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

1.1. Product identifier

Name of product	Dimethyl ether Art-Nr(n).: 2800, 70280
Name of substance	dimethylether
Index No	603-019-00-8
EC No	204-065-8
REACH registration number	01-2119472128-37
CAS No	115-10-6

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

Identified uses

Sector of uses [SU]
SU10 - Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
SU21 - Consumer uses: Private households (= general public = consumers)
SU22 - Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
SU8 - Manufacture of bulk, large scale chemicals (including petroleum products)
SU9 - Manufacture of fine chemicals

Product categories [PC]
PC1 - Adhesives, sealants
PC14 - Metal surface treatment products, including galvanic and electroplating products
PC15 - Non-metal-surface treatment products
PC21 - Laboratory chemicals
PC23 - Leather tanning, dye, finishing, impregnation and care products
PC24 - Lubricants, greases, release products
PC25 - Metal working fluids
PC26 - Paper and board dye, finishing and impregnation products: including bleaches and other processing aids
PC27 - Plant protection products
PC29 - Pharmaceuticals
PC3 - Air care products
PC31 - Polishes and wax blends
PC32 - Polymer preparations and compounds
PC34 - Textile dyes, finishing and impregnating products; including bleaches and other processing aids
PC35 - Washing and cleaning products (including solvent based products)
PC39 - Cosmetics, personal care products
PC4 - Anti-freeze and de-icing products
PC8 - Biocidal products (e.g. Disinfectants, pest control)
PC9a - Coatings and paints, thinners, paint removers

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)
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 (multistage and/or significant contact)
PROC7 - Industrial spraying
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC12 - use of blowing agents in manufacture of foam
PROC14 - production of preparations or articles by tabletting, compression, extrusion, pelettisation
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC11 - Non industrial spraying
PROC15 - Use as laboratory reagent

Article categories [AC]
AC13 - Plastic articles

Environmental release categories [ERC]
ERC1 - Manufacture of substances
ERC8a - Wide dispersive indoor use of processing aids in open systems
ERC8d - Wide dispersive outdoor use of processing aids in open systems
ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release
ERC2 - Formulation of preparations (mixtures)
ERC11a - Wide dispersive indoor use of long-life articles and materials with low release
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)

Remark
Restricted to professional users.

Recommended intended purpose(s)
Basic substance.
Aerosol propellent.
Propellent (plastic foam).
Propellant.

1.3. Details of the supplier of the safety data sheet

Manufacturer/distributor
GHC Gerling, Holz & Co. Handels GmbH
Ruhrstraße 113, D-22761 Hamburg
Phone +49 40 853 123-0, Fax +49 40 853 123-66
E-Mail hamburg@ghc.de
Internet www.ghc.com

Advice
GHC Gerling, Holz & Co. Handels GmbH
Phone +49 40 853 123-0
Fax +49 40 853 123-66
E-mail (competent person):
msds@ghc.de

1.4. Emergency telephone number

Emergency advice
Giftinformationszentrum (Poison Control Centre) Mainz
Phone +49 6131 19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]

Hazard classes and Hazard categories	Hazard Statements	Classification procedure
Flam. Gas 1	**H220**	
Liquef. Gas	**H280**	

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

Additional hints
Listed substance (Regulation (EC) No 1272/2008, Annex VI, part 3).

2.2. Label elements

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

GHS02

Signal word
Danger

Hazard statements for physical hazards

H220	**Extremely flammable gas.**
H280	**Contains gas under pressure; may explode if heated.**

Precautionary Statements

Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response

P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381	In case of leakage, eliminate all ignition sources.

Storage

P403	Store in a well-ventilated place.

2.3. Other hazards
Information pertaining to special dangers for human and environment
May form explosive peroxides.
In high concentrations may cause asphyxiation.
Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.
Contact with liquid may cause cold burns/frostbite.
Receptacle under pressure.

Results of PBT and vPvB assessment
This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

SECTION 3: Composition/ information on ingredients

3.1. Substances
Description
Content: > 99 %

CAS No 115-10-6 **dimethylether**
EC No 204-065-8
Index No 603-019-00-8
REACH registration number 01-2119472128-37

3.2. Mixtures
not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures
General information
Remove contaminated soaked clothing immediately.
Adhere to personal protective measures when giving first aid.
Seek medical advice immediately.

In case of inhalation
Remove the casualty into fresh air and keep him immobile.
Seek medical treatment immediately.
In case of respiratory standstill give artifical respiration by respiratory bag (Ambu bag) or respirator. Send for a doctor.

In case of skin contact
In case of contact with skin wash off with warm water.
In case of frostbite rinse with plenty of water. Don`t remove clothing.
In case of frostbite spray with lukewarm (not hot) water for at least 15 minutes. Do not remove clothing frozen to the skin. Thaw it with lukewarm water. Apply a sterile dressing. Obtain medical assistance.

In case of eye contact
Rinse cautiously with water for several minuts. Remove contact lenses, if present and easy to do. Continue rinsing.
Call for a doctor immediately.

In case of ingestion
Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed
Physician's information / possible symptoms
Unconsciousness
Coughing
Cardiac arrhythmia (disordered cardiac rhythm).
Shortness of breath
Headache
Nausea
Dizziness
Contact with liquid may cause cold burns/frostbite.

4.3. Indication of any immediate medical attention and special treatment needed
Treatment (Advice to doctor)
Treat symptoms.
If necessary, give oxygen.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media
Alcohol-resistant foam
Dry powder
Carbon dioxide
sand
Water spray jet

Unsuitable extinguishing media
Full water jet

5.2. Special hazards arising from the substance or mixture
In case of fire formation of dangerous gases possible.
Formation of explosive gas mixtures in air.
In the event of fire the following can be released:
Carbon monoxide (CO)
Carbon dioxide (CO_2)

5.3. Advice for firefighters
Special protective equipment for fire-fighters
Use breathing apparatus with independent air supply.
Wear full protective clothing.

Additional information
Cool endangered containers with water spray jet.
In case of fire: Stop leak if safe to do so.
Exposure to fire may cause containers to rupture / explode.
Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur.
Extinguish any other fire.
Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Evacuate area.
Keep people away and stay on the upwind side.
Keep away sources of ignition.

For emergency responders
Remove persons to safety.
Keep area evacuated and free from ignition sources until any spilled liquid has evaporated. (Ground free from frost).
Personal protection by wearing close-fitting protective clothing and breathing apparatus.
Eliminate all ignition sources if safe to do so.

6.2. Environmental precautions

If possible, stop flow of product.
Eliminate ignition sources.
Do not discharge into the drains/surface waters/groundwater.
If necessary, secure leaky pressure receptacles in a salvage packaging.
Suppress gases/vapours/mists with water spray jet
Do not discharge into the subsoil/soil.

6.3. Methods and material for containment and cleaning up

Ensure adequate air ventilation.
Allow to vaporise.

6.4. Reference to other sections

Safe handling: see section 7
Disposal: see section 13
Personal protection equipment: see section 8

! SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling
Use only in thoroughly ventilated areas.
Transfer and handle only in enclosed systems.
Containers' temperature may not be increased above 50 °C.
Do not heat with open flames.
The working pressure in the receptacle must not exceed 2/3 of the test pressure of the pressure receptacle.
Take measures against electrostatically charging.
Barrels and installations thoroughly earthing (grounding).
Use antistatic tools.
Provide good room ventilation even at ground level (vapours are heavier than air).
Prevent cylinders from falling over.
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 backfeed into the container.

Suck back 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.

General protective measures
Do not inhale gases/vapours/aerosols.

Hygiene measures
At work do not eat, drink and smoke.
Wash hands before breaks and after work.

Advice on protection against fire and explosion
The product is combustible.
Because of risk of explosion avoid vapours getting into cellar, sewage system and holes.
Take precautionary measures against static discharges.
Formation of explosive gas mixtures in air.
Pay attention to general rules of internal fire prevention.
Use explosion-proof equipment / fittings and non-sparking tools.

7.2. Conditions for safe storage, including any incompatibilities

! **Requirements for storage rooms and vessels**
Keep in closed original container.
Ventilate store-rooms thoroughly.
Only use containers that are approved specifically for the substance/product.
Suitable materials: Normalised carbon steel, tempered alloy steel, aluminium alloys, austenitic stainless steels.
Valve: Suitable materials: Brass, copper alloys, carbon steels, aluminium alloys, austenitic stainless steels.
Other material details see ISO 11114.
All regulations and local requirements for the storage of containers have to be respected.

! **Advice on storage compatibility**
Do not store with spontaneously flammable materials.
Do not store together with combustible liquids or combustible solids.
Do not store together with animal feedstuffs.
Do not store together with explosives.
Do not store together with infectious substances.
Do not store together with radioactive material.
Do not store together with toxic liquids or toxic solids.
Do not store together with food.
Do not store together with oxidizing liquids or oxidizing solids.

Further information on storage conditions
Ensure valve protection device is correctly fitted.
Store only in original container at temperature of 50°C maximum (=122°F).
Keep container tightly closed and store at cool and aired place.
Prevent cylinders from falling over.
Protect of heat.

7.3. Specific end use(s)
Recommendation(s) for intended use
See section 1.2
Exposure scenarios (ES) see annex to this safety data sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ingredients with occupational exposure limits to be monitored

CAS No	Name	Code	[mg/m3]	[ppm]	Remark
115-10-6	Dimethyl ether	WEL, 8 hours Short-term	766 958	400 500	EH40/2005, United Kingdom

Indicative occupational exposure limit values (91/322/EEC, 2000/39/EC, 2004/37/EC, 2006/15/EC or 2009/161/EU)

CAS No	Name	Code	[mg/m3]	[ppm]	Remark
115-10-6	dimethylether	8 hours	1920	1000	

DNEL-/PNEC-values

DNEL worker

CAS No	Substance name	Value	Code	Remark
115-10-6	dimethylether	1894 mg/m3	DNEL long-term inhalative (systemic)	

DNEL Consumer

CAS No	Substance name	Value	Code	Remark
115-10-6	dimethylether	471 mg/m3	DNEL long-term inhalative (systemic)	Assessment factor 23

PNEC

CAS No	Substance name	Value	Code	Remark
115-10-6	dimethylether	0,016 mg/l	PNEC aquatic, marine water	Assessment factor 10000
		1,549 mg/l	PNEC aquatic, intermittent release	Assessment factor 100
		160 mg/l	PNEC sewage treatment plant (STP)	Assessment factor 10
		0,681 mg/kg dw	PNEC sediment, freshwater	
		0,069 mg/kg dw	PNEC sediment, marine water	
		0,045 mg/kg dw	PNEC soil	
		0,155 mg/l	PNEC aquatic, freshwater	Assessment factor 1000

8.2. Exposure controls

Respiratory protection

Breathing apparatus in the event of high concentrations.
Keep self contained breathing apparatus readily available for emergency use.
Short term: filter apparatus, filter AX
Respiratory protection complying with EN 137.
In case of rescue and maintenance activities in storage containers use environment-independent breathing apparatus because of risk of suffocation by edging out of air oxygen

Hand protection
Leather gloves
Protective gloves complying with EN 374.
Safety gloves according EN 388

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

Other protection measures
Safety shoes with steel toe.
Body covering work clothing, or chemical resistant suit at increased risk.

Appropriate engineering controls
Transfer and handle only in enclosed systems.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Colour	Odour
Gaseous / liquefied under pressure.	colourless	ethereal

Odour threshold
not determined

Important health, safety and environmental information

	Value	Temperature	at	Method	Remark
pH value	not applicable				
Acid number	not applicable				
boiling point	-24,8 °C		1013 hPa		
melting point	-141,5 °C				
Flash point	-42,2 °C				closed cup
Vapourisation rate	not determined				
Flammable (solid)	not applicable				
Flammability (gas)					flammable.
Ignition temperature	240 °C				
Self ignition temperature	226 °C			EU A.15	
Lower explosion limit	2,8 Vol-%				
Upper explosion limit	24,4 Vol-%				
Vapour pressure	5130 hPa	20 °C			

	Value	Temperature	at	Method	Remark
Relative density	2,1146 kg/m3	0 °C	1013 mbar		
Vapour density	1,63				air = 1
Solubility in water	70 g/l	20 °C			
Solubility/other					soluble in organic solvent
Partition coefficient n-octanol/water (log P O/W)	0,07	25 °C			
Decomposition temperature	not determined				
Viscosity dynamic	not applicable				

Oxidising properties
no

Explosive properties
no

9.2. Other information
Vapours are heavier than air.

SECTION 10: Stability and reactivity

10.1. Reactivity
See section "Possibility of hazardous reactions".

10.2. Chemical stability
Stable under recommended conditions of use and storage (see section 7).

10.3. Possibility of hazardous reactions
Risk of explosion in contact with fluorine.
May react violently with oxidants.
Reactions with oxygen.

10.4. Conditions to avoid
Formation of explosive gas/air mixtures.
Heat sources / heat - risk of bursting.
Avoid contact with open flames, glowing metal surfaces, etc..

10.5. Incompatible materials
Substances to avoid
Acetylene
Chlorine
hydrochloric gas
Fluorine
Oxygen
Nitrogen oxides (NOx)
Strong oxidizing agents.

10.6. Hazardous decomposition products

No hazardous decomposition products known.

Thermal decomposition

Remark No decomposition if used as directed.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity/Irritation/Sensitization

	Value/Validation	Species	Method	Remark
LD50 acute oral	Study technically not feasible.			
LD50 acute dermal	Study technically not feasible.			
LC50 acute inhalation	164000 ppm (4 h)	Rat (male)		
Skin irritation	Study technically not feasible.			
Eye irritation	Study technically not feasible.			
Skin sensitization	Study technically not feasible.			
Sensitization respiratory system	non-sensitizing			

Subacute Toxicity - Carcinogenicity

	Value	Species	Method	Validation
Chronic Toxicity	NOAEL 47106 mg/m3 (2 a) Inhalation 6 h/d, 5 d/w	Rat (male / female)	OECD 452	
Mutagenicity			OECD 471 / 473	No experimental information on genotoxicity in vitro and in vivo available.
Reproduction-Toxicity	NOAEL 47106 mg/m3 Inhalation. 6 h/d, 5 d/w	Rat (male / female)	OECD 452	No indications of toxic effects were observed in reproduction studies in animals.

	Value	Species	Method	Validation
Carcinogenicity	NOAEL 47106 mg/m3 (2 a) Inhalation. 6 h/d, 5 d/w	Rat	OECD 453	No indications of carcinogenic effects are available from long-term trials.

Specific target organ toxicity (single exposure)
Substance or mixture is not classified in GHS-criteria as specific target organ toxic with single exposure.

Specific target organ toxicity (repeated exposure)
Substance or mixture is not classified in GHS-criteria as specific target organ toxic with repeated exposure.

Aspiration hazard
not applicable

Experiences made from practice
May cause frostbite.
Gases have a suffocating effect.
Inhalation causes narcotic effect/intoxication.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicological effects

	Value	Species	Method	Validation
Fish	LC50 > 4100 mg/l (96 h)	guppy		
Daphnia	EC50 > 4400 mg/l (48 h)	Daphnia magna		
Algae	EC50 154,92 mg/l (96 h)	Algae	QSAR	
Bacteria	EC10 > 1600 mg/l	Pseudomonas putida		

12.2. Persistence and degradability

	Elimination rate	Method of analysis	Method	Validation
Physico-chemical degradability	At normal temperature very highly volatile or gaseous product that can be released to atmosphere. Elimination test cannot be employed.			
Biological degradability			Closed-bottles-test	not readily degradable
Biological eliminability	not determined			

12.3. Bioaccumulative potential
No high bioaccumulation potential.
Because of the n-octanol/water distribution coefficient (log K o/w) accumulation in organisms is not expected.

12.4. Mobility in soil
Because of its high volatility, it is unlikely that the product soil, water caused.

12.5. Results of PBT and vPvB assessment
This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

12.6. Other adverse effects
Not known.

General regulation
Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste code No.	**Name of waste**
16 05 04*	gases in pressure containers (including halons) containing hazardous substances

Wastes marked with an asterisk are considered to be hazardous waste pursuant to Directive 2008/98/EC on hazardous waste.

Recommendations for the product
Dispose of as hazardous waste.

Recommendations for packaging
Transportable pressure equipment (empty, residual pressure): Return to supplier / manufacturer.

SECTION 14: Transport information

	ADR/RID	**IMDG**	**IATA-DGR**
14.1. UN number	1033	1033	1033
14.2. UN proper shipping name	DIMETHYL ETHER	DIMETHYL ETHER	Dimethyl ether
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. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not applicable
No transport as bulk according IBC - Code.

Land and inland navigation transport ADR/RID
Hazard label(s) 2.1
tunnel restriction code B/D
Classification code 2F

! SECTION 15: Regulatory information

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

VOC standard

VOC content	>=99 %	20 °C	5100 hPa

15.2. Chemical Safety Assessment
The protective measures listed in Sections 6, 7 and 8 of the Safety Data Sheet have to be considered.
For this substance a chemical safety assessment has been carried out.
Exposure scenarios (ES) see annex to this safety data sheet.

SECTION 16: Other information

Recommended uses and restrictions
National and local regulations concerning chemicals shall be observed.

Further information
All declarations of safety-data-sheet refer to pure substance.
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.

Indication of changes: "!" = Data changed compared with the previous version. Previous version: 11.0
Sources of key data used
For the preparation of this safety data sheet, information from our suppliers as well as data from the "database of registered substances" of the European Chemicals Agency (ECHA) were used.

Annex: Exposure scenarios

Identified Uses according to the Use Descriptor System
Uses - Worker
Title : Manufacture of substance- Industrial

Uses - Worker
Title : Use as an intermediate- Industrial

Uses - Worker
Title : Formulation & (re)packing of substances and mixtures- Industrial

Uses - Worker
Title : Use as a propellant- Industrial

Uses - Worker
Title : Use as a propellant- Professional

Uses - Worker
Title : Blowing agents- Industrial

Uses - Worker
Title : Use in laboratories- Professional

Identified Uses according to the Use Descriptor System
Uses - Consumer
Title : Use as a propellant - Consumer

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Exposure Scenario - Worker

SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Manufacture of substance- Industrial
Use Descriptor	**Sector of Use**: SU 3, SU8, SU9 **Process Categories**: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8b, PROC 9, PROC 15 **Environmental Release Categories**: ERC1
Scope of process	Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Gas/liquefied gas
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General risk management measures applicable to all activities	No other specific measures identified.

Section 2.2	**Control of Environmental Exposure**
Substance is a unique structure.	
Not biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	1,0E+00
Regional use tonnage (tonnes/year):	3,0E+04
Fraction of Regional tonnage used locally:	1,0E+00
Annual site tonnage (tonnes/year):	3,0E+04
Maximum daily site tonnage (kg/day):	9,4E+04
Frequency and Duration of Use	
Emission Days (days/year):	320
Environmental factors not influenced by risk management	

Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	5,0E-03
Release fraction to wastewater from process (initial release prior to RMM):	0
Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	99,5
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	0
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	0
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	0
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
During manufacturing no waste of the substance is generated.	
Conditions and measures related to external recovery of waste	
During manufacturing no waste of the substance is generated.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

Section 3.2 -Environment
Used ECETOC TRA model.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

Section 4.2 -Environment

Annex: Exposure scenarios

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Exposure Scenario - Worker

SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use as an intermediate- Industrial
Use Descriptor	**Sector of Use**: SU 3, SU8, SU9 **Process Categories**: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8b, PROC 9, PROC 15 **Environmental Release Categories**: ERC6a
Scope of process	Use of substance as an intermediate (not related to Strictly Controlled Conditions). Includes recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Gas/liquefied gas
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General risk management measures applicable to all activities	No other specific measures identified.

Section 2.2	**Control of Environmental Exposure**
Substance is a unique structure.	
Not biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	1,0E+00
Regional use tonnage (tonnes/year):	3,0E+04
Fraction of Regional tonnage used locally:	1,0E+00
Annual site tonnage (tonnes/year):	3,0E+04
Maximum daily site tonnage (kg/day):	9,4E+04
Frequency and Duration of Use	
Emission Days (days/year):	320
Environmental factors not influenced by risk management	

Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	5,0E-03
Release fraction to wastewater from process (initial release prior to RMM):	0
Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	99,5
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	0
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	0
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	0
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

Section 3.2 -Environment
Used ECETOC TRA model.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

Annex: Exposure scenarios

Section 4.2 -Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Exposure Scenario - Worker

SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Formulation & (re)packing of substances and mixtures- Industrial
Use Descriptor	**Sector of Use**: SU 3, SU 10 **Process Categories**: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8b, PROC 9, PROC 15 **Environmental Release Categories**: ERC2
Scope of process	Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Gas/liquefied gas
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General risk management measures applicable to all activities	No other specific measures identified.

Section 2.2	**Control of Environmental Exposure**
Substance is a unique structure.	
Not biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	1
Regional use tonnage (tonnes/year):	6,0E+03
Fraction of Regional tonnage used locally:	1
Annual site tonnage (tonnes/year):	6,0E+03
Maximum daily site tonnage (kg/day):	2,0E+04
Frequency and Duration of Use	
Emission Days (days/year):	300

Annex: Exposure scenarios

Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	2,0E-03
Release fraction to wastewater from process (initial release prior to RMM):	0
Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	0
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	0
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

Section 3.2 -Environment
Used ECETOC TRA model.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

Section 4.2 -Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Exposure Scenario - Worker

SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use as a propellant- Industrial
Use Descriptor	**Sector of Use**: SU 3 **Process Categories**: PROC 7 **Environmental Release Categories**: ERC8a, ERC8d
Scope of process	Use as a propellant in professional aerosol products.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Gas/liquefied gas
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General risk management measures applicable to all activities	No other specific measures identified.

Section 2.2	**Control of Environmental Exposure**
Substance is a unique structure.	
Not biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	1,5E+03
Fraction of Regional tonnage used locally:	0,0002
Annual site tonnage (tonnes/year):	3
Maximum daily site tonnage (kg/day):	8,2
Frequency and Duration of Use	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	1,0E+00
Release fraction to wastewater from process (initial release prior to	0

RMM):	
Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	0
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	0
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	0
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

Section 3.2 -Environment
Used ECETOC TRA model.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

Section 4.2 -Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for air can be achieved using on-site technologies, either alone

or in combination.
If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Exposure Scenario - Worker

SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use as a propellant- Professional
Use Descriptor	**Sector of Use**: SU 22 **Process Categories**: PROC 11 **Environmental Release Categories**: ERC8a, ERC8d
Scope of process	Use as a propellant in professional aerosol products.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Gas/liquefied gas
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General risk management measures applicable to all activities	No other specific measures identified.

Section 2.2	**Control of Environmental Exposure**
Substance is a unique structure.	
Not biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	1,0E-01
Regional use tonnage (tonnes/year):	1,5E+03
Fraction of Regional tonnage used locally:	2,0E-03
Annual site tonnage (tonnes/year):	3,0E+01
Maximum daily site tonnage (kg/day):	8,2E+01
Frequency and Duration of Use	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	1
Release fraction to wastewater from process (initial release prior to	0

RMM):	
Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	0
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	0
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	0
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

Section 3.2 -Environment
Used ECETOC TRA model.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

Section 4.2 -Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for air can be achieved using on-site technologies, either alone

or in combination.
If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Exposure Scenario - Worker

SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Blowing agents- Industrial
Use Descriptor	**Sector of Use**: SU 3 **Process Categories**: PROC 5, PROC 12, PROC 14 **Environmental Release Categories**: ERC4
Scope of process	Use as a blowing agent for rigid and flexible foams, including material transfers, mixing and injection, curing, cutting, storage and packing.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Gas/liquefied gas
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General risk management measures applicable to all activities	No other specific measures identified.

Section 2.2	**Control of Environmental Exposure**
Substance is a unique structure.	
Not biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	1,0E+00
Regional use tonnage (tonnes/year):	3,0E+02
Fraction of Regional tonnage used locally:	1,0E+00
Annual site tonnage (tonnes/year):	3,0E+02
Maximum daily site tonnage (kg/day):	9,4E+02
Frequency and Duration of Use	
Emission Days (days/year):	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	

Release fraction to air from process (initial release prior to RMM):	5,0E-01
Release fraction to wastewater from process (initial release prior to RMM):	0
Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	0
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	0
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	0
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

Section 3.2 -Environment
Used ECETOC TRA model.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

Section 4.2 -Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management

measures.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Exposure Scenario - Worker

SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use in laboratories- Professional
Use Descriptor	**Sector of Use**: SU 22 **Process Categories**: PROC 15 **Environmental Release Categories**: ERC8a
Scope of process	Use of small quantities within laboratory settings, including material transfers and equipment cleaning.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure > 10 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
General risk management measures applicable to all activities	No other specific measures identified.

Section 2.2	**Control of Environmental Exposure**
Substance is a unique structure.	
Not biodegradable.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

Section 3.2 -Environment

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management	

Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 -Environment

Exposure Scenario - Consumer

SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use as a propellant - Consumer
Use Descriptor	**Sector of Use**: SU 21 **Product Categories**: PC1, PC3, PC4, PC8, PC9a, PC39 **Environmental Release Categories**: ERC8a, ERC8d
Scope of process	Use as a propellant in household consumer aerosol products.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**

Section 2.1	**Control of Consumer Exposure**
Product Characteristics	
Physical form of product	Gas/liquefied gas
Concentration of the Substance in Mixture/Article	Unless stated otherwise.
	Covers concentration up to (%): 50 %
Amounts Used	
Unless stated otherwise.	
for each use event, covers amount up to (g):	10
Frequency and Duration of Use	
Unless stated otherwise.	
covers use up to (times/day of use):	4
Covers use up to (hours/event):	0,25
Other Operational Conditions affecting Exposure	
Unless stated otherwise.	
Covers use under typical household ventilation.	

Product Categories	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
General measures applicable to all Product Categories.	Covers use in room size of 2,5 m3
	No specific risk management measure identified beyond those operational conditions stated.

Section 2.2	**Control of Environmental Exposure**
Substance is a unique structure.	
Not biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	3,0E+03
Fraction of Regional tonnage used locally:	0,1

Annual site tonnage (tonnes/year):	3,0E+02
Maximum daily site tonnage (kg/day):	8,2E+02
Frequency and Duration of Use	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	1
Release fraction to wastewater from process (initial release prior to RMM):	0
Release fraction to soil from process (initial release prior to RMM):	0
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	0
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	0
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated. The Consexpo model has been used to estimate consumer exposures unless otherwise indicated.	

Section 3.2 -Environment
Used ECETOC TRA model.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

Section 4.2 -Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management

measures.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.