(ons)/year

Product characteristics

Remarks	Readily biodegradable
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Other operational conditions of use affecting environmental exposure

Emission days	365
Release fraction to air from process (initial release prior to RMM)	1
Release fraction to wastewater from process (initial release prior to RMM)	1
Release fraction to soil from process (initial release prior to RMM)	0.01
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Operational conditions

Other	Closed systems Water-based process or Dry processes
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Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	93.5%

Further information

Operational conditions	Indoor/Outdoor use
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Remarks	Receiving surface water flow is 18000 m3/d

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide the required removal efficiency of 0%
Soil	not applicable - no direct release to soil

Conditions and measures related to external treatment of waste for disposal

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

Process category(ies)	PROC11 - Non industrial spraying
Title	Manual Insecticide Spraying
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure > 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	Ensure that direct skin contact is avoided
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC11 - Non industrial spraying
Title	Machine Insecticide Spraying
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure > 10 kPa at STP
Exposure duration	Avoid carrying out activities involving exposure for more than 4 hours
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to	Ensure that enough fresh air is supplied to dilute and remove dusts, fumes or vapours.

control dispersion from source towards the worker	Between 5 and 15 air changes per hour are recommended, with a through draught Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Segregate the activity away from other operations Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC11 - Non industrial spraying
Title	Manual Insecticide Spraying
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure > 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	Ensure that direct skin contact is avoided
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC11 - Non industrial spraying
Title	Machine Insecticide Spraying
Covers concentrations up to	25%
Physical form of product	Liquid, vapour pressure > 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	Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20 Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

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

**Predicted No Effect Concentration
(PNEC)**

Freshwater

0.31 mg/l

Freshwater sediment	2.57 mg/kg
Marine water	0.031 mg/l
Marine sediment	0.26 mg/kg
Soil	0.33 mg/kg
Impact on Sewage Treatment	25.9 mg/l
Intermittent release	0.27 mg/l

Calculation method Used EUSES model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.00652 mg/l	0.012
Freshwater sediment	0.0121 mg/kg w.w.	0.012
Marine water	0.000556 mg/l	0.00287
Marine sediment	0.001 mg/kg w.w.	0.00287
Soil	0.00186 mg/kg w.w.	0.00361
STP: Sewage Treatment Plant	0.017 mg/l	0.000656

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12 mg/kg bw/d
Worker - inhalative, long-term - systemic	176 mg/m ³
Consumer - dermal, long-term - systemic	5.82 mg/kg bw/d
Consumer - inhalative, long-term - systemic	44 mg/m ³

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

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	60.00 ppm	0.6
PROC11 - Non industrial spraying	Worker - dermal, long-term - systemic	12.86 mg/kg/d	0.003
PROC11 - Non industrial spraying	Worker - combined, long-term - systemic		0.60
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	54.00 ppm	0.54
PROC11 - Non industrial spraying	Worker - dermal, long-term - systemic	12.86 mg/kg/d	0.003
PROC11 - Non industrial spraying	Worker - combined, long-term - systemic		0.54
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	42.00 ppm	0.42
PROC11 - Non industrial spraying	Worker - dermal, long-term - systemic	12.86 mg/kg/d	0.003
PROC11 - Non industrial spraying	Worker - combined, long-term - systemic		0.42
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	21.00 ppm	0.21
PROC11 - Non industrial spraying	Worker - dermal, long-term - systemic	12.86 mg/kg/d	0.003
PROC11 - Non industrial spraying	Worker - combined, long-term - systemic		0.21

Section 4 - Guidance to check compliance with the exposure scenario

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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

Chemical name Dichloromethane
Pure substance/mixture Substance
REACH registration number 01-2119480404-41-XXXX
CAS No 75-09-2
EC No (EU Index No) 200-838-9
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 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8d - Wide dispersive outdoor use of processing aids in open systems
Process category(ies) PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Sector(s) of use SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

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

Amounts used

Type	Regional use tonnage
Value	2810
Units	t(ons)/year

Type	Fraction of regional tonnage used locally
Value	0.002

Type	Annual site tonnage
Value	5.56
Units	t(ons)/year

Product characteristics

Remarks	Readily biodegradable
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Other operational conditions of use affecting environmental exposure

Emission days	365
Release fraction to air from process (initial release prior to RMM)	1
Release fraction to wastewater from	1

process (initial release prior to RMM)	
Release fraction to soil from process (initial release prior to RMM)	0
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Operational conditions

Other	Closed systems Water-based process or Dry processes
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Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	93.5%

Further information

Operational conditions	Indoor use
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Remarks	Receiving surface water flow is 18000 m3/d

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide the required removal efficiency of 0%
Soil	not applicable - no direct release to soil

Conditions and measures related to external treatment of waste for disposal

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

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 > 10 kPa at STP
Exposure duration	Avoid carrying out activities involving exposure for more than 4 hours
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide extract ventilation to points where emissions occur Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
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Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 10 kPa at STP
Exposure duration	Avoid carrying out activities involving exposure for more than 1 hour
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	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 > 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	Fill containers/cans at dedicated fill points supplied with local extract ventilation Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 10 kPa at STP
Exposure duration	Avoid carrying out activities involving exposure for more than 1 hour
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Use dedicated equipment Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	Drum and small package filling
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Fill containers/cans at dedicated fill points supplied with local extract ventilation Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	Drum and small package filling
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 10 kPa at STP
Exposure duration	Avoid carrying out activities involving exposure for more than 1 hour
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Use dedicated equipment Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Outdoor use
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Section 3 - Exposure estimation

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

Predicted No Effect Concentration (PNEC)

Freshwater	0.31 mg/l
Freshwater sediment	2.57 mg/kg
Marine water	0.031 mg/l
Marine sediment	0.26 mg/kg
Soil	0.33 mg/kg
Impact on Sewage Treatment	25.9 mg/l
Intermittent release	0.27 mg/l

Calculation method Used EUSES model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.00652 mg/l	0.012
Freshwater sediment	0.0121 mg/kg w.w.	0.012
Marine water	0.000556 mg/l	0.00287
Marine sediment	0.001 mg/kg w.w.	0.00287
Soil	0.00186 mg/kg w.w.	0.00361
STP: Sewage Treatment Plant	0.017 mg/l	0.000656

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12 mg/kg bw/d
Worker - inhalative, long-term - systemic	176 mg/m ³
Consumer - dermal, long-term - systemic	5.82 mg/kg bw/d
Consumer - inhalative, long-term - systemic	44 mg/m ³

Calculation method

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

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	60.00 ppm	0.6
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	2.74 mg/kg/d	0.0006
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - combined, long-term - systemic		0.60
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	70.00 ppm	0.70
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	2.74 mg/kg/d	0.0006
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - combined, long-term - systemic		0.70
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	25.00 ppm	0.25
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.0003
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - combined, long-term - systemic		0.25
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	35.00 ppm	0.35
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.0003
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - combined, long-term - systemic		0.35

PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	50.00 ppm	0.50
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.0003
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - combined, long-term - systemic		0.50
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	35.00 ppm	0.35
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - dermal, long-term - systemic	1.37 mg/kg/d	0.0003
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - combined, long-term - systemic		0.35

Section 4 - Guidance to check compliance with the exposure scenario

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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

Chemical name Dichloromethane
Pure substance/mixture Substance
REACH registration number 01-2119480404-41-XXXX
CAS No 75-09-2
EC No (EU Index No) 200-838-9
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

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

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Use in laboratories
Type Worker
Main user group Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC8a - Wide dispersive indoor use of processing aids in open systems
Process category(ies) PROC10 - Roller application or brushing
 PROC15 - Use as laboratory reagent
Sector(s) of use SU22 - Professional uses SU24 - Scientific research and development

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

Amounts used

Type	Regional use tonnage
Value	257
Units	t(ons)/year

Type	Fraction of regional tonnage used locally
Value	0.002

Type	Annual site tonnage
Value	257
Units	t(ons)/year

Product characteristics

Remarks	Readily biodegradable
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Other operational conditions of use affecting environmental exposure

Type	Continuous release
Emission days	300
Release fraction to air from process (initial release prior to RMM)	0.5
Release fraction to wastewater from process (initial release prior to RMM)	0.5

Release fraction to soil from process (initial release prior to RMM)	0
Remarks	Common practices vary across sites, thus conservative process release estimates used.

Operational conditions

Other	Closed systems Water-based process or Dry processes
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Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency fraction (offsite; STP)	93.5%

Further information

Operational conditions	Indoor use
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Remarks	Receiving surface water flow is 18000 m3/d

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Prevent discharge of undissolved substance to or recover from onsite wastewater
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Control measures to prevent releases

Air	Treat air emission to provide the required removal efficiency of 0%
Soil	not applicable - no direct release to soil

Conditions and measures related to external treatment of waste for disposal

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

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 10 kPa at STP
Exposure duration	Avoid carrying out activities involving exposure for more than 4 hours
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide extract ventilation to points where emissions occur Ensure that direct skin contact is avoided
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
Organisational measures to prevent /limit releases, dispersion and exposure	Clear spills immediately
Remarks	Assumes a good basic standard of occupational hygiene is implemented
Operational conditions	Assumes use at not more than 20°C above ambient temperature, unless stated differently

Process category(ies)	PROC15 - Use as laboratory reagent
Covers concentrations up to	100%
Physical form of product	Liquid, vapour pressure > 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	Ensure that direct skin contact is avoided

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

Section 3 - Exposure estimation

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

Predicted No Effect Concentration (PNEC)

Freshwater	0.31 mg/l
Freshwater sediment	2.57 mg/kg
Marine water	0.031 mg/l
Marine sediment	0.26 mg/kg
Soil	0.33 mg/kg
Impact on Sewage Treatment	25.9 mg/l
Intermittent release	0.27 mg/l

Calculation method Used EUSES model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.00577 mg/l	0.011
Freshwater sediment	0.010 mg/kg w.w.	0.011
Marine water	0.000481 mg/l	0.00248
Marine sediment	0.000865 mg/kg w.w.	0.00248
Soil	0.00102 mg/kg w.w.	0.00199
STP: Sewage Treatment Plant	0.00913 mg/l	0.000353

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	12 mg/kg bw/d
Worker - inhalative, long-term - systemic	176 mg/m ³
Consumer - dermal, long-term - systemic	5.82 mg/kg bw/d
Consumer - inhalative, long-term - systemic	44 mg/m ³

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

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	60.00 ppm	0.6
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	5.49 mg/kg/d	0.0012
PROC10 - Roller application or brushing	Worker - combined, long-term - systemic		0.60
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	50.00 ppm	0.50
PROC15 - Use as laboratory reagent	Worker - dermal, long-term - systemic	0.07 mg/kg/d	0.00001
PROC15 - Use as laboratory reagent	Worker - combined, long-term - systemic		0.50

Section 4 - Guidance to check compliance with the exposure scenario

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.