SAFETY DATA SHEET

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

Supercedes date 07-Mar-2025 **Revision date** 11-Nov-2025 **Revision Number** 4.01

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

1.1. Product identifier

Product Code(s)	01413
Safety data sheet number	01413
Product Name	PROPYLENE CARBONATE
Index No	607-194-00-1
EC Number	203-572-1
CAS No	108-32-7
Synonyms	ARCONATE HP, PROPYLENE CARBONATE SHG, PROPYLENE CARBONATE NVL, PROPYLENE CARBONATE SHA, CARBONATO DE PROPILENO SHA
Pure substance/mixture	Substance
Molecular weight	102.09 g/mol

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

Recommended use	Industrial use Chemical intermediate Coatings Metal surface treatment Ink and toners Cleaning agent Plant protection agent Laboratory chemicals Solvent For further information, see attached Exposure Scenario

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

Serious eye damage/eye irritation	Category 2 - (H319)

2.2. Label elements

Signal word
Warning

Hazard statements
H319 - Causes serious eye irritation

Precautionary statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear eye protection/ face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Weight-%	EC No (EU Index No)	UK REACH registration number	Classification according to GB CLP (SI 2020/1567 as amended)	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
PROPYLENE CARBONATE 108-32-7	100%	203-572-1 (607-194-00-1)	-	Eye Irrit. 2 (H319)	-	-	-

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

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance.

Inhalation	Remove to fresh air. Get medical attention if symptoms occur.
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	Take off contaminated clothing and wash it before reuse. Wash skin with soap and water. In the case of skin irritation or allergic reactions see a doctor.
Ingestion	Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. 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	Causes serious eye irritation.
Inhalation	No information available.
Eyes	Causes serious eye irritation.
Dermal	No information available.
Ingestion	No information available

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

Note to doctors	Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media	Water spray. Alcohol resistant foam. Carbon dioxide (CO2). Dry chemical.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products	Carbon oxides.

5.3. Advice for firefighters

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	In case of spills, beware of slippery floors and surfaces. Wear suitable protective clothing. Avoid contact with skin, eyes and inhalation of vapours. Ensure adequate ventilation. In case of inadequate ventilation wear respiratory protection.
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 Keep out of drains, sewers, ditches and waterways. Prevent further leakage or spillage if safe to do so. See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Dyke far ahead of liquid spill for later disposal.

Methods for cleaning up Collect with absorbent, non-combustible material into suitable containers.

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.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Use personal protection recommended in Section 8. Avoid contact with skin, eyes and inhalation of vapours. Ensure adequate ventilation. Do not eat, drink or smoke when using this product.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash face, hands and any exposed skin thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. Ensure that eyewash stations and safety showers are close to the workstation location. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from direct sunlight. Keep away from food, drink and animal feedingstuffs. Keep at temperatures between 5 and 65 °C.

7.3. Specific end use(s)

Specific use(s)
See section 1 for more information.

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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

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

Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
PROPYLENE CARBONATE		20 mg/kg [4] [6]	70.53 mg/m³ [4] [6]

Chemical name	Oral	Dermal	Inhalation
108-32-7		10 mg/cm2 [5] [6]	20 mg/m³ [5] [6]

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

Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
PROPYLENE CARBONATE 108-32-7	10 mg/kg [4] [6]	10 mg/kg [4] [6]	17.4 mg/m³ [4] [6] 10 mg/m³ [5] [6]

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

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
PROPYLENE CARBONATE 108-32-7	0.9 mg/L	9 mg/L	0.09 mg/L	0.9 mg/L	

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
PROPYLENE CARBONATE 108-32-7			7400 mg/L	0.81 mg/kg	

8.2. Exposure controls

Engineering controls Apply technical measures to comply with the occupational exposure limits. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye/face protection If splashes are likely to occur, wear safety glasses with side-shields. Use eye protection according to EN ISO 16321-1.

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

Gloves			
Duration of contact	PPE - Glove material	Glove thickness	Break through time
Short term	Nitrile rubber	0.4 mm	>30 minutes
Long term (repeated)	Polyvinyl chloride (PVC) Butyl rubber Fluoroelastomer	0.7 mm	>480 minutes

Skin and body protection Wear suitable protective clothing.

Respiratory protection In case of inadequate ventilation wear respiratory protection.
Recommended filter type: Mask filter for respirable fine particles (FFP2).

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash face, hands and any exposed skin

thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. Ensure that eyewash stations and safety showers are close to the workstation location. Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls Local authorities should be advised if significant spillages cannot be contained. Ensure all waste water is collected and treated via a waste water treatment plant.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

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

Property	Values	Remarks • Method
Melting point / freezing point	-49 °C	No information available.
Initial boiling point and boiling range	242 °C	1013 hPa.
Flammability		No information available.
Flammability Limit in Air		No information available.
Upper flammability or explosive limits	21 %(V)	
Lower flammability or explosive limits	4.7 %(V)	
Flash point	116 °C	No information available.
Autoignition temperature	430 °C	No information available.
Decomposition temperature		No information available.
pH		No information available.
pH (as aqueous solution)	7.5	solution (20 %).
Kinematic viscosity	1.6 mm²/s	@ 43.33 °C.
Dynamic viscosity	2.5 mPa s	@ 25 °C.
Water solubility	Soluble in water 200 g/L	@ 25 °C.
Solubility(ies)		No information available.
Partition coefficient	log Kow: -0.41	No information available.
Vapour pressure	0.06 hPa	@ 25 °C.
Relative density	1.2	20 °C.
Bulk density		No information available
Liquid Density	1.2 g/mL	@ 25 °C
Relative vapour density	3.5	No information available.
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	102.09 g/mol
Evaporation rate	< 0.005

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity Stable under recommended storage conditions.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid Excessive heat. Ignition sources.

10.5. Incompatible materials

Incompatible materials Acids. Bases. Oxidising agents. Organic peroxide. Reducing agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Carbon oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Causes serious eye irritation. On basis of test data.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Causes serious eye irritation.

Acute toxicity

Numerical measures of toxicity

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
PROPYLENE CARBONATE	33520 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	-

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

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

PROPYLENE CARBONATE (108-32-7)

Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD 404	Rabbit	Dermal			Not classified

Serious eye damage/eye irritation Causes serious eye irritation. On basis of test data.

PROPYLENE CARBONATE (108-32-7)

Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD 405	Rabbit	eye			Causes serious eye irritation

Respiratory or skin sensitisation No information available.

PROPYLENE CARBONATE (108-32-7)

Method	Species	Exposure route	Results
	human data	Dermal	Not classified

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

Component Information
PROPYLENE CARBONATE (108-32-7)

Method	Species	Results
OECD 471	in vitro Ames Test	Negative
OECD 482	in vitro	Negative
OECD 474	in vivo Mouse	Negative

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

Component Information
PROPYLENE CARBONATE (108-32-7)

Method	Species	Results
OECD 451	Mouse	Not classified

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

PROPYLENE CARBONATE (108-32-7)

Method	Species	Results
OECD 414	Rat	Not classified

STOT - single exposure No information available.

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

Component Information
PROPYLENE CARBONATE (108-32-7)

Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD 413	Rat	Inhalation Dust/Mist	0.1 mg/L	90 days	NOAEL Not classified
OECD 408	Rat	Oral	5000 mg/kg	90 days	NOAEL Not classified

Aspiration hazard No information available.

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

PROPYLENE CARBONATE (108-32-7)

Method	Species	Endpoint type	Effective dose	Exposure time	Results
Directive 67/548/EEC, Annex V, C.1.	Fish	LC50	> 1000 mg/L	96 hours	Not classified
OECD Test No. 202: Daphnia sp., Acute Immobilisation Test	Crustacea	EC50	> 1000 mg/L	48 hours	Not classified
OECD Test No. 201: Freshwater Algae and Cyanobacteria, Growth Inhibition Test	Algae	ErC50	> 900 mg/L	72 hours	Not classified
OECD Test No. 201: Freshwater Algae and Cyanobacteria, Growth Inhibition Test	Algae	NOEC	> 900 mg/L	72 hours	Not classified

12.2. Persistence and degradability

Persistence and degradability Readily biodegradable.

PROPYLENE CARBONATE (108-32-7)

Method	Exposure time	Value	Results
OECD Test No. 302B: Inherent Biodegradability: Zahn-Wellens/ EVPA Test		> 70% Biodegradation	Inherently Biodegradable
OECD Test No. 301E: Ready Biodegradability: Modified OECD Screening Test (TG 301 E)		98% Biodegradation	Readily biodegradable
OECD Test No. 301B: Ready Biodegradability: CO2 Evolution Test (TG 301 B)	29 days	83.5% Biodegradation	Readily biodegradable

12.3. Bioaccumulative potential

Bioaccumulation Not likely to bioaccumulate.

Component Information

Chemical name	Partition coefficient
PROPYLENE CARBONATE	-0.41

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

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

Chemical name	PBT and vPvB assessment
PROPYLENE CARBONATE	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 Not regulated
14.2 UN proper shipping name Not regulated
14.3 Transport hazard class(es) Not regulated
14.4 Packing group Not regulated
14.5 Environmental hazards Not applicable
14.6 Special precautions for user
Special Provisions None

IMDG

14.1 UN number or ID number Not regulated
14.2 UN proper shipping name Not regulated
14.3 Transport hazard class(es) Not regulated
14.4 Packing group Not regulated
14.5 Environmental hazards Not applicable
14.6 Special precautions for user
Special Provisions None
14.7 Maritime transport in bulk according to IMO instruments No information available

RID

14.1 UN number or ID number Not regulated
14.2 UN proper shipping name Not regulated
14.3 Transport hazard class(es) Not regulated
14.4 Packing group Not regulated
14.5 Environmental hazards Not applicable
14.6 Special precautions for user
Special Provisions None

ADR

14.1 UN number or ID number Not regulated
14.2 UN proper shipping name Not regulated
14.3 Transport hazard class(es) Not regulated
14.4 Packing group Not regulated
14.5 Environmental hazards Not applicable
14.6 Special precautions for user
Special Provisions None

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).
Product restricted per REACH Annex XVII: 3

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
PROPYLENE CARBONATE - 108-32-7	3, 75.	-

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)
Not applicable

Poisons Act 1972 (Explosive Precursors) Regulations (as Amended)
Not applicable

International Inventories

TSCA	Contact supplier for inventory compliance status
DSL/NDSL	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/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

15.2. Chemical safety assessment

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

SECTION 16: Other information

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

Full text of H-Statements referred to under section 3
H319 - Causes serious eye irritation

Legend
SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: Exposure controls/personal protection

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

Revision Note SDS sections updated 1 3 4 5 6 8 9 11 12 13 15 16

Classification procedure

Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	On basis of test data
Acute dermal toxicity	On basis of test data
Acute inhalation toxicity - gas	Calculation method

Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	On basis of test data
Serious eye damage/eye irritation	On basis of test data
Respiratory sensitisation	Calculation method
Skin sensitisation	On basis of test data
Mutagenicity	On basis of test data
Carcinogenicity	On basis of test data
Reproductive toxicity	On basis of test data
STOT - single exposure	Calculation method
STOT - repeated exposure	On basis of test data
Acute aquatic toxicity	On basis of test data
Chronic aquatic toxicity	On basis of test data
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 N Bajaj

Supercedes date 07-Mar-2025

Revision date 11-Nov-2025

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]

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Formulation
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)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation) PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Product Name	PROPYLENE CARBONATE
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

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

Amounts used

Type	Annual amount used in the EU
Value	1200
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 100
Release fraction to air from process (initial release prior to RMM)	2.5%
Release fraction to wastewater from process (initial release prior to RMM)	2%
Release fraction to soil from process (initial release prior to RMM)	0.01%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d

Local freshwater dilution factor	10
Local marine water dilution factor	100

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

Control of worker exposure	
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Liquid

Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Section 3 - Exposure estimation

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

Predicted No Effect Concentration (PNEC)

- **Freshwater** 0.9 mg/l
- **Marine water** 0.09 mg/l
- **Soil** 0.81 mg/kg
- **Impact on Sewage Treatment** 7400 mg/l
- **Intermittent release** 9 mg/l

Calculation method Used ECETOC TRA model
Msafe 12868.2 t/d
Remarks Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

- **Worker - dermal, long-term - systemic** 20 mg/kg
- **Worker - inhalative, long-term - local** 20 mg/m³
- **Worker - inhalative, long-term - systemic** 70.5 mg/m³
- **Consumer - oral, long-term - systemic** 10 mg/kg
- **Consumer - dermal, long-term - systemic** 10 mg/kg
- **Consumer - inhalative, long-term - systemic** 17.4 mg/m³

Calculation method Used ECETOC TRA model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - dermal, long-term - systemic	0.0343 mg/kg bw/d	0.001714
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.0317 mg/m³	0.000449
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - dermal, long-term - systemic	1.3714 mg/kg bw/d	0.068571
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	3.1704 mg/m³	0.044932
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.6857 mg/kg bw/d	0.034286
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	9.5112 mg/m³	0.134797
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, long-term - systemic	6.8571 mg/kg bw/d	0.342857

PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	15.8521 mg/m^3	0.224661
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - dermal, long-term - systemic	2.7429 mg/kg bw/d	0.137143
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	15.8521 mg/m^3	0.224661

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found at. http:/www.ecetoc.org/tra.

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

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

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

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

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

Amounts used

Type	Annual amount used in the EU
Value	8000
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 300
Release fraction to air from process (initial release prior to RMM)	2.5%
Release fraction to wastewater from process (initial release prior to RMM)	2%
Release fraction to soil from process (initial release prior to RMM)	0.01%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d

Local freshwater dilution factor	10
Local marine water dilution factor	100

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

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	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

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	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Section 3 - Exposure estimation

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

Predicted No Effect Concentration (PNEC)

Freshwater	0.9 mg/l
Marine water	0.09 mg/l
Soil	0.81 mg/kg

Impact on Sewage Treatment 7400 mg/l
Intermittent release 9 mg/l

Calculation method Used ECETOC TRA model
Msafe 28596 t/d
Remarks Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic 20 mg/kg
Worker - inhalative, long-term - local 20 mg/m³
Worker - inhalative, long-term - systemic 70.5 mg/m³
Consumer - oral, long-term - systemic 10 mg/kg
Consumer - dermal, long-term - systemic 10 mg/kg
Consumer - inhalative, long-term - systemic 17.4 mg/m³

Calculation method Used ECETOC TRA model

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 - dermal, long-term - systemic	2.7429 mg/kg bw/d	0.137143
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	31.7042 mg/m³	0.44932
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	2.7429 mg/kg bw/d	0.137143
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	15.8521 mg/m³	0.224661
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - dermal, long-term - systemic	6.8571 mg/kg bw/d	0.342857
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	15.8521 mg/m³	0.224661

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found at. http:/www.ecetoc.org/tra.

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

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Use in process chemicals
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
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
Product Name	PROPYLENE CARBONATE
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	Annual amount used in the EU
Value	2300
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 100
Release fraction to air from process (initial release prior to RMM)	100%
Release fraction to wastewater from process (initial release prior to RMM)	100%
Release fraction to soil from process (initial release prior to RMM)	5%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d

Local freshwater dilution factor	10
Local marine water dilution factor	100

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

Control of worker exposure	
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

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	0.9 mg/l
Marine water	0.09 mg/l
Soil	0.81 mg/kg
Impact on Sewage Treatment	7400 mg/l
Intermittent release	9 mg/l

Calculation method	Used ECETOC TRA model
Msafe	24664 t/d
Remarks	Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	20 mg/kg
Worker - inhalative, long-term - local	20 mg/m³
Worker - inhalative, long-term - systemic	70.5 mg/m³
Consumer - oral, long-term - systemic	10 mg/kg
Consumer - dermal, long-term - systemic	10 mg/kg
Consumer - inhalative, long-term - systemic	17.4 mg/m³

Calculation method Used ECETOC TRA model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - dermal, long-term - systemic	0.0343 mg/kg bw/d	0.001714
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.0317 mg/m³	0.000449
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - dermal, long-term - systemic	1.3714 mg/kg bw/d	0.068571
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	3.1704 mg/m³	0.044932
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.6857 mg/kg bw/d	0.034286
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	9.5112 mg/m³	0.134797
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, long-term - systemic	6.8571 mg/kg bw/d	0.342857
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	15.8521 mg/m³	0.224661

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found at. http:/www.ecetoc.org/tra.

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

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Use as an intermediate
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
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)
Product Name	PROPYLENE CARBONATE
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) - ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)

Amounts used

Type	Annual amount used in the EU
Value	100
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 20
Release fraction to air from process (initial release prior to RMM)	5%
Release fraction to wastewater from process (initial release prior to RMM)	2%
Release fraction to soil from process (initial release prior to RMM)	0.1%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Environmental factors not influenced by risk management

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

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

Control of worker exposure	
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

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	0.9 mg/l
Marine water	0.09 mg/l
Soil	0.81 mg/kg
Impact on Sewage Treatment	7400 mg/l
Intermittent release	9 mg/l

Calculation method	Used ECETOC TRA model
Msafe	5361.7 t/d

Remarks Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	20 mg/kg
Worker - inhalative, long-term - local	20 mg/m³
Worker - inhalative, long-term - systemic	70.5 mg/m³
Consumer - oral, long-term - systemic	10 mg/kg
Consumer - dermal, long-term - systemic	10 mg/kg
Consumer - inhalative, long-term - systemic	17.4 mg/m³

Calculation method Used ECETOC TRA model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - dermal, long-term - systemic	0.0343 mg/kg bw/d	0.001714
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.0317 mg/m³	0.000449
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - dermal, long-term - systemic	1.3714 mg/kg bw/d	0.068571
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	3.1704 mg/m³	0.044932
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.6857 mg/kg bw/d	0.034286
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	9.5112 mg/m³	0.134797

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found at. http:/www.ecetoc.org/tra.

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

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Use in process chemicals Polymer production
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC6d - Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation) PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC7 - Industrial spraying PROC10 - Roller application or brushing PROC13 - Treatment of articles by dipping and pouring
Product Name	PROPYLENE CARBONATE
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) - ERC6d - Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

Amounts used

Type	Annual amount used in the EU
Value	1050
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 100
Release fraction to air from process (initial release prior to RMM)	35%
Release fraction to wastewater from process (initial release prior to RMM)	0.005%
Release fraction to soil from process (initial release prior to RMM)	0.025%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment	2000 m3/d

plant flow	

Environmental factors not influenced by risk management

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

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

Control of worker exposure	
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor

Assumes process temperature up to	20 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC7 - Industrial spraying
Covers concentrations up to	25%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Technical conditions and measures to control dispersion from source towards the worker	Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m) Ensure that spray direction is only horizontal or downward
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Efficiency of at least 90%
Organisational measures to prevent /limit releases, dispersion and exposure	Carry out in a vented booth provided with laminar airflow Regular inspection and maintenance of equipment and machines
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC6d - Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

Predicted No Effect Concentration (PNEC)

Freshwater	0.9 mg/l
Marine water	0.09 mg/l
Soil	0.81 mg/kg
Impact on Sewage Treatment	7400 mg/l
Intermittent release	9 mg/l

Calculation method Used ECETOC TRA model
Msafe 11259.7 t/d
Remarks Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	20 mg/kg
Worker - inhalative, long-term - local	20 mg/m³
Worker - inhalative, long-term - systemic	70.5 mg/m³
Consumer - oral, long-term - systemic	10 mg/kg
Consumer - dermal, long-term - systemic	10 mg/kg
Consumer - inhalative, long-term - systemic	17.4 mg/m³

Calculation method Used ECETOC TRA model
Used Riskofderm model
Used Stoffenmanager model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - dermal, long-term - systemic	0.0343 mg/kg bw/d	0.001714
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.0317 mg/m³	0.000449
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - dermal, long-term - systemic	1.3714 mg/kg bw/d	0.068571
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	3.1704 mg/m³	0.044932
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.6857 mg/kg bw/d	0.034286
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	9.5112 mg/m³	0.134797
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, long-term - systemic	6.8571 mg/kg bw/d	0.342857
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	15.8521 mg/m³	0.224661
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - dermal, long-term - systemic	2.7429 mg/kg bw/d	0.137143

PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	15.8521 mg/m³	0.224661
PROC7 - Industrial spraying	Worker - dermal, long-term - systemic	1.55 mg/kg bw/d	0.0775
PROC7 - Industrial spraying	Worker - inhalative, long-term - systemic	5.93 mg/m³	0.084042
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	5.4857 mg/kg bw/d	0.274286
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	31.7042 mg/m³	0.449322
PROC13 - Treatment of articles by dipping and pouring	Worker - dermal, long-term - systemic	2.7429 mg/kg bw/d	0.137143
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	31.7042 mg/m³	0.449322

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found at. http:/www.ecetoc.org/tra.

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

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Coatings
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Process category(ies)	PROC7 - Industrial spraying PROC10 - Roller application or brushing PROC13 - Treatment of articles by dipping and pouring
Product Name	PROPYLENE CARBONATE
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	Annual amount used in the EU
Value	700
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 20
Release fraction to air from process (initial release prior to RMM)	100%
Release fraction to wastewater from process (initial release prior to RMM)	100%
Release fraction to soil from process (initial release prior to RMM)	5%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Environmental factors not influenced by risk management

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

Local marine water dilution factor	100

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

Control of worker exposure	
Process category(ies)	PROC7 - Industrial spraying
Covers concentrations up to	25%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Technical conditions and measures to control dispersion from source towards the worker	Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m) Ensure that spray direction is only horizontal or downward
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Efficiency of at least 90%
Organisational measures to prevent /limit releases, dispersion and exposure	Carry out in a vented booth provided with laminar airflow Regular inspection and maintenance of equipment and machines
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

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 0.9 mg/l

Marine water 0.09 mg/l
Soil 0.81 mg/kg
Impact on Sewage Treatment 7400 mg/l
Intermittent release 9 mg/l

Calculation method Used ECETOC TRA model
Msafe 37532.2 t/d
Remarks Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic 20 mg/kg
Worker - inhalative, long-term - local 20 mg/m³
Worker - inhalative, long-term - systemic 70.5 mg/m³
Consumer - oral, long-term - systemic 10 mg/kg
Consumer - dermal, long-term - systemic 10 mg/kg
Consumer - inhalative, long-term - systemic 17.4 mg/m³

Calculation method Used ECETOC TRA model
Used Riskofderm model
Used Stoffenmanager model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC7 - Industrial spraying	Worker - dermal, long-term - systemic	1.55 mg/kg bw/d	0.0775
PROC7 - Industrial spraying	Worker - inhalative, long-term - systemic	5.93 mg/m³	0.084042
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	5.4857 mg/kg bw/d	0.274286
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	31.7042 mg/m³	0.449322
PROC13 - Treatment of articles by dipping and pouring	Worker - dermal, long-term - systemic	2.7429 mg/kg bw/d	0.137143
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	31.7042 mg/m³	0.449322

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found at. http:/www.ecetoc.org/tra.

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

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Use in cleaning agents
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 PROC13 - Treatment of articles by dipping and pouring
Product Name	PROPYLENE CARBONATE
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	Annual amount used in the EU
Value	500
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 20
Release fraction to air from process (initial release prior to RMM)	100%
Release fraction to wastewater from process (initial release prior to RMM)	100%
Release fraction to soil from process (initial release prior to RMM)	5%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Environmental factors not influenced by risk management

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

Local marine water dilution factor	100

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

Control of worker exposure	
Process category(ies)	PROC7 - Industrial spraying
Covers concentrations up to	25%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Technical conditions and measures to control dispersion from source towards the worker	Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m) Ensure that spray direction is only horizontal or downward
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Efficiency of at least 90%
Organisational measures to prevent /limit releases, dispersion and exposure	Carry out in a vented booth provided with laminar airflow Regular inspection and maintenance of equipment and machines
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

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 0.9 mg/l

Marine water 0.09 mg/l
Soil 0.81 mg/kg
Impact on Sewage Treatment 7400 mg/l
Intermittent release 9 mg/l

Calculation method Used ECETOC TRA model
Msafe 26808.7 t/d
Remarks Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic 20 mg/kg
Worker - inhalative, long-term - local 20 mg/m³
Worker - inhalative, long-term - systemic 70.5 mg/m³
Consumer - oral, long-term - systemic 10 mg/kg
Consumer - dermal, long-term - systemic 10 mg/kg
Consumer - inhalative, long-term - systemic 17.4 mg/m³

Calculation method Used ECETOC TRA model
Used Riskofderm model
Used Stoffenmanager model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC7 - Industrial spraying	Worker - dermal, long-term - systemic	1.55 mg/kg bw/d	0.0775
PROC7 - Industrial spraying	Worker - inhalative, long-term - systemic	5.93 mg/m³	0.084042
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	5.4857 mg/kg bw/d	0.274286
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	31.7042 mg/m³	0.449322
PROC13 - Treatment of articles by dipping and pouring	Worker - dermal, long-term - systemic	2.7429 mg/kg bw/d	0.137143
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	31.7042 mg/m³	0.449322

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found at. http:/www.ecetoc.org/tra.

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

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Functional fluids
Type	Worker
Main user group	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)	PROC17 - Lubrication at high energy conditions and in partly open process PROC18 - Greasing at high energy conditions
Product Name	PROPYLENE CARBONATE
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	Annual amount used in the EU
Value	900
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 20
Release fraction to air from process (initial release prior to RMM)	5%
Release fraction to wastewater from process (initial release prior to RMM)	5%
Release fraction to soil from process (initial release prior to RMM)	5%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Environmental factors not influenced by risk management

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

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

Control of worker exposure	
Process category(ies)	PROC17 - Lubrication at high energy conditions and in partly open process
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Efficiency of at least 30%
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC18 - Greasing at high energy conditions
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Efficiency of at least 30%
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Section 3 - Exposure estimation

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

Predicted No Effect Concentration (PNEC)

- **Freshwater** 0.9 mg/l
- **Marine water** 0.09 mg/l
- **Soil** 0.81 mg/kg
- **Impact on Sewage Treatment** 7400 mg/l
- **Intermittent release** 9 mg/l

Calculation method Used ECETOC TRA model
Msafe 48255.7 t/d
Remarks Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

- **Worker - dermal, long-term - systemic** 20 mg/kg
- **Worker - inhalative, long-term - local** 20 mg/m^3
- **Worker - inhalative, long-term - systemic** 70.5 mg/m^3

Consumer - oral, long-term - systemic	10 mg/kg
Consumer - dermal, long-term - systemic	10 mg/kg
Consumer - inhalative, long-term - systemic	17.4 mg/m³

Calculation method Used ECETOC TRA model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC17 - Lubrication at high energy conditions and in partly open process	Worker - dermal, long-term - systemic	5.4857 mg/kg bw/d	0.274286
PROC17 - Lubrication at high energy conditions and in partly open process	Worker - inhalative, long-term - systemic	44.3858 mg/m³	0.629051
PROC18 - Greasing at high energy conditions	Worker - dermal, long-term - systemic	2.7429 mg/kg bw/d	0.137143
PROC18 - Greasing at high energy conditions	Worker - inhalative, long-term - systemic	44.3858 mg/m³	0.629051

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found at. http:/www.ecetoc.org/tra.

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

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Use in laboratories
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Process category(ies)	PROC15 - Use as laboratory reagent
Product Name	PROPYLENE CARBONATE
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	Annual amount used in the EU
Value	1
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 20
Release fraction to air from process (initial release prior to RMM)	100%
Release fraction to wastewater from process (initial release prior to RMM)	100%
Release fraction to soil from process (initial release prior to RMM)	5%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Environmental factors not influenced by risk management

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

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

Control of worker exposure	
Process category(ies)	PROC15 - Use as laboratory reagent
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

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	0.9 mg/l
Marine water	0.09 mg/l
Soil	0.81 mg/kg
Impact on Sewage Treatment	7400 mg/l
Intermittent release	9 mg/l

Calculation method	Used ECETOC TRA model
Msafe	53617.5 t/d
Remarks	Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	20 mg/kg
Worker - inhalative, long-term - local	20 mg/m^3
Worker - inhalative, long-term - systemic	70.5 mg/m^3
Consumer - oral, long-term - systemic	10 mg/kg
Consumer - dermal, long-term - systemic	10 mg/kg
Consumer - inhalative, long-term - systemic	17.4 mg/m^3

Calculation method Used ECETOC TRA model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC15 - Use as laboratory reagent	Worker - dermal, long-term - systemic	0.3429 mg/kg bw/d	0.017143
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	15.8521 mg/m^3	0.224661

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found at. http:/www.ecetoc.org/tra.

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

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
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)	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)
Product Name	PROPYLENE CARBONATE
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

Amounts used

Type	Annual amount used in the EU
Value	420
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 365
Release fraction to air from process (initial release prior to RMM)	100%
Release fraction to wastewater from process (initial release prior to RMM)	100%
Release fraction to soil from process (initial release prior to RMM)	0%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Environmental factors not influenced by risk management

Receiving water dilution (fresh or	18000 m3/d

marine)	
Local freshwater dilution factor	10
Local marine water dilution factor	100

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

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	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Efficiency of at least 30%
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Efficiency of at least 90%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

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	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Efficiency of at least 30%
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

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	0.9 mg/l
Marine water	0.09 mg/l
Soil	0.81 mg/kg
Impact on Sewage Treatment	7400 mg/l
Intermittent release	9 mg/l

Calculation method Used ECETOC TRA model
Msafe 2467.9 kg/d
Remarks Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	20 mg/kg
Worker - inhalative, long-term - local	20 mg/m³
Worker - inhalative, long-term - systemic	70.5 mg/m³
Consumer - oral, long-term - systemic	10 mg/kg
Consumer - dermal, long-term - systemic	10 mg/kg
Consumer - inhalative, long-term - systemic	17.4 mg/m³

Calculation method Used ECETOC TRA model

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 - dermal, long-term - systemic	1.3714 mg/kg bw/d	0.068571
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	55.4823 mg/m³	0.786314
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	2.7429 mg/kg bw/d	0.137143
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	22.1929 mg/m³	0.314525
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - dermal, long-term - systemic	6.8571 mg/kg bw/d	0.342857
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	31.7042 mg/m³	0.449322

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found

at. http:/www.ecetoc.org/tra.

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

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Formulation
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)	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) PROC19 - Hand-mixing with intimate contact and only PPE available
Product Name	PROPYLENE CARBONATE
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

Amounts used

Type	Annual amount used in the EU
Value	60
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 365
Release fraction to air from process (initial release prior to RMM)	100%
Release fraction to wastewater from process (initial release prior to RMM)	100%
Release fraction to soil from process (initial release prior to RMM)	0%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d

Local freshwater dilution factor	10
Local marine water dilution factor	100

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

Control of worker exposure	
Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	25%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Efficiency of at least 30%
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Efficiency of at least 90%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

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	0.9 mg/l
Marine water	0.09 mg/l
Soil	0.81 mg/kg
Impact on Sewage Treatment	7400 mg/l
Intermittent release	9 mg/l

Calculation method Used ECETOC TRA model
Msafe 352.6 kg/d
Remarks Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	20 mg/kg
Worker - inhalative, long-term - local	20 mg/m³
Worker - inhalative, long-term - systemic	70.5 mg/m³
Consumer - oral, long-term - systemic	10 mg/kg
Consumer - dermal, long-term - systemic	10 mg/kg
Consumer - inhalative, long-term - systemic	17.4 mg/m³

Calculation method Used ECETOC TRA model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.6857 mg/kg bw/d	0.034286
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	9.5112 mg/m³	0.134797
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, long-term - systemic	6.8571 mg/kg bw/d	0.342857
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	31.7042 mg/m³	0.449322
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - dermal, long-term - systemic	2.7429 mg/kg bw/d	0.137143
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	31.7042 mg/m³	0.449322
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - dermal, long-term - systemic	8.4857 mg/kg bw/d	0.424286
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	33.2894 mg/m³	0.471788

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found at. http:/www.ecetoc.org/tra.

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

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Use in process chemicals Polymer production
Type	Worker
Main user group	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies)	ERC8c - Wide dispersive indoor use resulting in inclusion into or onto a matrix
Process category(ies)	PROC10 - Roller application or brushing PROC11 - Non industrial spraying PROC13 - Treatment of articles by dipping and pouring PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Product Name	PROPYLENE CARBONATE
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) - ERC8c - Wide dispersive indoor use resulting in inclusion into or onto a matrix

Amounts used

Type	Annual amount used in the EU
Value	25
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 365
Release fraction to air from process (initial release prior to RMM)	15%
Release fraction to wastewater from process (initial release prior to RMM)	1%
Release fraction to soil from process (initial release prior to RMM)	0%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d

Local freshwater dilution factor	10
Local marine water dilution factor	100

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

Control of worker exposure	
Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of controlled ventilation (5 to 10 air changes per hour) Efficiency of at least 70%
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC11 - Non industrial spraying
Covers concentrations up to	25%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
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 Efficiency of at least 90%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8c - Wide dispersive indoor use resulting in inclusion into or onto a matrix

Predicted No Effect Concentration (PNEC)

Freshwater	0.9 mg/l
Marine water	0.09 mg/l
Soil	0.81 mg/kg
Impact on Sewage Treatment	7400 mg/l
Intermittent release	9 mg/l

Calculation method Used ECETOC TRA model
Msafe 146.9 kg/d
Remarks Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	20 mg/kg
Worker - inhalative, long-term - local	20 mg/m³
Worker - inhalative, long-term - systemic	70.5 mg/m³
Consumer - oral, long-term - systemic	10 mg/kg
Consumer - dermal, long-term - systemic	10 mg/kg
Consumer - inhalative, long-term - systemic	17.4 mg/m³

Calculation method Used ECETOC TRA model
Used Riskofderm model
Used Stoffenmanager model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	5.4857 mg/kg bw/d	0.274286
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	23.7781 mg/m³	0.336992
PROC11 - Non industrial spraying	Worker - dermal, long-term - systemic	1.55 mg/kg bw/d	0.0775
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	5.93 mg/m³	0.084042
PROC13 - Treatment of articles by dipping and pouring	Worker - dermal, long-term - systemic	2.7429 mg/kg bw/d	0.137143
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	31.7042 mg/m³	0.449322
PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising	Worker - dermal, long-term - systemic	3.4286 mg/kg bw/d	0.171429
PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising	Worker - inhalative, long-term - systemic	31.7042 mg/m³	0.449322

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found at. http:/www.ecetoc.org/tra.

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

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Coatings
Type	Worker
Main user group	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies)	ERC8a - Wide dispersive indoor use of processing aids in open systems
Process category(ies)	PROC10 - Roller application or brushing PROC11 - Non industrial spraying PROC13 - Treatment of articles by dipping and pouring PROC19 - Hand-mixing with intimate contact and only PPE available
Product Name	PROPYLENE CARBONATE
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

Amounts used

Type	Annual amount used in the EU
Value	35
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 365
Release fraction to air from process (initial release prior to RMM)	100%
Release fraction to wastewater from process (initial release prior to RMM)	100%
Release fraction to soil from process (initial release prior to RMM)	0%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Environmental factors not influenced by risk management

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

Local marine water dilution factor	100

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

Control of worker exposure	
Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of controlled ventilation (5 to 10 air changes per hour) Efficiency of at least 70%
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC11 - Non industrial spraying
Covers concentrations up to	25%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Technical conditions and measures to control dispersion from source towards the worker	Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m) Ensure that spray direction is only horizontal or downward
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Efficiency of at least 90%
Organisational measures to prevent /limit releases, dispersion and exposure	Carry out in a vented booth provided with laminar airflow Regular inspection and maintenance of equipment and machines
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	25%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Technical conditions and measures to control dispersion from source towards	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Efficiency of at least 30%

the worker	
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Efficiency of at least 90%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

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	0.9 mg/l
Marine water	0.09 mg/l
Soil	0.81 mg/kg
Impact on Sewage Treatment	7400 mg/l
Intermittent release	9 mg/l

Calculation method Used ECETOC TRA model
Msafe 205.7 kg/d
Remarks Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	20 mg/kg
Worker - inhalative, long-term - local	20 mg/m³
Worker - inhalative, long-term - systemic	70.5 mg/m³
Consumer - oral, long-term - systemic	10 mg/kg
Consumer - dermal, long-term - systemic	10 mg/kg
Consumer - inhalative, long-term - systemic	17.4 mg/m³

Calculation method Used ECETOC TRA model
Used Riskofderm model
Used Stoffenmanager model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	5.4857 mg/kg bw/d	0.274286
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	23.7781 mg/m³	0.336992
PROC11 - Non industrial spraying	Worker - dermal, long-term - systemic	1.55 mg/kg bw/d	0.0775
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	5.93 mg/m³	0.084042
PROC13 - Treatment of articles by dipping and pouring	Worker - dermal, long-term - systemic	2.7429 mg/kg bw/d	0.137143
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	31.7042 mg/m³	0.449322
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - dermal, long-term - systemic	8.4857 mg/kg bw/d	0.424286
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	33.2894 mg/m³	0.471788

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found at. http:/www.ecetoc.org/tra.

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

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Use in cleaning agents
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 PROC11 - Non industrial spraying PROC13 - Treatment of articles by dipping and pouring
Product Name	PROPYLENE CARBONATE
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

Amounts used

Type	Annual amount used in the EU
Value	25
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 365
Release fraction to air from process (initial release prior to RMM)	100%
Release fraction to wastewater from process (initial release prior to RMM)	100%
Release fraction to soil from process (initial release prior to RMM)	0%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Environmental factors not influenced by risk management

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

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

Control of worker exposure	
Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of controlled ventilation (5 to 10 air changes per hour) Efficiency of at least 70%
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC11 - Non industrial spraying
Covers concentrations up to	25%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
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 Efficiency of at least 90%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

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	0.9 mg/l
Marine water	0.09 mg/l
Soil	0.81 mg/kg
Impact on Sewage Treatment	7400 mg/l
Intermittent release	9 mg/l

Calculation method Used ECETOC TRA model
Msafe 146.9 kg/d
Remarks Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic 20 mg/kg
Worker - inhalative, long-term - local 20 mg/m³
Worker - inhalative, long-term - systemic 70.5 mg/m³
Consumer - oral, long-term - systemic 10 mg/kg
Consumer - dermal, long-term - systemic 10 mg/kg
Consumer - inhalative, long-term - systemic 17.4 mg/m³

Calculation method Used ECETOC TRA model
Used Riskofderm model
Used Stoffenmanager model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	5.4857 mg/kg bw/d	0.274286
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	23.7781 mg/m³	0.336992
PROC11 - Non industrial spraying	Worker - dermal, long-term - systemic	1.55 mg/kg bw/d	0.0775
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	5.93 mg/m³	0.084042
PROC13 - Treatment of articles by dipping and pouring	Worker - dermal, long-term - systemic	2.7429 mg/kg bw/d	0.137143
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	31.7042 mg/m³	0.449322

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found at. http:/www.ecetoc.org/tra.

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

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Functional fluids
Type	Worker
Main user group	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies)	ERC8a - Wide dispersive indoor use of processing aids in open systems
Process category(ies)	PROC17 - Lubrication at high energy conditions and in partly open process PROC18 - Greasing at high energy conditions PROC20 - Heat and pressure transfer fluids in dispersive, professional use but closed systems
Product Name	PROPYLENE CARBONATE
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

Amounts used

Type	Annual amount used in the EU
Value	40
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 365
Release fraction to air from process (initial release prior to RMM)	100%
Release fraction to wastewater from process (initial release prior to RMM)	100%
Release fraction to soil from process (initial release prior to RMM)	0%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Environmental factors not influenced by risk management

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

Local marine water dilution factor	100

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

Control of worker exposure	
Process category(ies)	PROC17 - Lubrication at high energy conditions and in partly open process
Covers concentrations up to	25%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of controlled ventilation (5 to 10 air changes per hour) Efficiency of at least 70%
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC18 - Greasing at high energy conditions
Covers concentrations up to	25%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of controlled ventilation (5 to 10 air changes per hour) Efficiency of at least 70%
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC20 - Heat and pressure transfer fluids in dispersive, professional use but closed systems
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

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	0.9 mg/l
Marine water	0.09 mg/l
Soil	0.81 mg/kg
Impact on Sewage Treatment	7400 mg/l
Intermittent release	9 mg/l

Calculation method Used ECETOC TRA model
Msafe 235 kg/d
Remarks Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	20 mg/kg
Worker - inhalative, long-term - local	20 mg/m³
Worker - inhalative, long-term - systemic	70.5 mg/m³
Consumer - oral, long-term - systemic	10 mg/kg
Consumer - dermal, long-term - systemic	10 mg/kg
Consumer - inhalative, long-term - systemic	17.4 mg/m³

Calculation method Used ECETOC TRA model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC17 - Lubrication at high energy conditions and in partly open process	Worker - dermal, long-term - systemic	3.2914 mg/kg bw/d	0.164571
PROC17 - Lubrication at high energy conditions and in partly open process	Worker - inhalative, long-term - systemic	28.5337 mg/m³	0.40439
PROC18 - Greasing at high energy conditions	Worker - dermal, long-term - systemic	8.2286 mg/kg bw/d	0.411429
PROC18 - Greasing at high energy conditions	Worker - inhalative, long-term - systemic	28.5337 mg/m³	0.40439
PROC20 - Heat and pressure transfer fluids in dispersive, professional use but closed systems	Worker - dermal, long-term - systemic	1.7143 mg/kg bw/d	0.085714
PROC20 - Heat and pressure transfer fluids in dispersive, professional use but closed systems	Worker - inhalative, long-term - systemic	15.8521 mg/m³	0.224661

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found at. http:/www.ecetoc.org/tra.

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

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Functional fluids
Type	Worker
Main user group	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies)	ERC8d - Wide dispersive outdoor use of processing aids in open systems
Process category(ies)	PROC17 - Lubrication at high energy conditions and in partly open process PROC18 - Greasing at high energy conditions PROC20 - Heat and pressure transfer fluids in dispersive, professional use but closed systems
Product Name	PROPYLENE CARBONATE
Sector(s) of use	SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

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

Amounts used

Type	Annual amount used in the EU
Value	5
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 365
Release fraction to air from process (initial release prior to RMM)	100%
Release fraction to wastewater from process (initial release prior to RMM)	100%
Release fraction to soil from process (initial release prior to RMM)	20%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Environmental factors not influenced by risk management

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

Local marine water dilution factor	100

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

Control of worker exposure	
Process category(ies)	PROC17 - Lubrication at high energy conditions and in partly open process
Covers concentrations up to	25%
Physical form of product	Liquid
Vapour pressure	6 Pa
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). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Efficiency of at least 90%
Indoor/Outdoor use	Outdoor
Assumes process temperature up to	20 C

Process category(ies)	PROC18 - Greasing at high energy conditions
Covers concentrations up to	25%
Physical form of product	Liquid
Vapour pressure	6 Pa
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). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Efficiency of at least 90%
Indoor/Outdoor use	Outdoor
Assumes process temperature up to	20 C

Process category(ies)	PROC20 - Heat and pressure transfer fluids in dispersive, professional use but closed systems
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Outdoor
Assumes process temperature up to	20 C

Section 3 - Exposure estimation

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

Predicted No Effect Concentration (PNEC)

Freshwater	0.9 mg/l
Marine water	0.09 mg/l
Soil	0.81 mg/kg
Impact on Sewage Treatment	7400 mg/l

Intermittent release 9 mg/l

Calculation method Used ECETOC TRA model
Msafe 29.4 kg/d
Remarks Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic 20 mg/kg
Worker - inhalative, long-term - local 20 mg/m³
Worker - inhalative, long-term - systemic 70.5 mg/m³
Consumer - oral, long-term - systemic 10 mg/kg
Consumer - dermal, long-term - systemic 10 mg/kg
Consumer - inhalative, long-term - systemic 17.4 mg/m³

Calculation method Used ECETOC TRA model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC17 - Lubrication at high energy conditions and in partly open process	Worker - dermal, long-term - systemic	1.6457 mg/kg bw/d	0.082286
PROC17 - Lubrication at high energy conditions and in partly open process	Worker - inhalative, long-term - systemic	39.9472 mg/m³	0.566146
PROC18 - Greasing at high energy conditions	Worker - dermal, long-term - systemic	0.8229 mg/kg bw/d	0.041143
PROC18 - Greasing at high energy conditions	Worker - inhalative, long-term - systemic	66.5787 mg/m³	0.943576
PROC20 - Heat and pressure transfer fluids in dispersive, professional use but closed systems	Worker - dermal, long-term - systemic	1.7143 mg/kg bw/d	0.085714
PROC20 - Heat and pressure transfer fluids in dispersive, professional use but closed systems	Worker - inhalative, long-term - systemic	11.0965 mg/m³	0.157263

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found at. http:/www.ecetoc.org/tra.

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

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Plant protection 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
Process category(ies)	PROC10 - Roller application or brushing PROC11 - Non industrial spraying PROC13 - Treatment of articles by dipping and pouring
Product Name	PROPYLENE CARBONATE
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

Amounts used

Type	Annual amount used in the EU
Value	290
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 365
Release fraction to air from process (initial release prior to RMM)	100%
Release fraction to wastewater from process (initial release prior to RMM)	100%
Release fraction to soil from process (initial release prior to RMM)	0%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Environmental factors not influenced by risk management

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

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

Control of worker exposure	
Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of controlled ventilation (5 to 10 air changes per hour) Efficiency of at least 70%
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC11 - Non industrial spraying
Covers concentrations up to	25%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
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 Efficiency of at least 90%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

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	0.9 mg/l
Marine water	0.09 mg/l
Soil	0.81 mg/kg
Impact on Sewage Treatment	7400 mg/l
Intermittent release	9 mg/l

Calculation method Used ECETOC TRA model
Msafe 1704 kg/d
Remarks Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic 20 mg/kg
Worker - inhalative, long-term - local 20 mg/m³
Worker - inhalative, long-term - systemic 70.5 mg/m³
Consumer - oral, long-term - systemic 10 mg/kg
Consumer - dermal, long-term - systemic 10 mg/kg
Consumer - inhalative, long-term - systemic 17.4 mg/m³

Calculation method Used ECETOC TRA model
Used Riskofderm model
Used Stoffenmanager model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	5.4857 mg/kg bw/d	0.274286
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	23.7781 mg/m³	0.336992
PROC11 - Non industrial spraying	Worker - dermal, long-term - systemic	1.55 mg/kg bw/d	0.0775
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	5.93 mg/m³	0.084042
PROC13 - Treatment of articles by dipping and pouring	Worker - dermal, long-term - systemic	2.7429 mg/kg bw/d	0.137143
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	31.7042 mg/m³	0.449322

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found at. http:/www.ecetoc.org/tra.

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

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Use in laboratories
Type	Worker
Main user group	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)	PROC15 - Use as laboratory reagent
Product Name	PROPYLENE CARBONATE
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

Amounts used

Type	Annual amount used in the EU
Value	0.1
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 365
Release fraction to air from process (initial release prior to RMM)	100%
Release fraction to wastewater from process (initial release prior to RMM)	100%
Release fraction to soil from process (initial release prior to RMM)	0%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Environmental factors not influenced by risk management

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

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

Control of worker exposure	
Process category(ies)	PROC15 - Use as laboratory reagent
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	6 Pa
Use frequency	Covers daily exposures up to 8 hours (unless stated differently). 5 days per week
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

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** 0.9 mg/l
- **Marine water** 0.09 mg/l
- **Soil** 0.81 mg/kg
- **Impact on Sewage Treatment** 7400 mg/l
- **Intermittent release** 9 mg/l

Calculation method Used ECETOC TRA model
Msafe 0.587589 kg/d
Remarks Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

- **Worker - dermal, long-term - systemic** 20 mg/kg
- **Worker - inhalative, long-term - local** 20 mg/m³
- **Worker - inhalative, long-term - systemic** 70.5 mg/m³
- **Consumer - oral, long-term - systemic** 10 mg/kg
- **Consumer - dermal, long-term - systemic** 10 mg/kg
- **Consumer - inhalative, long-term - systemic** 17.4 mg/m³

Calculation method Used ECETOC TRA model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC15 - Use as laboratory reagent	Worker - dermal, long-term - systemic	0.3429 mg/kg bw/d	0.017143
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	15.8521 mg/m³	0.224661

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found at. http:/www.ecetoc.org/tra.

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

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Coatings
Type	Consumer
Main user group	Consumer uses: Private households (= general public = consumers)
Environmental release category(ies)	ERC8a - Wide dispersive indoor use of processing aids in open systems
Product category(ies)	PC9a - Coatings and paints, thinners, paint removers PC15 - Non-metal-surface treatment products
Product Name	PROPYLENE CARBONATE
Sector(s) of use	SU21 - Consumer uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

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

Amounts used

Type	Annual amount used in the EU
Value	0.5
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 365
Release fraction to air from process (initial release prior to RMM)	100%
Release fraction to wastewater from process (initial release prior to RMM)	100%
Release fraction to soil from process (initial release prior to RMM)	0%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Environmental factors not influenced by risk management

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

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

Control of consumer exposure	
Product categories [PC]	PC9a - Coatings and paints, thinners, paint removers PC15 - Non-metal-surface treatment products
Product (sub) category(ies)	Waterborne latex wall paint
Covers concentrations up to	10%
Vapour pressure	6 Pa
Exposure duration	132 minutes per day
Use frequency	36 times per year
Release area	150000 cm2
Exposure route	Inhalation exposure Dermal
Exposure duration	120 min
Covers skin contact area up to	100%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C
Use in room with a volume of minimum	20 m3
Minimum room ventilation rate for handling/application (air changes per hour)	0.6
Remarks	Body weight 65 kg

Product categories [PC]	PC9a - Coatings and paints, thinners, paint removers PC15 - Non-metal-surface treatment products
Product (sub) category(ies)	Removers (paint-, glue-, wall paper-, sealant-remover)
Covers concentrations up to	20%
Vapour pressure	6 Pa
Amounts used	Amount per use 0.5 g
Exposure duration	120 minutes per day
Use frequency	36 times per year
Release area	20000 cm2
Exposure route	Inhalation exposure Dermal
Exposure duration	120 min
Covers skin contact area up to	100%
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C
Use in room with a volume of minimum	20 m3
Minimum room ventilation rate for handling/application (air changes per hour)	0.6
Remarks	Body weight 65 kg

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	0.9 mg/l
Marine water	0.09 mg/l
Soil	0.81 mg/kg
Impact on Sewage Treatment	7400 mg/l
Intermittent release	9 mg/l

Calculation method	Used ECETOC TRA model
Msafe	2.9 kg/d

Remarks Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	20 mg/kg
Worker - inhalative, long-term - local	20 mg/m³
Worker - inhalative, long-term - systemic	70.5 mg/m³
Consumer - oral, long-term - systemic	10 mg/kg
Consumer - dermal, long-term - systemic	10 mg/kg
Consumer - inhalative, long-term - systemic	17.4 mg/m³

Calculation method The Consexpo model has been used to estimate consumer exposures unless otherwise indicated

Product category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PC9a - Coatings and paints, thinners, paint removers PC15 - Non-metal-surface treatment products	Consumer - dermal, long-term - systemic	0.5463 mg/kg bw/d	0.054623
PC9a - Coatings and paints, thinners, paint removers PC15 - Non-metal-surface treatment products	Consumer - inhalative, long-term - systemic	0.2524 mg/m³	0.014504
PC9a - Coatings and paints, thinners, paint removers PC15 - Non-metal-surface treatment products	Consumer - dermal, long-term - systemic	0.1517 mg/kg bw/d	0.015174
PC9a - Coatings and paints, thinners, paint removers PC15 - Non-metal-surface treatment products	Consumer - inhalative, long-term - systemic	1.3898 mg/m³	0.079873

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found at. http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp.

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

Product Name	PROPYLENE CARBONATE
Pure substance/mixture	Substance
REACH registration number	01-2119537232-48-XXXX
CAS No	108-32-7
EC No (EU Index No)	203-572-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Coatings
Type	Consumer
Main user group	Consumer uses: Private households (= general public = consumers)
Environmental release category(ies)	ERC8d - Wide dispersive outdoor use of processing aids in open systems
Product category(ies)	PC9a - Coatings and paints, thinners, paint removers PC15 - Non-metal-surface treatment products
Product Name	PROPYLENE CARBONATE
Sector(s) of use	SU21 - Consumer uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

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

Amounts used

Type	Annual amount used in the EU
Value	0.5
Units	t(ons)/year

Other operational conditions of use affecting environmental exposure

Emission days	>= 365
Release fraction to air from process (initial release prior to RMM)	100%
Release fraction to wastewater from process (initial release prior to RMM)	100%
Release fraction to soil from process (initial release prior to RMM)	20%

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
Assumed domestic sewage treatment plant flow	2000 m3/d

Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d

Local freshwater dilution factor	10
Local marine water dilution factor	100

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations

Control of consumer exposure	
Product categories [PC]	PC9a - Coatings and paints, thinners, paint removers PC15 - Non-metal-surface treatment products
Product (sub) category(ies)	Waterborne latex wall paint
Covers concentrations up to	10%
Vapour pressure	6 Pa
Exposure duration	132 minutes per day
Use frequency	36 times per year
Release area	150000 cm2
Exposure route	Inhalation exposure Dermal
Exposure duration	120 min
Covers skin contact area up to	100%
Indoor/Outdoor use	Outdoor
Assumes process temperature up to	20 C
Use in room with a volume of minimum	20 m3
Minimum room ventilation rate for handling/application (air changes per hour)	0.6
Remarks	Body weight 65 kg

Product categories [PC]	PC9a - Coatings and paints, thinners, paint removers PC15 - Non-metal-surface treatment products
Product (sub) category(ies)	Removers (paint-, glue-, wall paper-, sealant-remover)
Covers concentrations up to	20%
Vapour pressure	6 Pa
Amounts used	Amount per use 0.5 g
Exposure duration	120 minutes per day
Use frequency	36 times per year
Release area	20000 cm2
Exposure route	Inhalation exposure Dermal
Exposure duration	120 min
Covers skin contact area up to	100%
Indoor/Outdoor use	Outdoor
Assumes process temperature up to	20 C
Use in room with a volume of minimum	20 m3
Minimum room ventilation rate for handling/application (air changes per hour)	0.6
Remarks	Body weight 65 kg

Section 3 - Exposure estimation

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

Predicted No Effect Concentration (PNEC)

- **Freshwater** 0.9 mg/l
- **Marine water** 0.09 mg/l
- **Soil** 0.81 mg/kg
- **Impact on Sewage Treatment** 7400 mg/l

Intermittent release 9 mg/l

Calculation method Used ECETOC TRA model
Msafe 2.9 kg/d
Remarks Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion)

Environment	predicted exposure level	Risk characterisation ratio (RCR)
		0.000933

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic 20 mg/kg
Worker - inhalative, long-term - local 20 mg/m³
Worker - inhalative, long-term - systemic 70.5 mg/m³
Consumer - oral, long-term - systemic 10 mg/kg
Consumer - dermal, long-term - systemic 10 mg/kg
Consumer - inhalative, long-term - systemic 17.4 mg/m³

Calculation method The Consexpo model has been used to estimate consumer exposures unless otherwise indicated

Product category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PC9a - Coatings and paints, thinners, paint removers PC15 - Non-metal-surface treatment products	Consumer - dermal, long-term - systemic	0.5463 mg/kg bw/d	0.054623
PC9a - Coatings and paints, thinners, paint removers PC15 - Non-metal-surface treatment products	Consumer - inhalative, long-term - systemic	0.2524 mg/m³	0.014504
PC9a - Coatings and paints, thinners, paint removers PC15 - Non-metal-surface treatment products	Consumer - dermal, long-term - systemic	0.1517 mg/kg bw/d	0.015174
PC9a - Coatings and paints, thinners, paint removers PC15 - Non-metal-surface treatment products	Consumer - inhalative, long-term - systemic	1.3898 mg/m³	0.079873

Section 4 - Guidance to check compliance with the exposure scenario

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

ECHA guidance for downstream users. Further information on the assumptions contained in this exposure scenario can be found at. http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp.