

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 6.7
Revision Date 21.03.2023
Print Date 21.10.2024**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Acetone

Product Number : RTC000078

Brand : Sigma-Aldrich

REACH No. : 01-2119471330-49-XXXX

CAS-No. : 67-64-1

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

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Merck Life Science UK Limited
New Road
The Old Brickyard
GILLINGHAM
Dorset
SP8 4XT
UNITED KINGDOM

Telephone : +44 (0)1747 833-000

Fax : +44 (0)1747 833-313

E-mail address : TechnicalService@merckgroup.com

1.4 Emergency telephone

Emergency Phone # : +44 (0)870 8200418 (CHEMTREC)

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008 as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567

Flammable liquids (Category 2), H225

Eye irritation (Category 2), H319

Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567

Pictogram



Signal Word

Danger

Hazard statement(s)

H225 Highly flammable liquid and vapor.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

Precautionary statement(s)

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard information (EU)

EUH066 Repeated exposure may cause skin dryness or cracking.

Reduced Labeling (<= 125 ml)**Pictogram**

Signal Word Danger

Hazard statement(s) none

Precautionary statement(s) none

Supplemental Hazard information (EU)

EUH066 Repeated exposure may cause skin dryness or cracking.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients**3.1 Substances**

Formula : C₃H₆O
Molecular weight : 58.08 g/mol
CAS-No. : 67-64-1
EC-No. : 200-662-2

Component		Classification	Concentration
acetone			
CAS-No.	67-64-1	Flam. Liq. 2; Eye Irrit. 2; STOT SE 3; H225, H319, H336 Concentration limits: >= 20 %: STOT SE 3, H336;	<= 100 %
EC-No.	200-662-2		
Index-No.	606-001-00-8		

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

Consult a physician. Show this material safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Dry powder Dry sand

Unsuitable extinguishing media

Do NOT use water jet.

5.2 Special hazards arising from the substance or mixture

Carbon oxides

Combustible.

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in cool place.

Storage class

Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

Component	CAS-No.	Control parameters	Value	Basis
acetone	67-64-1	TWA	500 ppm 1,210 mg/m ³	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
	Remarks	Indicative		
		TWA	500 ppm 1,210 mg/m ³	UK. EH40 WEL - Workplace Exposure Limits
		STEL	1,500 ppm 3,620 mg/m ³	UK. EH40 WEL - Workplace Exposure Limits

Derived No Effect Level (DNEL)

Application Area	Routes of exposure	Health effect	Value
Workers	Skin contact	Long-term systemic effects	186mg/kg BW/d

Consumers	Ingestion	Long-term systemic effects	62mg/kg BW/d
Consumers	Skin contact	Long-term systemic effects	62mg/kg BW/d
Workers	Inhalation	Acute systemic effects	2420 mg/m3
Workers	Inhalation	Long-term systemic effects	1210 mg/m3
Consumers	Inhalation	Long-term systemic effects	200 mg/m3

Predicted No Effect Concentration (PNEC)

Compartment	Value
Soil	33.3 mg/kg
Sea water	1.06 mg/l
Fresh water	10.6 mg/l
Sea sediment	3.04 mg/kg
Fresh water sediment	30.4 mg/kg
Onsite sewage treatment plant	100 mg/l

8.2 Exposure controls

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Body Protection

Impervious clothing, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- a) Physical state clear, liquid
- b) Color colorless

c) Odor	pungent, weakly aromatic
d) Melting point/freezing point	Melting point: -94.8 °C
e) Initial boiling point and boiling range	56.0 °C at 1013 hPa
f) Flammability (solid, gas)	No data available
g) Upper/lower flammability or explosive limits	Upper explosion limit: 13 %(V) Lower explosion limit: 2 %(V)
h) Flash point	-17 °C
i) Autoignition temperature	465.0 °C
j) Decomposition temperature	Distillable in an undecomposed state at normal pressure.
k) pH	5 - 6 at 395 g/l at 20 °C
l) Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
m) Water solubility	soluble, in all proportions
n) Partition coefficient: n-octanol/water	No data available
o) Vapor pressure	533.3 hPa at 39.5 °C 245.3 hPa at 20.0 °C
p) Density	0.79 g/cm ³ at 20 °C
Relative density	No data available
q) Relative vapor density	No data available
r) Particle characteristics	No data available
s) Explosive properties	No data available
t) Oxidizing properties	none

9.2 Other safety information

Conductivity	0.01 µS/cm at 20 °C
Surface tension	23.2 mN/m at 20.0 °C

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Heat, flames and sparks.

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - female - 5,800 mg/kg

Remarks: (ECHA)

LC50 Inhalation - Rat - 4 h - 76 mg/l - vapor

Remarks: Unconsciousness

Drowsiness

Dizziness

(External MSDS)

LD50 Dermal - Rabbit - 20,000 mg/kg

Remarks: (IUCLID)

Skin corrosion/irritation

Skin - Rabbit

Result: Mild skin irritation - 24 h

(Draize Test)

Remarks: (RTECS)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Eye irritation - 24 h

(Draize Test)

Remarks: (RTECS)

Respiratory or skin sensitization

Maximization Test - Guinea pig

Result: Not a skin sensitizer.

Remarks: (ECHA)

Chronic exposure may cause dermatitis.

Germ cell mutagenicity

Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Mouse lymphoma test

Metabolic activation: without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Inhalation - May cause drowsiness or dizziness. - Narcotic effects

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information

Endocrine disrupting properties

Product:

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

RTECS: AL3150000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

After absorption:

Headache

Salivation

Nausea

Vomiting

Dizziness

narcosis

Coma

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

Kidney - Irregularities - Based on Human Evidence

Skin - Dermatitis - Based on Human Evidence

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish

flow-through test LC50 - Pimephales promelas (fathead minnow) -
6,210 mg/l - 96 h

(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates static test LC50 - Daphnia pulex (Water flea) - 8,800 mg/l - 48 h
Remarks: (ECHA)

Toxicity to algae static test NOEC - M.aeruginosa - 530 mg/l - 8 d
(DIN 38412)
Remarks: (maximum permissible toxic concentration)
(IUCLID)

Toxicity to bacteria static test EC50 - activated sludge - 61.15 mg/l - 30 min
(OECD Test Guideline 209)

Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity) flow-through test NOEC - Daphnia magna (Water flea) - 2,212 mg/l - 28 d
Remarks: (ECHA)

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 28 d
Result: 91 % - Readily biodegradable.
(OECD Test Guideline 301B)

Biochemical Oxygen Demand (BOD) 1,850 mg/g
Remarks: (IUCLID)

Chemical Oxygen Demand (COD) 2,070 mg/g
Remarks: (IUCLID)

Theoretical oxygen demand 2,200 mg/g
Remarks: (Lit.)

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 1090

IMDG: 1090

IATA: 1090

14.2 UN proper shipping name

ADR/RID: ACETONE

IMDG: ACETONE

IATA: Acetone

14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA: 3

14.4 Packaging group

ADR/RID: II

IMDG: II

IATA: II

14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

14.6 Special precautions for user

Tunnel restriction code : (D/E)

Further information : No data available

SECTION 15: Regulatory information

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

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

Authorisations and/or restrictions on use

Regulation (EU) 2019/1148 on the marketing : acetone
and use of explosives precursors

National legislation

Seveso III: Directive 2012/18/EU of the European : FLAMMABLE LIQUIDS
Parliament and of the Council on the control of
major-accident hazards involving dangerous
substances.

15.2 Chemical Safety Assessment

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

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

EUH066	Repeated exposure may cause skin dryness or cracking.
H225	Highly flammable liquid and vapor.
H319	Causes serious eye irritation.
H336	Highly flammable liquid and vapor.

Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

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Annex: Exposure scenario

Identified uses:

Use: Manufacturing and on-site use

SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
SU 3, SU9: Industrial uses: Uses of substances as such or in preparations at industrial sites, Manufacture of fine chemicals
PC19: Intermediate
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
PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities
PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC15: Use as laboratory reagent
ERC1: Manufacture of substances

Use: Formulation of preparations

SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
SU 10: Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)
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)
PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC15: Use as laboratory reagent
ERC2: Formulation of preparations

Use: Used as laboratory reagent.

SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
SU 3, SU 22, SU24: Industrial uses: Uses of substances as such or in preparations at industrial sites, Professional uses: Public domain (administration, education, entertainment, services, craftsmen), Scientific research and development
PC21: Laboratory chemicals
PROC10: Roller application or brushing
PROC15: Use as laboratory reagent
ERC4, ERC8a: Industrial use of processing aids in processes and products, not becoming part of articles, Wide dispersive indoor use of processing aids in open systems

Use: Industrial use of processing aids in processes and products, not becoming part of articles

SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
SU 3, SU9: Industrial uses: Uses of substances as such or in preparations at industrial sites, Manufacture of fine chemicals
PC20: Products such as pH-regulators, flocculants, precipitants, neutralization agents
PC21: Laboratory chemicals
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)
PROC6: Calendering operations
PROC7: Industrial spraying
PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC10: Roller application or brushing
PROC13: Treatment of articles by dipping and pouring
PROC15: Use as laboratory reagent
ERC4, ERC6b, ERC1: Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use of reactive processing aids, Manufacture of substances

1. Short title of Exposure Scenario: Manufacturing and on-site use

Main User Groups	: SU 3
Sectors of end-use	: SU 3, SU9
Chemical product category	: PC19
Process categories	: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15
Environmental Release Categories	: ERC1:

2. Exposure scenario

2.1 Contributing scenario controlling environmental exposure for: ERC1

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15, PC19

Product characteristics

Concentration of the Substance in : Covers the percentage of the substance in the product

Mixture/Article up to 100 % (unless stated differently).
Physical Form (at time of use) : High volatile liquid

Frequency and duration of use

Application duration : > 4 h
Frequency of use : 220 days/year

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Provide adequate ventilation., Good work practice required.

Organizational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimize exposures.

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

Use suitable eye protection and gloves., For personal protection see section 8.

3. Exposure estimation and reference to its source

Environment

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR*
PROC1	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	0.03 mg/kg BW/d	0
PROC1	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.02 mg/m ³	0
PROC2	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.02 mg/m ³	0
PROC2	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	0.03 mg/kg BW/d	0
PROC3	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	84.58 mg/m ³	0.07
PROC3	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	0.69 mg/kg BW/d	0.004
PROC4	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	6.86 mg/kg BW/d	0.037
PROC4	ECETOC TRA	Without Local Exhaust	Inhalation	169.17 mg/m ³	0.14

		Ventilation			
PROC8a	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	13.71 mg/kg BW/d	0.074
PROC8a	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	422.92 mg/m ³	0.35
PROC8b	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	13.71 mg/kg BW/d	0.074
PROC8b	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	253.75 mg/m ³	0.21
PROC9	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	338.33 mg/m ³	0.28
PROC9	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	6.86 mg/kg BW/d	0.037
PROC15	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	84.58 mg/m ³	0.07
PROC15	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	0.34 mg/kg BW/d	0.002

*Risk characterisation ratio

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

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

1. Short title of Exposure Scenario: Formulation of preparations

Main User Groups : **SU 3**
 Sectors of end-use : **SU 10**
 Process categories : **PROC2, PROC3, PROC4, PROC5, PROC8b, PROC9, PROC15**
 Environmental Release Categories : **ERC2:**

2. Exposure scenario

2.1 Contributing scenario controlling environmental exposure for: ERC2

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

2.2 Contributing scenario controlling worker exposure for: PROC2, PROC3, PROC4, PROC5, PROC8b, PROC9, PROC15

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : High volatile liquid

Frequency and duration of use

Application duration : > 4 h
Frequency of use : 220 days/year

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Provide adequate ventilation., Good work practice required.

Organizational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimize exposures.

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

Use suitable eye protection and gloves., For personal protection see section 8.

3. Exposure estimation and reference to its source**Environment**

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR*
PROC2	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	0.03 mg/kg BW/d	0
PROC2	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.02 mg/m ³	0
PROC3	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	0.69 mg/kg BW/d	0.004
PROC3	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	84.58 mg/m ³	0.07
PROC4	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	169.17 mg/m ³	0.14
PROC4	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	6.86 mg/kg BW/d	0.037
PROC5	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	422.92 mg/m ³	0.35

PROC5	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	13.71 mg/kg BW/d	0.074
PROC8b	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	253.75 mg/m ³	0.21
PROC8b	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	13.71 mg/kg BW/d	0.074
PROC9	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	6.86 mg/kg BW/d	0.037
PROC9	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	338.33 mg/m ³	0.28
PROC15	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	84.58 mg/m ³	0.07
PROC15	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	0.34 mg/kg BW/d	0.002

*Risk characterisation ratio

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

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

1. Short title of Exposure Scenario: Used as laboratory reagent.

Main User Groups : **SU 22**
 Sectors of end-use : **SU 3, SU 22, SU24**
 Chemical product category : **PC21**
 Process categories : **PROC10, PROC15**
 Environmental Release Categories : **ERC4, ERC8a:**

2. Exposure scenario

2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC8a

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

2.2 Contributing scenario controlling worker exposure for: PROC10, PROC15, PC21

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

Physical Form (at time of use) : High volatile liquid

Frequency and duration of use

Application duration : > 4 h
Frequency of use : 220 days/year

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Provide adequate ventilation., Good work practice required.

Organizational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimize exposures.

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

Use suitable eye protection and gloves., For personal protection see section 8.

3. Exposure estimation and reference to its source

Environment

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR*
PROC10	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	27.43 mg/kg BW/d	0.147
PROC10	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	422.92 mg/m ³	0.35
PROC15	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	84.58 mg/m ³	0.07
PROC15	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	0.34 mg/kg BW/d	0.002

*Risk characterisation ratio

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

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

1. Short title of Exposure Scenario: Industrial use of processing aids in processes and products, not becoming part of articles

Main User Groups : **SU 3**
Sectors of end-use : **SU 3, SU9**
Chemical product category : **PC20, PC21**
Process categories : **PROC3, PROC4, PROC5, PROC6, PROC7, PROC8b, PROC9, PROC10, PROC13, PROC15**
Environmental Release Categories : **ERC4, ERC6b, ERC1:**

2. Exposure scenario

2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC6b, ERC1

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

2.2 Contributing scenario controlling worker exposure for: PROC3, PROC4, PROC5, PROC6, PROC7, PROC8b, PROC9, PROC10, PROC13, PROC15, PC20, PC21

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

Physical Form (at time of use) : High volatile liquid

Frequency and duration of use

Application duration : > 4 h

Frequency of use : 220 days/year

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Provide adequate ventilation., Good work practice required.

Organizational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimize exposures.

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

Use suitable eye protection and gloves., For personal protection see section 8.

3. Exposure estimation and reference to its source

Environment

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR*
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PROC3	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	84.58 mg/m ³	0.07
PROC3	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	0.69 mg/kg BW/d	0.004
PROC4	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	169.17 mg/m ³	0.14
PROC4	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	6.86 mg/kg BW/d	0.037
PROC5	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	13.71 mg/kg BW/d	0.074
PROC5	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	422.92 mg/m ³	0.35
PROC6	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	27.43 mg/kg BW/d	0.147
PROC6	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	422.92 mg/m ³	0.35
PROC7	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	42.86 mg/kg BW/d	0.23
PROC7	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	845.83 mg/m ³	0.699
PROC8b	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	253.75 mg/m ³	0.21
PROC8b	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	13.71 mg/kg BW/d	0.074
PROC9	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	6.86 mg/kg BW/d	0.037
PROC9	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	338.33 mg/m ³	0.28
PROC10	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	422.92 mg/m ³	0.35
PROC10	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	27.43 mg/kg BW/d	0.147
PROC13	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	422.92 mg/m ³	0.35
PROC13	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	13.71 mg/kg BW/d	0.074
PROC15	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	84.58 mg/m ³	0.07

		Exhaust Ventilation			
PROC15	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	0.34 mg/kg BW/d	0.002
PROC15	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	84.58 mg/m ³	0.07
PROC15	ECETOC TRA	Without Local Exhaust Ventilation	Dermal	0.34 mg/kg BW/d	0.002

*Risk characterisation ratio

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

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