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

1.1 Product identifier

Trade name/designation	Methyl chloride
Art-Nr(n).	2600, 70260
Substance name	Chloromethane (Methyl chloride)
Index No	602-001-00-7
EC No	200-817-4
REACH No.	01-2119493708-22
CAS No	74-87-3

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

Sector of uses [SU]
SU3 Industrial uses
SU8 Manufacture of bulk, large scale chemicals (including petroleum products)
SU9 Manufacture of fine chemicals
SU11 Manufacture of rubber products
SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
SU24 Scientific research and development

Process categories [PROC]
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)
PROC15 Use as laboratory reagent

Environmental release categories [ERC]
ERC1 Manufacture of substances
ERC4 Industrial use of processing aids in processes and products, not becoming part of articles
ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)
ERC8b Widespread use of reactive processing aid (no inclusion into or onto article, indoor)
ERC8e Widespread use of reactive processing aid (no inclusion into or onto article, outdoor)

Product Categories [PC]
PC19 Intermediate (precursor)
PC21 Laboratory chemicals
PC35 Washing and cleaning products
PC40 Extraction agents

Use of the substance/mixture
Basic substance
Intermediate.

1.3 Details of the supplier of the safety data sheet

Supplier
GHC Gerling, Holz & Co. Handels GmbH
Ruhrstraße 113
D-22761 Hamburg
Telephone +49 40 853 123 0
E-mail hamburg@ghc.de
Website www.ghc.com

Department responsible for information:
GHC Gerling, Holz & Co. Handels GmbH
Telephone +49 40 853 123 0

E-mail (competent person):
msds@ghc.de

1.4 Emergency telephone number

EN: Poison Information Center Mainz +49 6131 19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]	Classification procedure
Flam. Gas 1A, H220	
Press. Gas (Liq.), H280	
Carc. 2, H351	
Repr. 2, H361f	
STOT RE 2, H373	

Hazard statements for physical hazards
H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.

Hazard statements for health hazards
H351 Suspected of causing cancer by inhalation.
H361f Suspected of damaging fertility.
H373 May cause damage to organs through prolonged or repeated exposure by inhalation.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP]

Hazard pictograms

GHS02

GHS08

Signal word
Danger

Hazard statements
H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
H351 Suspected of causing cancer by inhalation.
H361f Suspected of damaging fertility.
H373 May cause damage to organs through prolonged or repeated exposure by inhalation.

Precautionary statements
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 Do not breathe gas/vapours.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 In case of leakage, eliminate all ignition sources.
P403 Store in a well-ventilated place.

Supplemental hazard information
Please return container with residual pressure.

2.3 Other hazards

Adverse human health effects and symptoms
Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.
The inhalation of gas / vapour in high concentrations may cause cardiac arrhythmia.
Contact with liquid may cause cold burns/frostbite.

Other adverse effects
The substance/mixture does not contain components identified as having endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1% or more.

Results of PBT and vPvB assessment
The substance/mixture does not contain components meeting the PBT/vPvB criteria of the Reach Regulation, Annex XIII, at levels of 0.1% or higher.

SECTION 3: Composition / information on ingredients

3.1 Substances

Substance name	Chloromethane (Methyl chloride)
Index No	602-001-00-7
EC No	200-817-4
REACH No.	01-2119493708-22
CAS No	74-87-3
ATE	ATE(inhalation gas): > 21800 mg/m³

Additional information
Content: >= 99,9 %

3.2 Mixtures

not applicable

SECTION 4: First aid measures

4.1 Description of first aid measures

General information
Remove contaminated, saturated clothing immediately.
First aider: Pay attention to self-protection!
Call a physician immediately.

Following inhalation
Remove casualty to fresh air and keep warm and at rest.
In the event of pulmonary irritation treat initially with corticoid spray, e.g. Ventolair- or Pulmicort- metered-dose aerosol (Ventolair and Pulmicort are registrated trademarks).
In case of respiratory standstill give artificial respiration by respiratory bag (Ambu bag) or respirator. Obtain medical assistance.

Following skin contact
In case of skin contact rinse with warm water.
In case of frostbite, wash with plenty of water; do not remove clothing.
In case of frostbite rinse with lukewarm (not hot) water for at least 15 minutes. Do not remove clothing frozen to the skin.
Thaw with lukewarm water. Apply a sterile dressing. Obtain medical assistance.

After eye contact
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical assistance.

Following ingestion
Ingestion is not considered a potential route of exposure.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms
Unconsciousness
Impairment of vision
Dizziness
Vomiting
Headache

Effects
Pulmonary oedema
Made worse through the drinking of alcohol beverages

4.3 Indication of any immediate medical attention and special treatment needed

Notes for the doctor
Treat symptomatically.
Do not apply drugs of the adrenaline ephedrine group.
Pulmonary oedema prophylaxis.
Keep under medical supervision for at least 24 hours.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Extinguishing powder
Foam
Water spray jet

Unsuitable extinguishing media
Carbon dioxide (CO_2)
Full water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products
In case of fire formation of dangerous gases possible.
Carbon monoxide
Carbon dioxide (CO_2)
Hydrogen chloride (HCl)
Phosgene

5.3 Advice for firefighters

Special protective equipment for firefighters
Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information
If possible, shut off gas valves and move containers to a safe location.
Use water spray jet to protect personnel and to cool endangered containers.
Exposure to fire may cause rupture / explosion of the containers.
Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.
Dispose of fire residues and contaminated extinguishing water in accordance with local, official regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Use personal protection equipment.
Leave the danger area.
Keep people away and stay on the upwind side.

For emergency responders
Personal protection by wearing close-fitting protective clothing and breathing apparatus.
Pay attention to extension of gas especially at ground (heavier than air) and in direction of the wind.
Eliminate all ignition sources if safe to do so.
Remove persons to safety.

6.2 Environmental precautions

If possible, stop flow of product.
Do not allow to enter into soil/subsoil.
Do not allow to enter into surface water or drains.

6.3 Methods and material for containment and cleaning up

For containment
If necessary, secure leaky pressure receptacles using a salvage container.
Prevent the liquid from spreading over a wide area (set up barriers, cover sewage systems).
Limit expansion of the gas (water spray jet).

For cleaning up
Leave to vapourize.
Provide adequate ventilation.

6.4 Reference to other sections

Disposal: see section 13
Personal protection equipment: see section 8

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures
Use only in well-ventilated areas.
Transfer and handle product only in closed systems.
Usual measures for fire prevention.
Containers' temperature should not be increased above 50 °C.
The working pressure in the receptacle must not exceed the saturation vapour pressure of the pure product resulting at a temperature of 50 °C.
Prevent cylinders from falling over.
Take precautionary measures against static discharges. Ground barrels and installations. Use only antistatically equipped (spark-free) tools.
Use explosion-proof machinery, apparatus, ventilation facilities, tools etc.
Ensure valve protection device is correctly fitted.
Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
Open valve slowly to avoid pressure shock.
Do not allow backflow into the container.
Entering of water into the container must be prevented.
No water to valves, flanges and other fittings.
Purging of pipes and valves with inert gases - to avoid: water, solvents.

Advices on general occupational hygiene
When using do not eat, drink, smoke, sniff.
Wash hands before breaks and after work.
Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels
All regulations and local requirements for the storage of containers have to be respected.
Keep container tightly closed and in a well-ventilated place.
Containers' temperature should not be increased above 50 °C.
Prevent cylinders from falling over.
Only use containers specifically approved for the substance/product.
Information on suitable materials for receptacles and valves see ISO 11114.

Materials to avoid
Do not store together with explosives.
Do not store together with flammable liquids.
Do not store together with flammable solids.
Do not store together with pyrophoric and self-heating substances.
Do not store together with oxidizing liquids or oxidizing solids.
Do not store together with toxic liquids or toxic solids.
Do not store together with infectious substances.
Do not store together with radioactive material.
Do not store together with food or feed.

7.3 Specific end use(s)

Recommendation
See section 1.2
Exposure scenarios (ES) see annex to this safety data sheet.

* SECTION 8: Exposure controls/personal protection

* 8.1 Control parameters

*** Occupational exposure limit values**

CAS No	EC No	Substance name	occupational exposure limit value
74-87-3	200-817-4	Chloromethane	20 [ml/m³(ppm)] 42 [mg/m³] (IE)

DNEL worker

CAS No	Substance name	DNEL value	DNEL type	Remark
74-87-3	Chloromethane (Methyl chloride)	12.5 mg/m³	long-term inhalative (systemic)	Assessment factor 12.5

PNEC

CAS No	Substance name	PNEC Value	PNEC type	Remark
74-87-3	Chloromethane (Methyl chloride)	0.2 mg/L	aquatic, freshwater	Assessment factor 1000, assessment factor.
74-87-3	Chloromethane (Methyl chloride)	2 mg/L	aquatic, intermittent release	Assessment factor 100, assessment factor.
74-87-3	Chloromethane (Methyl chloride)	0.02 mg/L	aquatic, marine water	Assessment factor 10000, assessment factor.
74-87-3	Chloromethane (Methyl chloride)	0.98 mg/kg dw	sediment, freshwater	
74-87-3	Chloromethane (Methyl chloride)	0.098 mg/kg dw	sediment, marine water	
74-87-3	Chloromethane (Methyl chloride)	0.3 mg/L	sewage treatment plant (STP)	assessment factor.
74-87-3	Chloromethane (Methyl chloride)	0.14 mg/kg dw	soil	

8.2 Exposure controls

Appropriate engineering controls

Technical measures to prevent exposure
Transfer and handle only in enclosed systems.

Personal protection equipment

Eye/face protection
Protective goggles according to EN 166, in case of increased risk add protective face shield.

Hand protection
Safety gloves according to EN 374:
Glove material specification [make/type, thickness, permeation time/life, wetting resistance]: IIR, >= 0,5 mm, > 10 min

Body protection:
Safety shoes with steel toecap.
Body covering work clothing or chemical resistant suit at increased risk.

Respiratory protection
Keep self contained breathing apparatus readily available for emergency use.
Respiratory protection necessary at:
high concentrations
Respiratory protection complying with EN 137.
Do not use any filter apparatus.
In case of rescue and maintenance activities in storage containers use environment-independent breathing apparatus because of risk of suffocation due to displacement of oxygen.

Thermal hazards
Use cold-resistant protective equipment.

Environmental exposure controls

Remark
Prevent release to the environment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state
Gaseous / liquefied under pressure.

Colour
colourless

Odour
like:
Ether

Safety relevant basis data

	Value	Method	Source, Remark
Odour threshold:			not determined
Melting point/freezing point			not applicable
Boiling point or initial boiling point and boiling range	-23.8 °C		
flammability			inflammable
Lower and upper explosion limit	Upper explosion limit 19 Vol-%		
Lower and upper explosion limit	Lower explosion limit 7.6 Vol-%		
Flash point			not applicable
Auto-ignition temperature	625 °C		
Decomposition temperature			No decomposition if used as directed.
pH			not applicable
Viscosity			not applicable
Solubility(ies)	Water solubility 5 g/L (20°C) pressure 1013 mbar		
Solubility(ies)			soluble in most organic solvents
Partition coefficient n-octanol/water (log value)	0.91		
Vapour pressure	4900 hPa (20°C)		
Density and/or relative density			not applicable
Relative vapour density	1.78		air = 1
particle characteristics			not applicable

9.2 Other information

Information with regard to physical hazard classes

Gases under pressure

Safety characteristics

	Value	Method, Result	Source, Remark
Critical temperature	143 °C		

Other information
Vapours are heavier than air.

SECTION 10: Stability and reactivity

10.1 Reactivity

May form an explosive mixture with air.

10.2 Chemical stability

The substance is chemically stable under recommended conditions of storage, use and temperature.

10.3 Possibility of hazardous reactions

Reactions with numerous chemical compounds.
Reactions with strong oxidising agents.
Reactions with oxygen.
Reactions with alkali metals.
Reactions with earth alkali metals.

10.4 Conditions to avoid

Heat sources / heat - risk of bursting.
Ignition sources, open flames, glowing metal surfaces, etc.

10.5 Incompatible materials

Acetylene
Boron trifluoride
Bromine triflouride
Fluorine
Aluminium / Aluminium alloys.

10.6 Hazardous decomposition products

When handled and stored appropriately, no dangerous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Animal data

	Effective dose	Method,Evaluation	Source, Remark
Acute oral toxicity			Study technically not feasible.
Acute dermal toxicity			Study technically not feasible.
Acute inhalation toxicity	CAS No74-87-3 Chloromethane (Methyl chloride) Acute inhalation toxicity (gas) LC50: > 21800 mg/m³ Species Rat Exposure time 4 h	OECD 403	

Assessment/classification
Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Other information
Study technically not feasible.

Serious eye damage/irritation

Other information
Study technically not feasible.

Sensitisation to the respiratory tract

Other information
No data available

Skin sensitisation

Other information
Study technically not feasible.

Germ cell mutagenicity

	Value	Method	Result / Evaluation	Remark
In vitro mutagenicity/genotoxicity		OECD 476	positive	
In vivo mutagenicity/genotoxicity		OECD 478	negative	

Assessment/classification
Based on available data, the classification criteria are not met.

Carcinogenicity

Animal data

	Value	Method	Result / Evaluation	Remark
Carcinogenicity	inhalative NOAEC 225 ppm Species Mouse Exposure duration 2 a	OECD 453		

Assessment/classification
Suspected of causing cancer.

Reproductive toxicity

Animal data

	Value	Method	Result / Evaluation	Remark
Reproductive toxicity	inhalative NOAEC 150 ppm	OECD 416		

Assessment/classification
Suspected of damaging fertility.

STOT-single exposure

STOT SE 1 and 2

Assessment/classification
Based on available data, the classification criteria are not met.

STOT-repeated exposure

Animal data

	Effective dose	Method	Specific effects:	Organs affected:	Source, Remark
Inhalative specific target organ toxicity (repeated exposure)	NOAEL(C): 225 ppm Species Rat	OECD 453			

Assessment/classification
May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

Remark
Study technically not feasible.

11.2 Information on other hazards

Additional information
May be absorbed through the skin.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity

	Effective dose	Method,Evaluation	Source, Remark
Acute (short-term) fish toxicity	LC50: 270 mg/L Species Menicia beryllina Test duration 96 h		
Chronic (long-term) fish toxicity	not determined		
Acute (short-term) toxicity to crustacea	EC50 200 mg/L Species Daphnia magna (Big water flea) Test duration 48 h	OECD 202	
Chronic (long-term) toxicity to aquatic invertebrate	not determined		
Acute (short-term) toxicity to algae and cyanobacteria	TTC 550 mg/L Species Microcystis aeruginosa (Blaualge) Test duration 168 h		
Chronic (long-term) toxicity to aquatic algae and cyanobacteria	not determined		
Toxicity to other aquatic plants/organisms	not determined		
Toxicity to microorganisms	TTC 500 mg/L Species Pseudomonas putida Test duration 24 h		

12.2 Persistence and degradability

	Value	Method	Source, Remark
Biodegradation	Degradation rate 77 % Test duration 28 d	OECD 301 D	CAS No74-87-3 Chloromethane (Methyl chloride)

Assessment/classification
Readily biodegradable (according to OECD criteria).

12.3 Bioaccumulative potential

	Value	Method	Source, Remark
Bioconcentration factor (BCF)	Bioconcentration factor (BCF) 3.16		calculated

Assessment/classification
Based on the n-octanol/water partition coefficient accumulation in organisms is not expected.

12.4 Mobility in soil

	Value	Distribution	Transport type	Method	Remark
Half-life time in soil	13.22			KOC value	

12.5 Results of PBT and vPvB assessment

The substance/mixture does not contain components meeting the PBT/vPvB criteria of the Reach Regulation, Annex XIII, at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

	Effective dose	Method,Evaluation	Source, Remark
Endocrine disrupting properties			See section 2.3

12.7 Other adverse effects

	Value	Method	Source, Remark
Ozone depletion potential (ODP):	0.02		
Global warming potential (GWP)	6		

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste codes/waste designations according to EWC/AVV

Waste code product	Waste name
160504 *	gases in pressure containers (including halons) containing hazardous substances

Appropriate disposal / Product
Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.
Prevent release to the environment. No disposal via the sewage.

Appropriate disposal / Package
Transportable pressure equipment (empty, residual pressure): Return to supplier / manufacturer.

SECTION 14: Transport information

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1 UN number or ID number	UN 1063	UN 1063	UN 1063
14.2 UN proper shipping name	METHYL CHLORIDE	METHYL CHLORIDE	Methyl chloride
14.3 Transport hazard class(es)	2.1	2.1	2.1
14.4 Packing group	-	-	-
14.5 Environmental hazards	No	No	No

14.6 Special precautions for user

The protective measures listed in Sections 6, 7 and 8 of the Safety Data Sheet have to be considered.

14.7 Maritime transport in bulk according to IMO instruments

No carriage in bulk.

Land transport (ADR/RID)

UN number or ID number	UN 1063
UN proper shipping name	METHYL CHLORIDE
Transport hazard class(es)	2.1
Hazard label(s)	2.1
Classification code	2F
Packing group	-
Environmental hazards	No
Limited quantity (LQ)	0
Special provisions	662
Tunnel restriction code	B/D

Sea transport (IMDG)

UN number or ID number	UN 1063
UN proper shipping name	METHYL CHLORIDE
Transport hazard class(es)	2.1
Packing group	-
Environmental hazards	No
Limited quantity (LQ)	0
Marine pollutant	No

EmS	F-D, S-U

Air transport (ICAO-TI / IATA-DGR)

UN number or ID number	UN 1063
UN proper shipping name	Methyl chloride
Transport hazard class(es)	2.1
Packing group	-
Environmental hazards	No

SECTION 15: Regulatory information

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

EU legislation

Restrictions of occupation
Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).

Other regulations (EU)

To follow:
Regulation (EU) 2024/590 on substances that deplete the ozone layer.
Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex XVII No 40.
Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances.
National and local regulations concerning chemicals shall be observed.

Directive 2010/75/EU on industrial emissions [Industrial Emissions Directive] VOC
VOC-value 99.9 %

15.2 Chemical Safety Assessment

National regulations

For this substance a chemical safety assessment has been carried out.

SECTION 16: Other information

Key literature references and sources for data
Information from our suppliers and data from the "GESTIS Substances Database" and the "Registered Substances" database of the European Chemicals Agency (ECHA) were used to create this safety data sheet.

Additional information
The information contained herein is based on the state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.

Relevant H- and EUH-phrases (Number and full text)

H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.

Indication of changes
* Data changed compared with the previous version

1. Short title of Exposure Scenario: Manufacture

Main User Groups	:	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	:	SU 3, SU 8,9: Industrial uses: Uses of substances as such or in preparations at industrial sites, Manufacture of bulk, large scale substances (including petroleum products); manufacture of fine chemicals
Environmental Release Categories	:	ERC1: Manufacture of the substance
Process categories	:	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) PROC15: Use as laboratory reagent

2.1 Contributing scenario controlling environmental exposure for: ERC1: Manufacture of the substance

Amount used

Annual site tonnage	:	99999 tonnes/year
Fraction of EU tonnage used in region:	:	100 %
Daily amount per site	:	333330 kg/day

Environment factors not influenced by risk management

Dilution Factor (River)	:	10
Dilution Factor (Coastal Areas)	:	100

Other given operational conditions affecting environmental exposure

Number of emission days per year	:	300
Emission or Release Factor: Air	:	5 %
Emission or Release Factor: Water	:	0,00075 %
Emission or Release Factor: Soil	:	0,01 %

Technical conditions and measures / Organizational measures

Remarks	:	Organizational measures to prevent/limit release from the site

2.2 Contributing scenario controlling worker exposure for: PROC1: Use in closed process, no likelihood of exposure

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : > 4 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

2.3 Contributing scenario controlling worker exposure for: PROC2,: Use in closed, continuous process with occasional controlled exposure, Option 1

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : 1 - 4 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation

Wear respiratory protection. (Effectiveness (of a measure): >= 90 %)

2.4 Contributing scenario controlling worker exposure for: PROC2,: Use in closed, continuous process with occasional controlled exposure, Option 2

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : 15 - 60 minutes/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

2.5 Contributing scenario controlling worker exposure for: PROC3,: Use in closed batch process (synthesis or formulation), Option 1

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : 1 - 4 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

2.6 Contributing scenario controlling worker exposure for: PROC3,: Use in closed batch process (synthesis or formulation), Option 2

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : 1 - 4 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation

Wear respiratory protection. (Effectiveness (of a measure): >= 90 %)

2.7 Contributing scenario controlling worker exposure for: PROC3,: Use in closed batch process (synthesis or formulation), Option 3

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : 1 - 4 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation

Wear respiratory protection. (Effectiveness (of a measure): >= 90 %)

2.8 Contributing scenario controlling worker exposure for: PROC3,: Use in closed batch process (synthesis or formulation), Option 4

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : < 15 minutes/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

2.9 Contributing scenario controlling worker exposure for: PROC15: Use as laboratory reagent

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : 15 - 60 minutes

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

3. Exposure estimation and reference to its source

Environment

Contributing	Exposure As-	Specific condi-	Compartment	Value	Level of Ex-	RCR

Scenario	sessment Method	tions			posure	
ERC1	ECETOC TRA		Fresh water		0,0051 mg/L	0,0255
			Fresh water sediment		0,0342 mg/kg dry weight	0,0348
			Marine water		0,0125 mg/L	0,625
			Marine sediment		0,0839 mg/kg dry weight	0,853
			Sewage treatment plant		0,051 mg/L	0,170
			Soil		0,0544 mg/kg dry weight	0,384

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1	ECETOC TRA worker v3		Worker - inhalative, long-term - systemic	0,015 mg/m³	0,001
PROC2	ECETOC TRA worker v3	Option 1	Worker - inhalative, long-term - systemic	2,229 mg/m³	0,178
PROC2	ECETOC TRA worker v3	Option 2	Worker - inhalative, long-term - systemic	7,429 mg/m³	0,594
PROC3	ECETOC TRA worker v3	Option 1	Worker - inhalative, long-term - systemic	6,368 mg/m³	0,509
PROC3	ECETOC TRA worker v3	Option 2	Worker - inhalative, long-term - systemic	6,368 mg/m³	0,509
PROC3	ECETOC TRA worker v3	Option 3	Worker - inhalative, long-term - systemic	4,457 mg/m³	0,357
PROC3	ECETOC TRA	Option 4	Worker -	7,429 mg/m³	0,594

	worker v3		inhalative, long-term - systemic		
PROC15	ECETOC TRA worker v3	Quality control of samples	Worker - inhalative, long-term - systemic	2,123 mg/m³	0,170

ERC1: Manufacture of the substance
PROC1: Use in closed process, no likelihood of exposure
PROC15: Use as laboratory reagent
PROC2: Use in closed, continuous process with occasional controlled exposure
PROC3: Use in closed batch process (synthesis or formulation)

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

1. Short title of Exposure Scenario: Intermediate

Main User Groups	:	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	:	SU 3, SU8, SU9, SU11: Industrial uses: Uses of substances as such or in preparations at industrial sites, Manufacture of bulk, large scale chemicals (including petroleum products), Manufacture of fine chemicals, Manufacture of rubber products
Environmental Release Categories	:	ERC6a: Use of intermediate
Chemical product category	:	PC19: Intermediate PC21: Laboratory chemicals
Process categories	:	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) PROC15: Use as laboratory reagent

2.1 Contributing scenario controlling environmental exposure for: ERC6a: Use of intermediate

Amount used

Annual site tonnage	:	124999 tonnes/year
Fraction of EU tonnage used in region:	:	100 %
Daily amount per site	:	416663 kg/day

Environment factors not influenced by risk management

Dilution Factor (River)	:	10
Dilution Factor (Coastal Areas)	:	100

Other given operational conditions affecting environmental exposure

Number of emission days per year	:	300
Emission or Release Factor: Air	:	5 %
Emission or Release Factor: Water	:	0,0006 %
Emission or Release Factor: Soil	:	0,01 %

Technical conditions and measures / Organizational measures

Remarks	:	Organizational measures to prevent/limit release from the site

2.2 Contributing scenario controlling worker exposure for: PROC1,: Use in closed process, no likelihood of exposure, Option 1

Product characteristics
Physical Form (at time of use) : Liquefied gas

Frequency and duration of use
Frequency of use : > 4 hours/day

Other operational conditions affecting workers exposure
Outdoor / Indoor : Indoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

2.3 Contributing scenario controlling worker exposure for: PROC1,: Use in closed process, no likelihood of exposure, Option 2

Product characteristics
Physical Form (at time of use) : Liquefied gas

Frequency and duration of use
Frequency of use : > 4 hours/day

Other operational conditions affecting workers exposure
Outdoor / Indoor : Outdoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

2.4 Contributing scenario controlling worker exposure for: PROC2,: Use in closed, continuous process with occasional controlled exposure, Option 1

Product characteristics
Physical Form (at time of use) : Liquefied gas

Frequency and duration of use
Frequency of use : 1 - 4 hours/day

Other operational conditions affecting workers exposure
Outdoor / Indoor : Indoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation

Wear respiratory protection. (Effectiveness (of a measure): >= 90 %)

2.5 Contributing scenario controlling worker exposure for: PROC2,: Use in closed, continuous process with occasional controlled exposure, Option 2

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : > 4 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

2.6 Contributing scenario controlling worker exposure for: PROC2,: Use in closed, continuous process with occasional controlled exposure, Option 3

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : 15 - 60 minutes/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

2.7 Contributing scenario controlling worker exposure for: PROC2,: Use in closed, continuous process with occasional controlled exposure, Option 4

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : 1 - 4 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation
Wear respiratory protection. (Effectiveness (of a measure): >= 90 %)

2.8 Contributing scenario controlling worker exposure for: PROC3,: Use in closed batch process (synthesis or formulation), Option 1

Product characteristics
Physical Form (at time of use) : Liquefied gas

Frequency and duration of use
Frequency of use : 1 - 4 hours/day

Other operational conditions affecting workers exposure
Outdoor / Indoor : Indoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

Technical conditions and measures
Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

2.9 Contributing scenario controlling worker exposure for: PROC3,: Use in closed batch process (synthesis or formulation), Option 1

Product characteristics
Physical Form (at time of use) : Liquefied gas

Frequency and duration of use
Frequency of use : 1 - 4 hours/day

Other operational conditions affecting workers exposure
Outdoor / Indoor : Indoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation
Wear respiratory protection. (Effectiveness (of a measure): >= 90 %)

2.10 Contributing scenario controlling worker exposure for: PROC3,: Use in closed batch process (synthesis or formulation), Option 3

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : 1 - 4 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor

Remarks : Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation

Wear respiratory protection. (Effectiveness (of a measure): >= 90 %)

2.11 Contributing scenario controlling worker exposure for: PROC3,: Use in closed batch process (synthesis or formulation), Option 4

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : < 15 minutes/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor

Remarks : Assumes a good basic standard of occupational hygiene is implemented

2.12 Contributing scenario controlling worker exposure for: PROC15: Use as laboratory reagent

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : 15 - 60 minutes

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Remarks : Assumes a good basic standard of occupational hygiene is implemented

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC6a	ECETOC TRA		Fresh water		0,0051 mg/L	0,0255
			Fresh water sediment		0,0342 mg/kg dry weight	0,0348
			Marine water		0,0125 mg/L	0,625
			Marine sediment		0,0839 mg/kg dry weight	0,853
			Sewage treatment plant		0,0510 mg/L	0,170
			Soil		0,0686 mg/kg dry weight	0,482

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1	ECETOC TRA worker v3	Option 1	Worker - inhalative, long-term - systemic	0,021 mg/m³	0,002
PROC1	ECETOC TRA worker v3	Option 2	Worker - inhalative, long-term - systemic	0,015 mg/m³	0,001
PROC2	ECETOC TRA v2.0 Worker	Option 1	Worker - inhalative, long-term - systemic	3,184 mg/m³	0,255
PROC2	ECETOC TRA worker v3	Option 2	Worker - inhalative, long-term - systemic	5,306 mg/m³	0,425
PROC2	ECETOC TRA worker v3	Option 3	Worker - inhalative, long-term - systemic	7,429 mg/m³	0,594

PROC2	ECETOC TRA worker v3	Option 4	Worker - inhalative, long-term - systemic	mg/m³	0,178
PROC3	ECETOC TRA worker v3	Option 1	Worker - inhalative, long-term - systemic	6,368 mg/m³	0,509
PROC3	ECETOC TRA worker v3	Option 2	Worker - inhalative, long-term - systemic	6,368 mg/m³	0,509
PROC3	ECETOC TRA worker v3	Option 3	Worker - inhalative, long-term - systemic	4,457 mg/m³	0,357
PROC3	ECETOC TRA worker v3	Option 4	Worker - inhalative, long-term - systemic	7,429 mg/m³	0,594
PROC15	ECETOC TRA worker v3		Worker - inhalative, long-term - systemic	2,123 mg/m³	0,170

ERC6a: Use of intermediate
PROC1: Use in closed process, no likelihood of exposure
PROC15: Use as laboratory reagent
PROC2: Use in closed, continuous process with occasional controlled exposure
PROC3: Use in closed batch process (synthesis or formulation)

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

1. Short title of Exposure Scenario: Laboratory Reagents

Main User Groups	:	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Sectors of end-use	:	SU22, SU24: Public domain (administration, education, entertainment, services, craftsmen), Scientific research and development
Environmental Release Categories	:	ERC8b, ERC8e: Widespread use of reactive processing aid (no inclusion into or onto article, indoor), Widespread use of reactive processing aid (no inclusion into or onto article, outdoor)
Chemical product category	:	PC21: Laboratory chemicals
Process categories	:	PROC3: Use in closed batch process (synthesis or formulation) PROC15: Use as laboratory reagent

2.1 Contributing scenario controlling environmental exposure for: ERC8b, ERC8e: Widespread use of reactive processing aid (no inclusion into or onto article, indoor), Widespread use of reactive processing aid (no inclusion into or onto article, outdoor)

Amount used

Annual site tonnage	:	999 tonnes/year
Fraction of EU tonnage used in region:	:	10 %
Daily amount per site	:	2737 kg/day

Environment factors not influenced by risk management

Dilution Factor (River)	:	10
Dilution Factor (Coastal Areas)	:	100

Other given operational conditions affecting environmental exposure

Number of emission days per year	:	365
Emission or Release Factor: Air	:	0,1 %
Emission or Release Factor: Water	:	2 %
Emission or Release Factor: Soil	:	0 %

2.2 Contributing scenario controlling worker exposure for: PROC3,: Use in closed batch process (synthesis or formulation), Option 1

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : 1 - 4 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Remarks : Assumes a good basic standard of occupational hygiene is implemented

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear respiratory protection. (Effectiveness (of a measure): >= 90 %)

2.3 Contributing scenario controlling worker exposure for: PROC3,: Use in closed batch process (synthesis or formulation), Option 2

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : 15 - 60 minutes/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Remarks : Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation

Wear respiratory protection. (Effectiveness (of a measure): >= 90 %)

2.4 Contributing scenario controlling worker exposure for: PROC3,: Use in closed batch process (synthesis or formulation), Option 3

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : < 15 minutes/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Remarks : Assumes a good basic standard of occupational hygiene is implemented

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

2.5 Contributing scenario controlling worker exposure for: PROC3,: Use in closed batch process (synthesis or formulation), Option 4

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : 15 - 60 minutes/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation

Wear respiratory protection. (Effectiveness (of a measure): >= 90 %)

2.6 Contributing scenario controlling worker exposure for: PROC15: Use as laboratory reagent

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : 15 - 60 minutes/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

3. Exposure estimation and reference to its source

Environment

Contributing	Exposure As-	Specific condi-	Compartment	Value	Level of Ex-	RCR

Scenario	sessment Method	tions			posure	
ERC8b ERC8e	ECETOC TRA		Fresh water		0,0000237 mg/L	0,000118
			Fresh water sediment		0,000159 mg/kg dry weight	0,000162
			Marine water		0,0000023 mg/L	0,000117
			Marine sedi-ment		0,0000157 mg/kg dry weight	0,000160
			Sewage treatment plant		0,000223 mg/L	0,000745
			Soil		0,0000083 mg/kg dry weight	0,000059

Workers

Contributing Scenario	Exposure As-sessment Method	Specific conditions	Value	Level of Ex-posure	RCR
PROC3	ECETOC TRA worker v3	Option 1	Worker - inhalative, long-term - systemic	2,547 mg/m³	0,204
PROC3	ECETOC TRA worker v3	Option 2	Worker - inhalative, long-term - systemic	4,245 mg/m³	0,340
PROC3	ECETOC TRA worker v3	Option 3	Worker - inhalative, long-term - systemic	4,245 mg/m³	0,340
PROC3	ECETOC TRA worker v3	Option 4	Worker - inhalative, long-term - systemic	2,972 mg/m³	0,238
PROC15	ECETOC TRA worker v3		Worker - inhalative, long-term - systemic	4,245 mg/m³	0,340

ERC8b: Widespread use of reactive processing aid (no inclusion into or onto article, indoor)
ERC8e: Widespread use of reactive processing aid (no inclusion into or onto article, outdoor)
PROC15: Use as laboratory reagent
PROC3: Use in closed batch process (synthesis or formulation)

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

1. Short title of Exposure Scenario: Use as industrial solvent.

Main User Groups	:	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	:	SU 3, SU11: Industrial uses: Uses of substances as such or in preparations at industrial sites, Manufacture of rubber products
Environmental Release Categories	:	ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
Chemical product category	:	PC35: Washing and cleaning products PC40: Extraction agents
Process categories	:	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure

2.1 Contributing scenario controlling environmental exposure for: ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

Amount used

Annual site tonnage	:	999 tonnes/year
Fraction of EU tonnage used in region:	:	100 %
Daily amount per site	:	49950 kg/day

Environment factors not influenced by risk management

Dilution Factor (River)	:	10
Dilution Factor (Coastal Areas)	:	100

Other given operational conditions affecting environmental exposure

Number of emission days per year	:	20
Emission or Release Factor: Air	:	100 %
Emission or Release Factor: Water	:	0,005 %
Emission or Release Factor: Soil	:	5 %

Technical conditions and measures / Organizational measures

Remarks	:	Organizational measures to prevent/limit release from the site

2.2 Contributing scenario controlling worker exposure for: PROC1,: Use in closed process, no likelihood of exposure, Option 1

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : > 4 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

2.3 Contributing scenario controlling worker exposure for: PROC1,: Use in closed process, no likelihood of exposure, Option 2

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : > 4 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

2.4 Contributing scenario controlling worker exposure for: PROC2,: Use in closed, continuous process with occasional controlled exposure, Option 1

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : 1 - 4 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation

Wear respiratory protection. (Effectiveness (of a measure): >= 90 %)

2.5 Contributing scenario controlling worker exposure for: PROC2,: Use in closed, continuous process with occasional controlled exposure, Option 2

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : > 4 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

2.6 Contributing scenario controlling worker exposure for: PROC2,: Use in closed, continuous process with occasional controlled exposure, Option 3

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : 15 - 60 minutes/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

2.7 Contributing scenario controlling worker exposure for: PROC2,: Use in closed, continuous process with occasional controlled exposure, Option 4

Product characteristics

Physical Form (at time of use) : Liquefied gas

Frequency and duration of use

Frequency of use : 1 - 4 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor
Remarks : Assumes a good basic standard of occupational hygiene is implemented

Conditions and measures related to personal protection, hygiene and health evaluation

Wear respiratory protection. (Effectiveness (of a measure): >= 90 %)

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4	ECETOC TRA		Fresh water		0,0051 mg/L	0,0255
			Fresh water sediment		0,0342 mg/kg dry weight	0,0348
			Marine water		0,0125 mg/L	0,625
			Marine sediment		0,0839 mg/kg dry weight	0,853
			Sewage treatment plant		0,0510 mg/L	0,170
			Soil		0,0124 mg/kg dry weight	0,0883

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1	ECETOC TRA worker v3	Option 1	Worker - inhalative, long-term - systemic	0,021 mg/m³	0,002
PROC1	ECETOC TRA worker v3	Option 2	Worker - inhalative, long-term - systemic	0,015 mg/m³	0,001
PROC2	ECETOC TRA worker v3	Option 1	Worker - inhalative, long-term - systemic	3,184 mg/m³	0,255
PROC2	ECETOC TRA worker v3	Option 2	Worker - inhalative, long-term - systemic	5,306 mg/m³	0,425

PROC2	ECETOC TRA worker v3	Option 3	Worker - inhalative, long-term - systemic	7,429 mg/m³	0,594
PROC2	ECETOC TRA worker v3	Option 4	Worker - inhalative, long-term - systemic	2,229 mg/m³	0,178

ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
PROC1: Use in closed process, no likelihood of exposure
PROC2: Use in closed, continuous process with occasional controlled exposure

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario