

Safety data sheet
according to 1907/2006/EC, Article 31 Commission
regulation (EU) 2020/878

Printing date 10.03.2023

Version number 10.0 (replaces version 9.0)

Revision: 10.03.2023

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

1.1 Product identifier

• **Trade name:** Formic acid, eluent additive for LC-MS

• **Article number:** AC1076

• **CAS Number:**

64-18-6

• **EC number:**

200-579-1

• **Index number:**

607-001-00-0

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

No further relevant information available.

• **Application of the substance / the preparation:** Laboratory reagent

1.3 Details of the supplier of the safety data sheet

• **Manufacturer/Supplier:**

Scharlab, S.L.

C/Gato Pérez, 33. Pol.Ind. Mas d'en Cisa

08181 Sentmenat (Barcelona) SPAIN

Tel: (+34) 93 745 64 00 - FAX: (+34) 93 715 27 65

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Internet Web Site: www.scharlab.com

• **Regional representation:**

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• **Further information obtainable from:** technical department

• **1.4 Emergency telephone number:**

Please contact the regional Scharlab distributor/dealer in your country

During normal opening times: Scharlab, S.L. (+34) 93 715 18 11

SECTION 2: Hazards identification

• **2.1 Classification of the substance or mixture**

• **Classification according to Regulation (EC) No 1272/2008**



flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.



corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage.

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Acute Tox. 4 H302 Harmful if swallowed.

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the GB CLP regulation.

Hazard pictograms

GHS02 GHS05 GHS06

Signal word Danger**Hazard statements**

H226 Flammable liquid and vapour.

H302 Harmful if swallowed.

H331 Toxic if inhaled.

H314 Causes severe skin burns and eye damage.

Precautionary statements

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

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor.

P370+P378 In case of fire: Use CO₂, powder or water spray to extinguish.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**SECTION 3: Composition/information on ingredients****3.1 Substances****CAS No. Description**

64-18-6 formic acid

Identification number(s)**EC number:** 200-579-1**Index number:** 607-001-00-0**SECTION 4: First aid measures****4.1 Description of first aid measures****General information:**

Personal protection for the First Aider.

Immediately remove any clothing soiled by the product.

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• After inhalation:

In case of unconsciousness place patient stably in side position for transportation.
Take affected persons into fresh air and keep quiet.

• After skin contact:

Immediately wash with water and soap and rinse thoroughly.
Seek medical treatment.

• After eye contact:

Rinse opened eye for several minutes under running water. Then consult a doctor.
In the event that the injured person wears contact lenses, they must be removed as long as they are not stuck to the eyes, otherwise additional damage could occur.

• After swallowing:

Rinse mouth and drink water (2 glasses) if the affected is conscious. Seek medical help immediately.

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

The main symptoms are described for different cases of contact: Skin, eyes, inhalation and ingestion.

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

Treat symptomatically.

SECTION 5: Firefighting measures**• 5.1 Extinguishing media****• Suitable extinguishing agents:**

CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

• For safety reasons unsuitable extinguishing agents: Pressurized water jet**• 5.2 Special hazards arising from the substance or mixture**

Under certain fire conditions, traces of other toxic gases cannot be excluded, e.g.:
Carbon monoxide (CO)

• 5.3 Advice for firefighters**• Protective equipment:**

No special measures required.

In the work of extinction it is necessary to provide respiratory protection and full chemical protective clothing.

Cool exposed containers with water spray or mist.

• Additional information

Collect contaminated fire fighting water separately. It must not enter the sewage system.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures**• 6.1 Personal precautions, protective equipment and emergency procedures**

Use respiratory protective device against the effects of fumes/dust/aerosol.

Keep away from ignition sources.

Wear protective equipment. Keep unprotected persons away.

• 6.2 Environmental precautions:

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

• 6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralising agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

• 6.4 Reference to other sections

See Section 7 for information on safe handling.

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See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Keep away from heat and sources of ignition.
Keep receptacles tightly sealed.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
Do not eat, drink or smoke during use.
Wash hands after any manipulation.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep container tightly sealed.
See product's label for recommended storage temperature.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**
64-18-6 formic acid
WEL Long-term value: 9.6 mg/m³, 5 ppm
- **DNELs**
DNEL worker, cronic. Acute local and systematic effects: Inhalative - 9.5 mg/m³
DNEL consumer, acute. Local effects: Inhalative - 9.5 mg/m³
DNEL consumer, acute. Systematic effects: Inhalative - 9.5 mg/m³
DNEL consumer, prolonged. Local effects: Inhalative - 3 mg/m³
DNEL consumer, prolonged. Systematic effects: Inhalative - 3 mg/m³
DNEL worker, acute. Local effects: Inhalative - 19 mg/m³
DNEL worker, acute. Systematic effects: Inhalative - 19 mg/m³
- **PNECs**
PNEC (Fresh water): 2 mg/L
PNEC (Sea water): 0.2 mg/L
PNEC (Freshwater sediments): 13.4 mg/kg
PNEC (Seawater sediments): 1.34 mg/kg
PNEC (Soil): 1.5 mg/kg
PNEC (Periodic water release): 1 mg/L
PNEC (Residual water depuration system): 7.2 mg/kg
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Appropriate engineering controls** No further data; see item 7.
- **Individual protection measures, such as personal protective equipment**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.

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Avoid contact with the eyes and skin.

• Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

• Hand protection

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

• Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

• Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

• Eye/face protection

Tightly sealed goggles

SECTION 9: Physical and chemical properties

• 9.1 Information on basic physical and chemical properties**• General Information****• Physical state**

Fluid

• Colour:

Colourless

• Odour:

Acrid

• Odour threshold:

Not determined.

• Melting point/freezing point:

4 °C

• Boiling point or initial boiling point and boiling range

100 °C

• Flammability

Not applicable.

• Lower and upper explosion limit**• Lower:**

14 Vol %

• Upper:

33 Vol %

• Flash point:

48 °C

• Ignition temperature:

520 °C

• Decomposition temperature:

Not determined.

• pH

2.2

• Viscosity:**• Kinematic viscosity**

Not determined.

• Dynamic at 20 °C:

1.72 mPas

• Solubility**• water:**

Fully miscible.

• Partition coefficient n-octanol/water (log value)

Not determined.

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- **Vapour pressure at 20 °C:** 43 hPa
- **Density and/or relative density**
- **Density at 20 °C:** 1.22 g/cm³
- **Relative density** Not determined.
- **Vapour density** Not determined.
- **9.2 Other information**
- **Appearance:**
- **Form:** Fluid
- **Important information on protection of health and environment, and on safety.**
- **Auto-ignition temperature:** Not determined.
- **Explosive properties:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
- **Molecular weight** 46.03 g/mol
- **Change in condition**
- **Evaporation rate** Not determined.
- **Information with regard to physical hazard classes**
- **Explosives** Void
- **Flammable gases** Void
- **Aerosols** Void
- **Oxidising gases** Void
- **Gases under pressure** Void
- **Flammable liquids** Flammable liquid and vapour.
- **Flammable solids** Void
- **Self-reactive substances and mixtures** Void
- **Pyrophoric liquids** Void
- **Pyrophoric solids** Void
- **Self-heating substances and mixtures** Void
- **Substances and mixtures, which emit flammable gases in contact with water** Void
- **Oxidising liquids** Void
- **Oxidising solids** Void
- **Organic peroxides** Void
- **Corrosive to metals** Void
- **Desensitised explosives** Void

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability** Stable at room temperature.
- **10.3 Possibility of hazardous reactions**
Exothermic reaction.
Reacts with alkali, amines and strong acids.
- **10.4 Conditions to avoid** Thermal decomposition: > 30 °C
- **10.5 Incompatible materials:**
Bases
Various metals
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

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SECTION 11: Toxicological information**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity**

Harmful if swallowed.

Toxic if inhaled.

LD/LC50 values relevant for classification:

Oral LD50 730 mg/kg (rat)

Inhalative LC50/4 h 7.85 mg/l (rat)

Skin corrosion/irritation

Skin - Rabbit

Causes severe skin burns and eye damage.

Respiratory or skin sensitisation

Sensitisation test - Guinea pig

Result: negative

11.2 Information on other hazards**Endocrine disrupting properties** Substance is not listed.**SECTION 12: Ecological information****12.1 Toxicity****Aquatic toxicity:**

Toxicity to fish

CL50 - Danio rerio (pez zebra) - >130 mg/l (96h)

Toxicity to daphnia and other aquatic invertebrates

EC50 - Daphnia magna (large sea flea) - 365 mg/L - 48 h

NOEC - Daphnia magna (large sea flea) - >100 mg/L - 21h

Toxicity to bacteria

EC10 - Activated sludge - 72 mg/L - 13 d

12.2 Persistence and degradability

COD (Dissolved organic carbon)

Result: 100 % (Exposure time: 9 days) - OECD

Aerobic

Easily biodegradable

12.3 Bioaccumulative potential Does not accumulate in organisms**12.4 Mobility in soil**

Log Koc: 1.25 (25°C)

Surface tension: 71.5 mN/m

12.5 Results of PBT and vPvB assessment**PBT:** Not applicable.**vPvB:** Not applicable.**12.6 Endocrine disrupting properties**

The product does not contain substances with endocrine disrupting properties.

12.7 Other adverse effects**Additional ecological information:****General notes:**

Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralised.

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recommendation

Must be specially treated adhering to official regulations.

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Uncleaned packaging:

Recommendation:

Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

Packagings that may not be cleansed are to be disposed of in the same manner as the product.

Recommended cleansing agents: Water, if necessary together with cleansing agents.

SECTION 14: Transport information

14.1 UN number or ID number

ADR, IMDG, IATA

UN1779

14.2 UN proper shipping name

ADR

1779 FORMIC ACID

IMDG, IATA

FORMIC ACID

14.3 Transport hazard class(es)

ADR



Class

8 Corrosive substances.

Label

8+3

IMDG



Class

8 Corrosive substances.

Label

8/3

IATA



Class

8 Corrosive substances.

Label

8 (3)

14.4 Packing group

ADR, IMDG, IATA

II

14.5 Environmental hazards:

Marine pollutant:

No

14.6 Special precautions for user

Warning: Corrosive substances.

Hazard identification number (Kemler code):

80

EMS Number:

F-A,S-B

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- **Segregation groups** (SGG1) Acids
 - **Stowage Category** A
 - **Segregation Code** SG36 Stow "separated from" SGG18-alkalis.
SG49 Stow "separated from" SGG6-cyanides
 - **14.7 Maritime transport in bulk according to IMO instruments** Not applicable.
 - **Transport/Additional information:**
-
- **ADR**
 - **Limited quantities (LQ)** 1L
 - **Transport category** 2
 - **Tunnel restriction code** D/E
 - **UN "Model Regulation":** UN 1779 FORMIC ACID, 8 (3), II

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I -**
- **Seveso category**
H2 ACUTE TOXIC
P5c FLAMMABLE LIQUIDS
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** product safety department
- **Contact:** msds@scharlab.com
- **Abbreviations and acronyms:**
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 ICAO: International Civil Aviation Organisation
 ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 DNEL: Derived No-Effect Level (UK REACH)
 PNEC: Predicted No-Effect Concentration (UK REACH)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative
 Flam. Liq. 3: Flammable liquids – Category 3
 Acute Tox. 4: Acute toxicity – Category 4
 Acute Tox. 3: Acute toxicity – Category 3
 Skin Corr. 1A: Skin corrosion/irritation – Category 1A

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Annex: Exposure scenario 1**1 - Short title of the exposure scenario****Sector of Use**

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

Process category PROC15 Use as laboratory reagent**Environmental release category**

ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

Description of the activities / processes covered in the Exposure Scenario

See section 1 of the annex to the Safety Data Sheet.

2 - Conditions of use**Duration and frequency**

8hrs (full working shift).

5 workdays/week.

Environment Indoor use**Physical parameters**

Vapor pressure: 4271 Pa

Process temperature: 20 °C

Physical state Fluid**Concentration of the substance in the mixture**

It covers a percentage of substance in the product up to 100 %

Other operational conditions**Other operational conditions affecting environmental exposure** No special measures required.**Other operational conditions affecting worker exposure**

Avoid contact with eyes.

Avoid contact with the skin.

Observe instructions for use / storage.

Other operational conditions affecting consumer exposure Keep out of the reach of children.**Other operational conditions affecting consumer exposure during the use of the product**

Not applicable.

Risk management measures

Use in a ventilated with filtered air pressurized cabin. Effectiveness 90%

Worker protection**Organisational protective measures**

Ensure operatives are trained to minimise exposures.

Clean equipment and the work area every day.

Keep good industrial hygiene.

Deploy only trained chemical workers.

The appropriate type of chemical protective glove has to be selected specifically, depending on the concentration and quantity of hazardous substances in the workplace.

The employer must also ensure that the required personal protective equipment is available and it is used as directed.

Handling procedures must be well documented.

Workers processes / areas identified risk should be trained to :

a) Avoid working without respiratory protection

b) To understand the corrosive properties of the substance with they work

c) Observe the safest procedures indicated by the employer

Ensure that activities are executed by specialists or authorised personnel only.

Technical protective measures

Minimization of manual phases.

Replace, if possible, manual processes by automated processes and / or closed. This would avoid irritating mists, sprays and splashes.

Personal protective measures

Avoid contact with the skin.

Avoid contact with the eyes.

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Tightly sealed goggles

Face protection

Protective work clothing

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Measures for consumer protection**

Ensure adequate labelling.

Keep locked up and out of the reach of children.

- **Environmental protection measures**

- **Water**

Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.

- **Disposal measures**

Disposal must be made according to official regulations.

Ensure that waste is collected and contained.

- **Disposal procedures**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

- **Waste type** Partially emptied and uncleaned packaging

- **3 - Exposure estimation**

- **Worker (dermal)**

The exposure estimation was carried out in accordance with ECETOC TRA.

No significant dermal exposure

- **Worker (inhalation)**

The exposure estimation was carried out in accordance with ECETOC TRA.

PROC 15: 1.9177 mg/m³, RCR 0.202

- **Consumer** Not relevant for this Exposure Scenario.

- **4 - Guidance for downstream users** No further relevant information available.

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Annex: Exposure scenario 2

- **1 - Short title of the exposure scenario** Laboratory use
- **Sector of Use**
SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
- **Process category** PROC15 Use as laboratory reagent
- **Environmental release category**
ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
- **Description of the activities / processes covered in the Exposure Scenario**
See section 1 of the annex to the Safety Data Sheet.
- **2 - Conditions of use**
- **Duration and frequency**
8hrs (full working shift).
5 workdays/week.
- **Physical parameters**
Vapor pressure: 4271 Pa
Process temperature: 20 °C
- **Physical state** Fluid
- **Concentration of the substance in the mixture**
It covers a percentage of substance in the product up to 100 %
- **Other operational conditions** Observe the general safety regulations when handling chemicals.
- **Other operational conditions affecting environmental exposure** No special measures required.
- **Other operational conditions affecting worker exposure**
Indoor application.
Avoid contact with the skin, eyes and clothing.
Avoid exposure - obtain special instructions before use.
Avoid direct contact with the chemical /product / preparation by organisational measures.
Gloves required during a shift
Respiratory protection is required in work areas with inadequate ventilation and during spraying application.
- **Other operational conditions affecting consumer exposure** Keep out of the reach of children.
- **Other operational conditions affecting consumer exposure during the use of the product**
Not applicable.
- **Risk management measures**
- **Worker protection**
- **Organisational protective measures**
Deploy only trained chemical workers.
Ensure operatives are trained to minimise exposures.
The employer must also ensure that the required personal protective equipment is available and it is used as directed.
The appropriate type of chemical protective glove has to be selected specifically, depending on the concentration and quantity of hazardous substances in the workplace.
Workers processes / areas identified risk should be trained to :
 - a) Avoid working without respiratory protection
 - b) To understand the corrosive properties of the substance with they work
 - c) Observe the safest procedures indicated by the employerEnsure that activities are executed by specialists or authorised personnel only.
Keep good industrial hygiene.
Do not exceed normal working hours per worker.
- **Technical protective measures**
Minimization of manual phases.
Replace, if possible, manual processes by automated processes and / or closed. This would avoid irritating mists, sprays and splashes.
Avoid splashing.

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Handle with care. Avoid jolting, friction and impact.

- **Personal protective measures**

Avoid contact with the skin.

Avoid contact with the eyes.

Tightly sealed goggles

Safety glasses

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Face protection

Protective work clothing

- **Measures for consumer protection**

Ensure adequate labelling.

Keep locked up and out of the reach of children.

- **Environmental protection measures**

- **Water**

Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.

- **Disposal measures** Ensure that waste is collected and contained.

- **Disposal procedures**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

- **Waste type** Partially emptied and uncleaned packaging

- **3 - Exposure estimation**

To estimate exposures in the workplace has been used ECETOC TRA tool unless otherwise indicated.

- **Worker (oral)** No significant oral exposure

- **Worker (dermal)** No significant dermal exposure

- **Worker (inhalation)**

PROC 15: 3.8354 mg/m³, RCR 0.4037

The exposure estimation was carried out in accordance with ECETOC TRA.

- **Consumer** Not relevant for this Exposure Scenario.

- **4 - Guidance for downstream users**

Whether the downstream user uses the substance / the mixture within the scope of the Exposure Scenario can be determined by means of a technical assessment.