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

1.1. Product identifier

Trade name	Sulphur dioxide
Chemical description	Sulphur dioxide
CAS N°	7446-09-5
CE N°	231-195-2
Index N°	016-011-00-9
Registration n°	01-2119485028-34
Chemical formula	SO_2

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

Relevant identified uses	Industrial and professional See the list of identified uses and exposure scenarios in the annex of the safety data sheet Contact supplier for more information on uses
Uses advised against	Consumer use not recommended

1.3. Details of the supplier of the safety data sheet

Company identification	MULTIGAS Route de l'Industrie 102 CH-1564 Domdidier
Phone number	+41 (0) 26 676 94 94
E-mail address	info@multigas.ch

1.4. Emergency telephone numbers

145 (Toxicology Centre Zurich) or +41 (0) 44 251 51 51

+41 (0) 26 676 94 94 (Multigas)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Physical hazards	Gases under pressure : Liquefied gas	H280
Health hazards	Skin corrosion/irritation, Category 1B	H314
	Serious eye damage/eye irritation, Category 1	H318

Acute toxicity (inhalation: gas) Category 3	H331

For the complete H-sentences texts mentioned in that chapter, refer to Section 16

2.2. Label elements

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

Hazard pictograms

GHS04 GHS05 GHS06

Signal word Danger

Hazard statements

H280	Contains gas under pressure; may explode if heated
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H331	Toxic if inhaled
EUH071	Corrosive to the respiratory tract

Precautionary statements

P260	Do not breathe gas, vapours
P280	Wear protective gloves, protective clothing, eye protection, face protection
P303+P361+P353+P315	IF ON SKIN: (or hair) Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Get immediate medical advice / attention
P304+P340+P315	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice / attention
P305+P351+P338+P315	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice / attention
P410+P403	Protect from sunlight. Store in a well-ventilated place
P405	Store locked up

2.3. Other hazards

Exposure may worsen the situation of people with pre-existing eye, skin or respiratory disorders. Prolonged exposure to gas or overexposure to concentrated gas may cause loss of consciousness, possible lung tissue damage, decreased lung function, spinal cord spasm, chemical pneumonitis, throat inflammation (bronchitis) and respiratory paralysis. Contact with the product may cause cold burns or frostbite

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	Concentration	Classification
Sulphur dioxide	(CAS-No.) 7446-09-5 (EC-No.) 231-195-2 (EC Index-No.) 016-011-00-9 (Registration-No.) 01-2119485028-34	<= 100%	Press. Gas (Liq.), H280 Acute Tox. 3 (Inhalation: gas), H331 Skin Corr. 1B, H314 Eye Dam. 1, H318

For the complete H-sentences texts mentioned in that chapter, refer to Section 16

Contains no other components or impurities which will influence the classification of the product

3.2. Mixtures

Not established

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice See a doctor. Show this safety data sheet to the attending physician

In case of inhalation In case of inhalation, remove the person from the contaminated area. In case of respiratory arrest, give artificial respiration. See a doctor

In case of skin contact Remove contaminated clothing and shoes immediately. Wash with soap and plenty of water. Take victim immediately to hospital. See a doctor

In case of eyes contact Rinse thoroughly with plenty of water for at least 15 minutes and consult a doctor

In case of ingestion Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. See a doctor

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

Treat with corticosteroid spray as soon as possible after inhalation

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Water spray or water mist. Dry powder. Carbon dioxide. Foam

Unsuitable extinguishing media Do not use water jet to extinguish

5.2. Special hazards arising from the substance or mixture

Specific hazards

In case of fire or excessive heat, hazardous combustion products may be produced

Exposure to fire may cause containers to rupture/explode

Hazardous combustion products

In case of fire or excessive heat, hazardous combustion products may be produced such as : sulphur oxides

5.3. Additional information

Cool endangered receptacles with water spray jet from a protected position

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid breathing vapours, spray mists or gases

Provide adequate ventilation

Evacuate personnel to a safe place

Personal protective equipment, see section 8

6.2. Environmental precautions

Try to stop the leak

Decrease vapour by water spray in the form of fog or fine droplets

6.3. Methods and material for containment and cleaning up

Hose down area with water

Keep area evacuated and free from ignition sources until any spilled liquid has evaporated (ground free from frost)

Wash contaminated equipment or sites of leaks with copious quantities of water

6.4. Reference to other sections

See also sections 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes

Avoid breathing vapour or mist

Keep away from sources of ignition - No smoking

For precautions, see section 2.2

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool place. Keep container tightly closed in a dry and well-ventilated place

Content under pressure

7.3. Specific end use(s)

None

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Components with occupational exposure limits

Component	CAS N°	Exposure value type	Control parameter	Source
Sulphur dioxide	7446-09-05	TWA	0.5 ppm	SUVA: Limit values of exposure to workstations
			1.3 mg/m³	
		OEL	0.5 ppm	SUVA: Limit values of exposure to workstations
			1.3 mg/m³	

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate general and local exhaust ventilation

Gas detectors should be used when toxic gases may be released

8.2.2. Individual protection measures, e.g. personal protective equipment

Eye/face protection

Wear goggles and a face shield when transfilling or breaking transfer connections. Standard EN 166

Skin / hand protection

Wear protective gloves when handling gas cylinders. Standard EN 388

Wear cold insulating gloves when transferring or disconnecting transfer lines Standard EN 511

Wearing chemical resistant gloves Standard EN 374

For short-term use

Material: Chloroprene rubber

Penetration time:> 30 min

Glove thickness: 0.4 mm

For long-term use

Material: Fluoroelastomer

Penetration time:> 480 min

Glove thickness: 0.7 mm

	Have appropriate, chemical-resistant protective clothing ready for use in emergencies. Standard EN943-1
Respiratory protection	Self-contained breathing apparatus (SCBA) or positive pressure air mask must be used in oxygenated atmospheres. Standard EN 137 - Self-contained compressed air device with a full face mask

8.2.3. Environmental exposure controls

Avoid any spill or leak if it can be done safely

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	
• **Physical state at 20°C / 101.3kPa**	Gas
• **Colour**	Colourless
Odour	No data available
Odour threshold	No data available
pH	No data available
Melting point / Freezing point	-73°C
Boiling point	-10°C
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Explosive limits	No data available
Vapour pressure [20°C]	3.3 bar
Vapour pressure [50°C]	8.4 bar
Vapour density	No data available
Relative density, liquid (water=1)	No data available
Relative density, gas (air=1)	1.25
Water solubility	11,9 % weight at 15 °C and 760 mm Hg
Partition coefficient n-octanol/water (Log Kow)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidising properties	No data available

9.2. Other information

Molar mass	64 g/mol
Critical temperature [°C]	158°C
Relative vapour density	Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level

SECTION 10: Stability and reactivity

10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below

10.2. Chemical stability

Stable under recommended storage conditions

10.3. Possibility of hazardous reactions

No data available

10.4. Conditions to avoid

Avoid moisture in installation systems

10.5. Incompatible materials

Reacts with water to form corrosive acids

May react violently with alkalis, strong oxidizing agents, chlorates, acroleine

Reacts with most metals in the presence of moisture, liberating hydrogen, an extremely flammable gas

With water causes rapid corrosion of some metals

Moisture

For additional information on compatibility refer to ISO 11114

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced

SECTION 11: Toxicological information

11.1. Chemical safety assessment

Acute toxicity	Toxic if inhaled Delayed fatal pulmonary oedema possible
Skin corrosion/irritation	Causes severe skin burns and eye damage
Serious eye damage/irritation	Causes serious eye damage

Respiratory or skin sensitisation	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	No data available
Reproductive toxicity	No data available
STOT-single exposure – Target organ(s)	Severe corrosion to the respiratory tract at high concentrations
STOT-repeated exposure	No data available
Ingestion hazard	No data available

SECTION 12: Ecological information

12.1. Toxicity

Assessment Classification criteria are not met

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

PBT / vPvB assessment is not available because the chemical safety assessment is not required / is not conducted

12.6. Other adverse effects

May cause pH changes in aqueous ecological systems

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product

Must not be released into the atmosphere
Burn in a chemical incinerator equipped with an afterburner and scrubber
Return to the supplier the product not consumed in its original container

Contaminated container

Eliminate as unused product
Contact the supplier if instructions are needed

OMoD Code 16 05 04

Gases in pressure containers containing dangerous substances

SECTION 14: Transport information

14.1. UN number

Transport par road/rail ADR / RID	Transport by sea IMDG	Transport by air IATA
1079	1079	1079

14.2. UN proper shipping name

Transport par road/rail ADR / RID	Transport by sea IMDG	Transport by air IATA
Sulphur dioxide	Sulphur dioxide	Sulphur dioxide

14.3. Transport hazard class(es)

Labelling

ADR/RID **IMDG** **IATA**	2.3 : Toxic gases 8 : Corrosive substances

14.4. Packing group

ADR/RID **IMDG** **IATA**	Not established

14.5. Environmental hazards

ADR/RID	None
IMDG	None
ICAO-TI / IATA-DGR	None

14.6. Special precautions for user

No data available

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

This safety data sheet complies with the requirements of Regulation (CE) No. 1907/2006

15.2. Chemical safety assessment

A CSA has been carried out

SECTION 16: Other information

Indication of changes

Revised safety data sheet in accordance with commission regulation (EU) No 2015/830

Abbreviations and acronyms

ADR :	European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS :	Chemical Abstract Service number (USA)
CLP :	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
CSA :	Chemical Safety Assessment
EIGA :	European Industrial Gases Association
EINECS :	European Inventory of Existing Commercial Chemical Substances
EN :	European Standard
ATE :	Acute Toxicity Estimate
IATA :	International Air Transport Association
IMDG Code :	International Maritime Dangerous Goods Code
LC50 :	Lethal Concentration to 50 % of a test population
OMoD :	Swiss Ordinance on the movement of waste
PBT :	Persistent, Bioaccumulative and Toxic
PPE:	Personal Protection Equipment
REACH :	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID :	Regulations concerning the international carriage of dangerous goods by rail
RMM :	Risk Management Measures
STOT-SE :	Specific Target Organ Toxicity - Single Exposure
UN :	United Nations
vPvB :	Very Persistent and Very Bioaccumulative
WGK:	Water Hazards Class

Full text of H, EUH and P statements used in sections 2 and 3

Hazard statements

H280	Contains gas under pressure; may explode if heated
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H331	Toxic if inhaled

EUH071	Corrosive to the respiratory tract

Precautionary statements

P260	Do not breathe gas, vapours
P280	Wear protective gloves, protective clothing, eye protection, face protection
P303+P361+P353+P315	IF ON SKIN: (or hair) Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Get immediate medical advice / attention
P304+P340+P315	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice / attention
P305+P351+P338+P315	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice / attention
P410+P403	Protect from sunlight. Store in a well-ventilated place
P405	Store locked up

Disclaimer of liability

Details given in this document have been prepared based on the most available reliable documents and are believed to be correct at the time of going to press

They do not claim to be exhaustive and should be considered as a guide

1 IDENTIFIED USES

1.1 Usage: Manufacture, (Manufacture / Import)

Main user groups

SU3	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

Process categories

PROC1	Chemical production or refinery in closed process without likelihood of exposure
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC22	Manufacturing and processing of minerals and/or metals at substantially elevated temperature

Category of chemicals

PC19	Intermediate
PC21	Laboratory chemicals

Categories of release into the environment

ERC1	Manufacture of the substance

1.2 Use: Discharge and filling for trade and distribution

Main user groups

SU3	Uses of substances as such or in preparations at industrial sites
SU10	Formulation (mixing) of preparation and / or repackaging

Process categories

PROC1	Chemical production or refinery in closed process without likelihood of exposure
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Category of chemicals

PC19	Intermediate
PC21	Laboratory chemicals

Categories of release into the environment

ERC2	Formulation into mixture

1.3 Industrial use in the manufacture of foundry cores (semi-closed process)

Main user groups

SU3	Uses of substances as such or in preparations at industrial sites
SU14	Manufacture of basic metals, including alloys

Process categories

PROC1	Chemical production or refinery in closed process without likelihood of exposure
PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure
PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Category of chemicals

PC19	Intermediate

Categories of release into the environment

ERC2	Formulation into mixture
ERC6d	Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)

1.4 Use in closed processes / semi-closed process (industrial)

Main user groups

SU3	Uses of substances as such or in preparations at industrial sites
SU4	Manufacture of food products
SU6b	Manufacture of pulp, paper and paper products
SU8	Manufacture of bulk, large scale chemicals (including petroleum products)
SU9	Manufacture of fine chemicals
SU10	Formulation (mixing) of preparation and / or repackaging
SU13	Manufacture of other non-metallic mineral products, e.g. plasters, cement
SU14	Manufacture of basic metals, including alloys

	SU15	Manufacture of fabricated metal products, except machinery and equipment

Process categories

PROC1	Chemical production or refinery in closed process without likelihood of exposure
PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure
PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure
PROC4	Chemical production where opportunity for exposure arises
PROC5	Mixing or blending in batch processes
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC22	Manufacturing and processing of minerals and/or metals at substantially elevated temperature
PROC23	Open processing and transfer operations at substantially elevated temperature

Category of chemicals

PC14	Metal surface treatment products
PC15	Non-metal-surface treatment products
PC19	Intermediate
PC20	Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
PC26	Paper and board treatment products
PC29	Pharmaceuticals
PC37	Water treatment chemicals

Categories of release into the environment

ERC2	Formulation into mixture
ERC4	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
ERC6a	Use of intermediate
ERC6b	Use of reactive processing aid at industrial site (no inclusion into or onto article)

1.5 Professional use in wine production / refilling of refrigeration systems

Main user groups

SU22	Professional Uses: Public Domain (Administration, Education, Show, Services, Craftsmen)

Process categories

PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC19	Manual activities involving hand contact

Category of chemicals

PC16	Heat transfer fluids
PC19	Intermediate

Categories of release into the environment

ERC6a	Use of intermediate
ERC7	Use of functional fluid at industrial site

2 Exposure scenarii

2.1 Manufacturing, (Manufacture / Import)

Main user groups

SU3	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

Process categories

PROC1	Chemical production or refinery in closed process without likelihood of exposure
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC22	Manufacturing and processing of minerals and/or metals at substantially elevated temperature

Category of chemicals

PC19	Intermediate
PC21	Laboratory chemicals

Categories of release into the environment

ERC1	Manufacture of the substance

2.1.1 Scenario contributing to the control of the environmental exposure for ERC1: Manufacture of the substance

Quantity used

Annual quantity per site	< 200 t / year

Other given operating conditions affecting the exposure of the environment

Number of emission days per year	365
Emission in the air	0.001035 mg/m³

Technical conditions and measures / Organizational measures

Remarks	Measures to limit atmospheric emissions : < 7 t/year : none > 7 t/year : gas washing Emissions of wastewater are negligible, the process being done without contact with water. In case of contact with water: check pH value, if necessary, neutralization

2.1.2 Contribution scenario for controlling workers' exposure for general measures PROC1, PROC22:

Chemical production or refinery in closed process without likelihood of exposure,

Manufacturing and processing of minerals and/or metals at substantially elevated temperature

Product characteristics

Concentration of the Substance in the Mixture / Article	Covers concentrations up to 100%
Physical Form (at the time of use)	Gaseous

Frequency and duration of use

Frequency of use	220 days / year
Remarks	Covers daily exposures up to 12 hours (unless specified otherwise)

Human factors that are not influenced by risk management	
Exposure through the skin	Data not available
Respiratory volume	20 m^3/day
Technical conditions and measures	Provide a good level of general or controlled ventilation. Handle the substance inside a closed system with localized aspiration (10mbar). Automated activity to the extent possible
Organizational measures to prevent / limit releases, dispersions, and exposures	Ensure employees are trained to reduce exposures as much as possible, Inspect, test and regularly maintain all control measures

Conditions and measures related to the assessment of personal protection, hygiene and health	Where there is a risk of exposure: Wear personal protective equipment

2.1.3 Contribution scenario for controlling workers' exposure for general measures PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities

WASTE DISCHARGE: SULFURIC ACID, SULFUR

Product characteristics

Concentration of the Substance in the Mixture / Article	Data not available
Physical Form (at the time of use)	Aqueous solution, liquid, massive

Frequency and duration of use

Frequency of use	220 days / year
Remarks	Covers daily exposures up to 12 hours (unless specified otherwise)

Human factors that are not influenced by risk management	
Exposure through the skin	Negligible
Respiratory volume	Negligible
Technical conditions and measures	Ensure the correct condition of joints and connections Provide a good level of general or controlled ventilation. Handle the substance inside a closed system. Automated activity to the extent possible
Organizational measures to prevent / limit releases, dispersions, and exposures	Ensure employees are trained to reduce exposures as much as possible, Inspect, test and regularly maintain all control measures
Conditions and measures related to the assessment of personal protection, hygiene and health	Where there is a risk of exposure: Wear personal protective equipment

Connection and disconnection of vials / barrels; unloading and loading operation

Product characteristics

Concentration of the Substance in the Mixture / Article	< 100 %
Physical Form (at the time of use)	Liquefied gas

Frequency and duration of use

Frequency of use	220 days / year
Remarks	Covers daily exposures up to 12 hours (unless specified otherwise)

Human factors that are not influenced by risk management	
Exposure through the skin	Data not available
Respiratory volume	20 m^3/day
Technical conditions and measures	Use a cabin / housing with suction. Ensure the use of tools with a suction device. Pressure <100 mbar

	Ensure the correct condition of joints and connections Use in semi-automatic and especially closed filling systems
Organizational measures to prevent / limit releases, dispersions, and exposures	Ensure employees are trained to reduce exposures as much as possible, Inspect, test and regularly maintain all control measures
Conditions and measures related to the assessment of personal protection, hygiene and health	Where there is a risk of exposure: Wear personal protective equipment

2.1.4 Scenario of contribution to controlling worker exposure for PROC1: Chemical production or refinery in closed process without likelihood of exposure

Remarks	See 2.1.3 "Scenario of contribution to controlling worker exposure for: General measures"

2.1.5 Scenario of contribution to controlling worker exposure for PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities

Waste dump: sulfuric acid, sulphur

Technical conditions and measures	Ensure the correct condition of joints and connections

Connection and disconnection of vials / barrels; unloading and loading operation

Technical conditions and measures	Use a cabin / housing with suction. Ensure the use of tools with a suction device. Pressure <100 mbar Ensure the correct condition of joints and connections Use in semi-automatic and especially closed filling systems

2.1.6 Scenario of contribution to controlling worker exposure for PROC22: Manufacturing and processing of minerals and/or metals at substantially elevated temperature

Technical conditions and measures

Closed system with ventilation with local exhaust (10 mbar)

2.1.7 Exposure estimation and reference of its source

Environment

Contribution to the scenario	Exposure Assessment Methods	Specific conditions	Compartment	Type of value	Exposure level	RCR
ERC1	EUSES	Sulphur dioxide	Air	PEC	0.001035 mg/l	< 0,95
Remarks:		LEV = Local ventilation				

	EPR = Respiratory protective equipment

Workers

Contribution to the scenario	Exposure Assessment Methods	Specific conditions	Type of value	Exposure level	RCR
PROC1	ECETOC TRA	Inside with ventilation with aspiration at the source	Inhalation	0.01 ppm	0.02
	ECETOC TRA	Inside with ventilation with aspiration at the source	Dermal	Data not available	
PROC8b		Aqueous solution	Inhalation	Negligible	-
		Aqueous solution	Dermal	Negligible	-
	ECETOC TRA	Inside with ventilation with aspiration at the source	Inhalation	0.2 ppm	0.4
		Inside with ventilation with aspiration at the source	Inhalation	0.03 ppm	0.07
PROC22	ECETOC TRA	Inside with ventilation with aspiration at the source	Inhalation	0.2 ppm	0.4
		Inside with ventilation with aspiration at the source,	Dermal	Data not available	-

2.1.8 Advise for the downstream user to evaluate if they are working within the boundaries defined by the exposure scenario

The available safety data sheet informs the user of the risk management measures and operating conditions that allow him to work safely with the substance or mixture. If other risk management / operational conditions are adopted, the user must ensure that risks / operational conditions are adopted, the user must ensure that the risks are managed at least at an equivalent level.

2.2 Discharging and filling for trade and distribution

Main user groups

SU3	Uses of substances as such or in preparations at industrial sites
SU10	Formulation (mixing) of preparation and / or repackaging

Process categories

PROC1	Chemical production or refinery in closed process without likelihood of exposure
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Category of chemicals

PC19	Intermediate
PC21	Laboratory chemicals

Categories of release into the environment

ERC2	Formulation into mixture

2.2.1 Scenario contributing to the control of the environmental exposure for ERC2: Formulation into mixture

Quantity used

Annual quantity per site	<200 t / year

Other given operating conditions affecting the exposure of the environment

Number of emission days per year	365
Emission in the air	0.001035 mg/m³

Technical conditions and measures / Organizational measures

Remarks	Measures to limit atmospheric emissions : < 7 t/year : none > 7 t/year : gas washing Emissions of wastewater are negligible, the process being done without contact with water. In case of contact with water: check pH value, if necessary, neutralization

2.2.2 Contribution scenario for controlling workers' exposure for general measures PROC1, PROC8a, PROC8b, PROC9:

Chemical production or refinery in closed process without likelihood of exposure,

Transfer of substance or mixture (charging and discharging) at non-dedicated facilities,

Transfer of substance or mixture (charging and discharging) at dedicated facilities,

Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Product characteristics

Concentration of the Substance in the Mixture / Article	Covers concentrations up to 100%
Physical Form (at the time of use)	Liquefied gas

Frequency and duration of use

Frequency of use	220 days / year
Remarks	Covers daily exposures up to 12 hours (unless specified otherwise)

Human factors that are not influenced by risk management

Exposure through the skin	Palms of both hands(480 cm^2)

Respiratory volume	10 m^3/session
Technical conditions and measures	Use a cabin / housing with suction. Ensure the use of tools with a suction device. Pressure <100 mbar Ensure the correct condition of joints and connections Use in semi-automatic and especially closed filling systems
Organizational measures to prevent / limit releases, dispersions, and exposures	Ensure that employees are trained to reduce exposures as much as possible. Inspect, test and regularly maintain all control measures
Conditions and measures related to the assessment of personal protection, hygiene and health	Where there is a risk of exposure: Wear personal protective equipment

2.2.3 Scenario of contribution to controlling worker exposure for PROC1: Chemical production or refinery in closed process without likelihood of exposure

Remarks	See 2.2.2 "Scenario of contribution to controlling worker exposure for: General measures"

2.2.4 Scenario of contribution to controlling worker exposure for PROC8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Remarks	See 2.2.2 "Contribution scenario for exposure control workers for General measures"

2.2.5 Scenario of contribution to controlling worker exposure for PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities

Remarks	See 2.2.2 "Contribution scenario for exposure control workers for General measures"

2.2.6 Scenario of contribution to controlling worker exposure for PROC9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Remarks	See 2.2.2 "Contribution scenario for exposure control workers for General measures"

2.2.7 Exposure estimation and reference of its source

Environment

Contribution to the scenario	Exposure Assessment Methods	Specific conditions	Compartment	Type of value	Exposure level	RCR
ERC1	EUSES	Sulphur dioxide	Air		0.001035 mg/m^3	< 0.95
Remarks:		LEV = Local ventilation EPR = Respiratory protective equipment				

Workers

Contribution to the scenario	Exposure Assessment Methods	Specific conditions	Type of value	Exposure level	RCR
PROC1 PROC8a PROC8b PROC9	ECETOC TRA	Inside with ventilation with aspiration at the source	Inhalation	0.02 ppm	0.4
	ECETOC TRA	Inside with ventilation with aspiration at the source	Dermal	Data not available	
PROC1 PROC8a PROC8b PROC9	ECETOC TRA	Outside	Inhalation	0.03 ppm	0.07
	ECETOC TRA	Outside	Dermal	Data not available	-

2.2.11 Advice to downstream user to evaluate whether he works within the boundaries set by the exposure scenario

The available safety data sheet informs the user of the risk management measures and operating conditions that allow him to work safely with the substance or mixture. If other risk management / operational conditions are adopted, the user must ensure that risks / operational conditions are adopted, the user must ensure that the risks are managed at least at an equivalent level

2.3 Industrial use in the manufacture of foundry cores (semi-closed process)

Main user groups

SU3	Uses of substances as such or in preparations at industrial sites
SU14	Manufacture of basic metals, including alloys

Process categories

PROC1	Chemical production or refinery in closed process without likelihood of exposure
PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure
PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Category of chemicals

PC19	Intermediate

Categories of release into the environment

ERC2	Formulation into mixture
ERC6d	Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)

2.3.1 Scenario contributing to the control of the environmental exposure for ERC2, ERC6d: Formulation into mixture, Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)

Quantity used

Annual quantity per site	<200 ton (s) / year

Other given operating conditions affecting the exposure of the environment

Number of emission days per year	365
Emission in the air	0.001035 mg/m³

Technical conditions and measures / Organizational measures

Remarks	Measures to limit atmospheric emissions : < 7 t/year : none > 7 t/year : gas washing Emissions of wastewater are negligible, the process being done without contact with water. In case of contact with water: check pH value, if necessary, neutralization

2.3.2 Contribution scenario for controlling workers' exposure for general measures PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC9:

Chemical production or refinery in closed process without likelihood of exposure,

Chemical production or refinery in closed continuous process with occasional controlled exposure,

Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure,

Transfer of substance or mixture (charging and discharging) at non-dedicated facilities,

Transfer of substance or mixture (charging and discharging) at dedicated facilities,

Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Product characteristics	
Concentration of the Substance in the Mixture / Article	Covers concentrations up to 100%
Physical Form (at the time of use)	Liquefied gas
Frequency and duration of use	
Frequency of use	220 days / year
Remarks	Covers daily exposures up to 12 hours (unless specified otherwise)
Human factors that are not influenced by risk management	
Exposure through the skin	Palms of both hands(480 cm^2)
Respiratory volume	10 m^3/session
Technical conditions and measures	Provide a good level of general or controlled ventilation. Handle the substance inside a closed system. Automated activity to the extent possible
Organizational measures to prevent / limit releases, dispersions, and exposures	Ensure that employees are trained to reduce exposures as much as possible. Inspect, test and regularly maintain all control measures
Conditions and measures related to the assessment of personal protection, hygiene and health	Where there is a risk of exposure: Wear personal protective equipment

2.3.3 Scenario of contribution to controlling worker exposure for PROC1, PROC8a, PROC8b, PROC9:

Chemical production or refinery in closed process without likelihood of exposure

Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Transfer of substance or mixture (charging and discharging) at dedicated facilities

Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Connection and disconnection of vials / barrels

Technical conditions and measures	Use a cabin / housing with suction. Ensure the use of tools with a suction device. Pressure <100 mbar

Ensure the correct condition of joints and connections
Use in semi-automatic and especially closed filling systems

2.3.4 Scenario of contribution to controlling worker exposure for PROC1, PROC8a, PROC8b, PROC9:

Chemical production or refinery in closed process without likelihood of exposure
Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
Transfer of substance or mixture (charging and discharging) at dedicated facilities
Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
Unloading and loading of trucks- / tank wagons

Technical conditions and measures	Use a cabin / housing with suction. Ensure the use of tools with a suction device. Pressure <100 mbar Ensure the correct condition of joints and connections Use in semi-automatic and especially closed filling systems
Conditions and measures related to the assessment of personal protection, hygiene and health	Respiratory Mask: Safety Factors 30 (ABEK1)

2.3.5 Scenario of contribution to controlling worker exposure for PROC2, PROC3, PROC8b:

Chemical production or refinery in closed continuous process with occasional controlled exposure,
Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure,
Transfer of substance or mixture (charging and discharging) at dedicated facilities

Remarks	See 2.3.2 "Contribution scenario for exposure control workers for General measures"
Technical conditions and measures	Minimum efficiency of local ventilation: 90%

2.3.6 Exposure estimation and reference of its source

Environment

Contribution to the scenario	Exposure Assessment Methods	Specific conditions	Compartment	Type of value	Exposure level	RCR
ERC2 ERC6d	EUSES	Sulphur dioxide	Air		0.001035 mg/m^3	< 0.95
Remarks:		LEV = Local ventilation EPR = Respiratory protective equipment				

Workers

Contribution to the scenario	Exposure Assessment Methods	Specific conditions	Type of value	Exposure level	RCR
PROC1 PROC8a PROC8b PROC9	ECETOC TRA	Inside with ventilation with aspiration at the source	Inhalation	0.2 ppm	0.4
	ECETOC TRA	Inside with ventilation with aspiration at the source	Dermal	Data not available	
PROC1 PROC8a PROC8b PROC9	ECETOC TRA	Outside	Inhalation	0.03 ppm	0.07
	ECETOC TRA	Outside	Dermal	Data not available	-

2.3.11 Advice to downstream user to evaluate whether he works within the boundaries set by the Exposure Scenario

The available safety data sheet informs the user of the risk management measures and operating conditions that allow him to work safely with the substance or mixture. If other risk management / operational conditions are adopted, the user must ensure that risks / operational conditions are adopted, the user must ensure that the risks are managed at least at an equivalent level

2.4 Use in closed processes / semi-closed processes (industrial)

Main user groups

SU3	Uses of substances as such or in preparations at industrial sites
SU4	Manufacture of food products
SU6b	Manufacture of pulp, paper and paper products
SU8	Manufacture of bulk, large scale chemicals (including petroleum products)
SU9	Manufacture of fine chemicals
SU10	Formulation (mixing) of preparation and / or repackaging
SU13	Manufacture of other non-metallic mineral products, e.g. plasters, cement
SU14	Manufacture of basic metals, including alloys
SU15	Manufacture of fabricated metal products, except machinery and equipment

Process categories

PROC1	Chemical production or refinery in closed process without likelihood of exposure

PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure
PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure
PROC4	Chemical production where opportunity for exposure arises
PROC5	Mixing or blending in batch processes
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC22	Manufacturing and processing of minerals and/or metals at substantially elevated temperature
PROC23	Open processing and transfer operations at substantially elevated temperature

Category of chemicals

PC14	Metal surface treatment products
PC15	Non-metal-surface treatment products
PC19	Intermediate
PC20	Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
PC26	Paper and board treatment products
PC29	Pharmaceuticals
PC37	Water treatment chemicals

Categories of release into the environment

ERC2	Formulation into mixture
ERC4	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
ERC6a	Use of intermediate
ERC6b	Use of reactive processing aid at industrial site (no inclusion into or onto article)

2.4.1 Scenario contributing to the control of the environmental exposure for ERC2, ERC4, ERC6a, ERC6b:

Formulation into mixture,

Use of non-reactive processing aid at industrial site (no inclusion into or onto article),

Use of intermediate,

Use of reactive processing aid at industrial site (no inclusion into or onto article)

Quantity used

Annual quantity per site	<200 t / year

Other given operating conditions affecting the exposure of the environment

Number of emission days per year	365
Emission in the air	0.001035 mg/m³

Technical conditions and measures / Organizational measures

Remarks	Measures to limit atmospheric emissions : < 7 t/year : none > 7 t/year : gas washing Emissions of wastewater are negligible, the process being done without contact with water. In case of contact with water: check pH value, if necessary, neutralization

2.4.2 Contribution scenario for controlling workers' exposure for general measures PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC22, PROC23:

Chemical production or refinery in closed process without likelihood of exposure,

Chemical production or refinery in closed continuous process with occasional controlled exposure,

Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure,

Chemical production where opportunity for exposure arises,

Mixing or blending in batch processes

Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Transfer of substance or mixture (charging and discharging) at dedicated facilities,

Manufacturing and processing of minerals and/or metals at substantially elevated temperature,

Open processing and transfer operations at substantially elevated temperature

Product characteristics

Concentration of the Substance in the Mixture / Article	Covers concentrations up to 100%
Physical Form (at the time of use)	Liquefied gas

Frequency and duration of use

Frequency of use	220 days / year
Remarks	Covers daily exposures up to 12 hours (unless specified otherwise)

Human factors that are not influenced by risk management

Exposure through the skin	Palms of both hands(480 cm^2)
Respiratory volume	10 m^3/session
Technical conditions and measures	Provide a good level of general or controlled ventilation. Handle the substance inside a closed system. Automated activity to the extent possible

Organizational measures to prevent / limit releases, dispersions, and exposures	Ensure that employees are trained to reduce exposures as much as possible. Inspect, test and regularly maintain all control measures
Conditions and measures related to the assessment of personal protection, hygiene and health	Where there is a risk of exposure: Wear personal protective equipment

2.4.3 Scenario of contribution to controlling worker exposure for PROC1, PROC8a, PROC8b, PROC9:

Chemical production or refinery in closed process without likelihood of exposure

Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Transfer of substance or mixture (charging and discharging) at dedicated facilities

Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Connection and disconnection of vials / barrels

Technical conditions and measures	Use a cabin / housing with suction. Ensure the use of tools with a suction device. Pressure <100 mbar Ensure the correct condition of joints and connections Use in semi-automatic and especially closed filling systems

2.4.4 Scenario of contribution to controlling worker exposure for PROC1, PROC8a, PROC8b, PROC9:

Chemical production or refinery in closed process without likelihood of exposure

Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Transfer of substance or mixture (charging and discharging) at dedicated facilities

Transfer of substance or mixture into small containers (dedicated filling line, including weighing)Unloading and loading of trucks- / tank wagons

Technical conditions and measures	Use a cabin / housing with suction. Ensure the use of tools with a suction device. Pressure <100 mbar Ensure the correct condition of joints and connections Use in semi-automatic and especially closed filling systems

2.4.5 Scenario of contribution to controlling worker exposure for PROC2, PROC3, PROC4, PROC5, PROC8b, PROC22, PROC23:

Chemical production or refinery in closed continuous process with occasional controlled exposure,

Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure

Chemical production where opportunity for exposure arises

Mixing or blending in batch processes,

Transfer of substance or mixture (charging and discharging) at dedicated facilities,

Manufacturing and processing of minerals and/or metals at substantially elevated temperature,

Open processing and transfer operations at substantially elevated temperature

Use in semi-closed processes

Remarks

See 2.4.2 "Contribution scenario for exposure control workers for: General measures"

PROC2 et PROC3, Minimum efficiency of local ventilation: 90%

2.4.6 Exposure estimation and reference of its source

Environment

Contribution to the scenario	Exposure Assessment Methods	Specific conditions	Compartment	Type of value	Exposure level	RCR
ERC2 ERC4 ERC6a ERC6b	EUSES	Sulphur dioxide	Air		0.001035 mg/m^3	< 0.95
Remarks:		LEV = Local ventilation EPR = Respiratory protective equipment				

Workers

Contribution to the scenario	Exposure Assessment Methods	Specific conditions	Type of value	Exposure level	RCR
PROC1 PROC8a PROC8b PROC9	ECETOC TRA	Inside with ventilation with aspiration at the source	Inhalation	0.2 ppm	0.4
	ECETOC TRA	Inside with ventilation with aspiration at the source	Dermal	Data not available	
PROC1 PROC8a PROC8b PROC9	ECETOC TRA	Outside	Inhalation	0.03 ppm	0.07
	ECETOC TRA	Outside	Dermal	Data not available	-
PROC1	ECETOC TRA	Outside	Inhalation	0.01 ppm	0.02
	ECETOC TRA	Outside	Dermal	Data not available	-
PROC2 PROC3 PROC4 PROC5 PROC8b PROC22 PROC23	ECETOC TRA	Outside	Inhalation	0.41 ppm	0.82
	ECETOC TRA	Outside	Dermal	Data not available	-

2.4.7 Advice for the downstream user to evaluate if they are working within the boundaries defined by the exposure scenario

The available safety data sheet informs the user of the risk management measures and operating conditions that allow him to work safely with the substance or mixture. If other risk management / operational conditions are adopted, the user must ensure that risks / operational conditions are adopted, the user must ensure that the risks are managed at least at an equivalent level

2.5 Professional use, in wine production / refilling of refrigeration systems

Main user groups

SU22	Professional Uses: Public Domain (Administration, Education, Show, Services, Craftsmen)

Process categories

PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC19	Manual activities involving hand contact

Category of chemicals

PC16	Heat transfer fluids
PC19	Intermediate

Categories of release into the environment

ERC6a	Formulation into mixture
ERC7	Use of functional fluid at industrial site in closed system

2.5.1 Scenario contributing to the control of the environmental exposure for ERC6a, ERC7 : Use of intermediate Use of functional fluid at industrial site

Technical conditions and measures / Organizational measures

Remarks	Measures to limit atmospheric emissions : < 7 t/year : none > 7 t/year : gas washing Emissions of wastewater are negligible, the process being done without contact with water. In case of contact with water: check pH value, if necessary, neutralization

Conditions and measures related to the municipal wastewater treatment plant

Remarks	None

2.5.2 Contribution scenario for controlling workers' exposure for general measures pour PROC8a, PROC8b, PROC9, PROC19 :

Transfer of substance or mixture (charging and discharging) at non-dedicated facilities,

Transfer of substance or mixture (charging and discharging) at dedicated facilities,

Transfer of substance or mixture into small containers (dedicated filling line, including weighing),

Manual activities involving hand contact

Connection and disconnection of vials / barrels

Product characteristics	
Concentration of the Substance in the Mixture / Article	Covers concentrations up to 100%
Physical Form (at the time of use)	Liquefied gas
Frequency and duration of use	
Frequency of use	365 days / year
Remarks	Covers daily exposures up to 12 hours (unless specified otherwise)
Human factors that are not influenced by risk management	
Exposure through the skin	Palms of both hands(480 cm^2)
Respiratory volume	10 m^3/session
Technical conditions and measures	Use a cabin / housing with suction. Ensure the use of tools with a suction device. Pressure <100 mbar Ensure the correct condition of joints and connections Use in semi-automatic and especially closed filling systems
Organizational measures to prevent / limit releases, dispersions, and exposures	Ensure that employees are trained to reduce exposures as much as possible. Inspect, test and regularly maintain all control measures
Conditions and measures related to the assessment of personal protection, hygiene and health	Where there is a risk of exposure: Wear personal protective equipment
Technical conditions and measures	Use a cabin / housing with suction. Ensure the use of tools with a suction device. Pressure <100 mbar Ensure the correct condition of joints and connections Use in semi-automatic and especially closed filling systems

2.5.3 Scenario of contribution to controlling worker exposure for general measures PROC8a, PROC8b, PROC9:

Transfer of substance or mixture (charging and discharging) at non-dedicated facilities,

Transfer of substance or mixture (charging and discharging) at dedicated facilities,

Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Connection and disconnection of vials / barrels

Product characteristics	
Concentration of the Substance in the Mixture / Article	Covers concentrations up to 100%
Physical Form (at the time of use)	Liquefied gas
Frequency and duration of use	
Frequency of use	480 min
Remarks	-
Human factors that are not influenced by risk management	
Exposure through the skin	Palms of both hands(480 cm^2)
Respiratory volume	10 m^3/day
Technical conditions and measures	Use a cabin / housing with suction. Ensure the use of tools with a suction device. Pressure <100 mbar Ensure the correct condition of joints and connections Use in semi-automatic and especially closed filling systems
Organizational measures to prevent / limit releases, dispersions, and exposures	Ensure that employees are trained to reduce exposures as much as possible. Inspect, test and regularly maintain all control measures
Conditions and measures related to the assessment of personal protection, hygiene and health	Where there is a risk of exposure: Wear personal protective equipment

2.5.4 Scenario of contribution to controlling worker exposure for general measures PROC8a, PROC8b, PROC9, PROC19:

Transfer of substance or mixture (charging and discharging) at non-dedicated facilities,

Transfer of substance or mixture (charging and discharging) at dedicated facilities,

Transfer of substance or mixture into small containers (dedicated filling line, including weighing),

Manual activities involving hand contact

Connection and disconnection of vials / barrels

Product characteristics	
Concentration of the Substance in the Mixture / Article	Covers concentrations up to 100%
Physical Form (at the time of use)	Liquefied gas

Frequency and duration of use

Frequency of use	< 15 min
Remarks	-

Human factors that are not influenced by risk management	
Exposure through the skin	Palms of both hands(480 cm^2)
Respiratory volume	10 m^3/day
Technical conditions and measures	Use a cabin / housing with suction. Ensure the use of tools with a suction device. Pressure <100 mbar Ensure the correct condition of joints and connections Use in semi-automatic and especially closed filling systems
Organizational measures to prevent / limit releases, dispersions, and exposures	Ensure that employees are trained to reduce exposures as much as possible. Inspect, test and regularly maintain all control measures
Conditions and measures related to the assessment of personal protection, hygiene and health	Where there is a risk of exposure: Wear personal protective equipment

2.5.6 Exposure estimation and reference of its source

Environment

Contribution to the scenario	Exposure Assessment Methods	Specific conditions	Compartment	Type of value	Exposure level	RCR
ERC6a ERC7	EUSES	Sulphur dioxide	Air		0.001035 mg/m^3	< 0.95
Remarks:		LEV = Local ventilation EPR = Respiratory protective equipment				

Workers

Contribution to the scenario	Exposure Assessment Methods	Specific conditions	Type of value	Exposure level	RCR
PROC8a PROC8b PROC9	ECETOC TRA	Inside with ventilation with aspiration at the source	Inhalation	0.4 ppm	0.8
	ECETOC TRA	Inside with ventilation with aspiration at the source	Dermal	Data not available	
PROC8a PROC8b PROC9 PROC19	ECETOC TRA	Outside	Inhalation	0.4 ppm	0.8
	ECETOC TRA	Outside	Dermal	Data not available	-
PROC1	ECETOC TRA	Outside	Inhalation	0.01 ppm	0.02
	ECETOC TRA	Outside	Dermal	Data not available	-

PROC2 PROC3 PROC4	ECETOC TRA	Outside	Inhalation	0.41 ppm	0.82
PROC5 PROC8b PROC22 PROC23	ECETOC TRA	Outside	Dermal	Data not available	-

2.5.13 Advise for the downstream user to evaluate if they are working within the boundaries defined by the exposure scenario

The available safety data sheet informs the user of the risk management measures and operating conditions that allow him to work safely with the substance or mixture. If other risk management / operational conditions are adopted, the user must ensure that risks / operational conditions are adopted, the user must ensure that the risks are managed at least at an equivalent level