SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 31.07.2018 Version 20.6

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

1.1 Product identifier

Catalogue No.	100020
Product name	Acetone for liquid chromatography LiChrosolv®
REACH Registration Number	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	Reagent for analysis, Analytical and preparative chromatography In compliance with the conditions described in the annex to this safety data sheet.

1.3 Details of the supplier of the safety data sheet

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department	LS-QHC * e-mail: prodsafe@merckgroup.com

1.4 Emergency telephone number

Please contact the regional company representation in your country.

SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquid, 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 (REGULATION (EC) No 1272/2008)

Hazard pictograms

Signal word

Danger

Hazard statements

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

EUH066 Repeated exposure may cause skin dryness or cracking.

Precautionary statements

Prevention

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

P240 Ground/bond container and receiving equipment.

Response

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

Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Reduced labelling (≤125 ml)

Hazard pictograms

Signal word

Danger

Precautionary statements

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

Index-No. 606-001-00-8

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

3.1 Substance

Formula	CH_3COCH_3	C_3H_6O (Hill)
Index-No.	606-001-00-8	
EC-No.	200-662-2	
Molar mass	58,08 g/mol	

Hazardous components (REGULATION (EC) No 1272/2008)

Chemical name (Concentration)

CAS-No.	Registration number	Classification
acetone (<= 100 %)		

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

67-64-1	01-2119471330-49-XXXX	Flammable liquid, Category 2, H225 Eye irritation, Category 2, H319 Specific target organ toxicity - single exposure, Category 3, H336

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

3.2 Mixture

Not applicable

SECTION 4. First aid measures

4.1 Description of first aid measures

After inhalation: fresh air. Call in physician.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Risk of corneal clouding.
Drying-out effect resulting in rough and chapped skin.
irritant effects, Drowsiness, Dizziness, narcosis, Nausea, Vomiting, Stomach/intestinal disorders, Headache, somnolence, Salivation, Coma

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Foam, Carbon dioxide (CO2), Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Combustible.
Pay attention to flashback.
Forms explosive mixtures with air at ambient temperatures.
Vapours are heavier than air and may spread along floors.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

Special protective equipment for firefighters

In the event of fire, wear self-contained breathing apparatus.

Further information

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Observe label precautions.

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Protected from light.

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Recommended storage temperature see product label.

7.3 Specific end use(s)

See exposure scenario in the Annex to this MSDS.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

Derived No Effect Level (DNEL)

Worker DNEL, acute	Local effects	inhalation	2420 mg/m³
Worker DNEL, longterm	Systemic effects	dermal	186 mg/kg Body weight
Worker DNEL, longterm	Systemic effects	inhalation	1210 mg/m³
Consumer DNEL, longterm	Systemic effects	dermal	62 mg/kg Body weight
Consumer DNEL, longterm	Systemic effects	inhalation	200 mg/m³
Consumer DNEL, longterm	Systemic effects	oral	62 mg/kg Body weight

Predicted No Effect Concentration (PNEC)

PNEC Fresh water	10,6 mg/l
PNEC Marine water	1,06 mg/l
PNEC Fresh water sediment	30,4 mg/kg
PNEC Marine sediment	3,04 mg/kg
PNEC Soil	29,5 mg/kg
PNEC Sewage treatment plant	100 mg/l

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material:	butyl-rubber
Glove thickness:	0,7 mm
Break through time:	480 min

splash contact:

Glove material:	natural latex
Glove thickness:	0,6 mm
Break through time:	10 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 898 Butoject® (full contact), KCL 706 Lapren® (splash contact).
The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.
This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment

Flame retardant antistatic protective clothing.

Respiratory protection

required when vapours/aerosols are generated.
Recommended Filter type: Filter AX (EN 371)
The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls

Do not let product enter drains.

Risk of explosion.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Colour	colourless
Odour	like fruit
Odour Threshold	0,1 - 662,5 ppm
pH	5 - 6 at 395 g/l 20 °C
Melting point	-95,4 °C
Boiling point/boiling range	56,2 °C at 1.013 hPa
Flash point	< -20 °C Method: DIN 51755 Part 1
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	2,6 %(V)
Upper explosion limit	12,8 %(V)

Vapour pressure	233 hPa at 20 °C
Relative vapour density	2,01
Density	0,79 g/cm3 at 20 °C
Relative density	No information available.
Water solubility	at 20 °C soluble
Partition coefficient: n-octanol/water	log Pow: -0,24 (experimental) Bioaccumulation is not expected. (Lit.)
Auto-ignition temperature	No information available.
Decomposition temperature	Distillable in an undecomposed state at normal pressure.
Viscosity, dynamic	0,32 mPa.s at 20 °C
Explosive properties	Not classified as explosive.
Oxidizing properties	none

9.2 Other data

Ignition temperature	465 °C DIN 51794
Conductivity	0,01 µS/cm at 20 °C

SECTION 10. Stability and reactivity

10.1 Reactivity

Vapours may form explosive mixture with air.

10.2 Chemical stability

Sensitivity to light

Sensitive to air.

10.3 Possibility of hazardous reactions

Risk of ignition or formation of inflammable gases or vapours with:

chromosulfuric acid, chromyl chloride, ethanolamine, Fluorine, Strong oxidizing agents, strong reducing agents, Nitric acid, chromium(VI) oxide

Risk of explosion with:

nonmetallic oxyhalides, halogen-halogen compounds, Chloroform, nitrating acid, nitrosyl compounds, hydrogen peroxide, halogen oxides, organic nitro compounds, peroxi compounds

Exothermic reaction with:

Bromine, Alkali metals, alkali hydroxides, Halogenated hydrocarbon, Sulphur dichloride, phosphorous oxichloride

10.4 Conditions to avoid

Warming.

10.5 Incompatible materials

rubber, various plastics

10.6 Hazardous decomposition products

no information available

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

LD50 Rat: 5.800 mg/kg

(ECHA)

Symptoms: Stomach/intestinal disorders, Risk of aspiration upon vomiting., Pulmonary failure possible after aspiration of vomit.

Acute inhalation toxicity

LC50 Rat: 76 mg/l; 4 h ; vapour

(Lit.)

Symptoms: mucosal irritations

Acute dermal toxicity

LD50 Rabbit: 20.000 mg/kg

(IUCLID)

Skin irritation

Rabbit

Result: No irritation

(External MSDS)

Repeated exposure may cause skin dryness or cracking.

Eye irritation

Rabbit

Result: Eye irritation

(External MSDS)

Causes serious eye irritation.

Risk of corneal clouding.

Sensitisation

Maximisation Test Guinea pig

Result: negative

(ECHA)

Germ cell mutagenicity

Genotoxicity in vivo

Micronucleus test

Result: negative

(National Toxicology Program)

Genotoxicity in vitro

Mutagenicity (mammal cell test): chromosome aberration.

Result: negative

Method: OECD Test Guideline 473

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

Carcinogenicity

Did not show carcinogenic effects in animal experiments. (IUCLID)

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness.

Target Organs: Central nervous system

Specific target organ toxicity - repeated exposure

This information is not available.

Aspiration hazard

This information is not available.

11.2 Further information

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.

SECTION 12. Ecological information

12.1 Toxicity

Toxicity to fish

LC50 Oncorhynchus mykiss (rainbow trout): 5.540 mg/l; 96 h

(Lit.)

Toxicity to daphnia and other aquatic invertebrates

EC50 Daphnia magna (Water flea): 6.100 mg/l; 48 h

(Lit.)

EC5 E.sulcatum: 28 mg/l; 72 h

(maximum permissible toxic concentration) (Lit.)

Toxicity to algae

NOEC M.aeruginosa: 530 mg/l; 8 d

Analytical monitoring: no

DIN 38412

(maximum permissible toxic concentration) (IUCLID)

Toxicity to bacteria

EC50 activated sludge: 59 - 67,4 mg/l; 30 min

(Lit.)

EC5 Pseudomonas putida: 1.700 mg/l; 16 h

(maximum permissible toxic concentration) (IUCLID)

12.2 Persistence and degradability

Biodegradability

91 %; 28 d

(IUCLID)

Readily biodegradable

Biochemical Oxygen Demand (BOD)

1.850 mg/g (5 d)

(IUCLID)

Chemical Oxygen Demand (COD)

2.070 mg/g

(IUCLID)

Theoretical oxygen demand (ThOD)

2.200 mg/g

(Lit.)

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: -0,24

(experimental)

Bioaccumulation is not expected. (Lit.)

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

12.6 Other adverse effects

Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

Waste treatment methods

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 UN number	UN 1090
14.2 Proper shipping name	ACETONE
14.3 Class	3
14.4 Packing group	II
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
Tunnel restriction code	D/E

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

14.1 UN number	UN 1090
14.2 Proper shipping name	ACETONE
14.3 Class	3
14.4 Packing group	II
14.5 Environmentally hazardous	--
14.6 Special precautions for user	no

Sea transport (IMDG)

14.1 UN number	UN 1090
14.2 Proper shipping name	ACETONE
14.3 Class	3
14.4 Packing group	II
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
EmS	F-E S-D

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant

SECTION 15. Regulatory information

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

EU regulations

Major Accident Hazard	SEVESO III
Legislation	FLAMMABLE LIQUIDS P5c Quantity 1: 5.000 t Quantity 2: 50.000 t
Occupational restrictions	Take note of Dir 94/33/EC on the protection of young people at work.

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	not regulated
Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC	not regulated

Substances of very high concern (SVHC)	This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of ≥ 0.1 % (w/w).

National legislation
Storage class 3

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16. Other information

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

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

Training advice
Provide adequate information, instruction and training for operators.

Labelling
Hazard pictograms

Signal word
Danger

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

EUH066 Repeated exposure may cause skin dryness or cracking.

Precautionary statements

Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P240 Ground/bond container and receiving equipment.

Response

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

Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Regional representation

This information is given on the authorised Safety Data Sheet for your country.

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

EXPOSURE SCENARIO 1 (Industrial use)

1. Industrial use Reagent for analysis, Analytical and preparative chromatography)

Sectors of end-use

SU 3	Industrial uses: Uses of substances as such or in preparations at industrial sites
SU9	Manufacture of fine chemicals
SU 10	Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)

Chemical product category

PC19	Intermediate
PC21	Laboratory chemicals

Process categories

PROC1	Use in closed process, no likelihood of exposure
PROC2	Use in closed, continuous process with occasional controlled exposure
PROC3	Use in closed batch process (synthesis or formulation)
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)
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)
PROC10	Roller application or brushing
PROC14	Production of preparations or articles by tabletting, compression, extrusion, pelletisation
PROC15	Use as laboratory reagent

Environmental Release Categories

ERC1	Manufacture of substances
ERC2	Formulation of preparations
ERC4	Industrial use of processing aids in processes and products, not becoming part of articles
ERC6a	Industrial use resulting in manufacture of another substance (use of intermediates)

ERC6b Industrial use of reactive processing aids

2. Contributing scenarios: Operational conditions and risk management measures

2.1 Contributing scenario controlling environmental exposure for: ERC1

Amount used

Annual amount per site	10550 t
Daily amount per site (Msafe)	29,31 t

Environment factors not influenced by risk management

Flow rate	18.000 m3/d
Dilution Factor (River)	10

Other given operational conditions affecting environmental exposure

Number of emission days per year	360
Emission or Release Factor: Air	5 %
Emission or Release Factor: Water	6 %
Emission or Release Factor: Soil	0,01 %

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Default industrial size
Flow rate of sewage treatment plant effluent	2.000 m3/d
Effectiveness (of a measure)	88 %

2.2 Contributing scenario controlling environmental exposure for: ERC2

Amount used

Annual amount per site	31650 t
Daily amount per site (Msafe)	87,92 t

Environment factors not influenced by risk management

Flow rate	18.000 m3/d

Dilution Factor (River)	10

Other given operational conditions affecting environmental exposure

Number of emission days per year	360
Emission or Release Factor: Air	2,5 %
Emission or Release Factor: Water	2 %
Emission or Release Factor: Soil	0,01 %

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Default industrial size
Flow rate of sewage treatment plant effluent	2.000 m3/d
Effectiveness (of a measure)	88 %

2.3 Contributing scenario controlling environmental exposure for: ERC4

Amount used

Annual amount per site	633 t
Daily amount per site (Msafe)	1,76 t

Environment factors not influenced by risk management

Flow rate	18.000 m3/d
Dilution Factor (River)	10

Other given operational conditions affecting environmental exposure

Number of emission days per year	360
Emission or Release Factor: Air	100 %
Emission or Release Factor: Water	100 %
Emission or Release Factor: Soil	5 %

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Default industrial size
Flow rate of sewage treatment	2.000 m3/d

plant effluent	
Effectiveness (of a measure)	88 %

2.4 Contributing scenario controlling environmental exposure for: ERC6a

Amount used

Annual amount per site	31650 t
Daily amount per site (Msafe)	87,92 t

Environment factors not influenced by risk management

Flow rate	18.000 m3/d
Dilution Factor (River)	10

Other given operational conditions affecting environmental exposure

Number of emission days per year	360
Emission or Release Factor: Air	5 %
Emission or Release Factor: Water	2 %
Emission or Release Factor: Soil	1 %

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Default industrial size
Flow rate of sewage treatment	2.000 m3/d
plant effluent	
Effectiveness (of a measure)	88 %

2.5 Contributing scenario controlling environmental exposure for: ERC6b

Amount used

Annual amount per site	12660 t
Daily amount per site (Msafe)	35,17 t

Environment factors not influenced by risk management

Flow rate	18.000 m3/d
Dilution Factor (River)	10

Other given operational conditions affecting environmental exposure

Number of emission days per year	360
Emission or Release Factor: Air	0,1 %
Emission or Release Factor: Water	5 %
Emission or Release Factor: Soil	0,02 %

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Default industrial size
Flow rate of sewage treatment plant effluent	2.000 m3/d
Effectiveness (of a measure)	88 %

2.6 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15

Product characteristics

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

Frequency and duration of use

Frequency of use	8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor	Indoor with good general ventilation

Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

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

Use suitable eye protection.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice Wear suitable gloves tested to EN374.

3. Exposure estimation and reference to its source

Environment

CS	Use descriptor	Msafe	Compartment	RCR	Exposure Assessment Method
2.1	ERC1	29,31 t/day	Fresh water	1	EUSES
2.2	ERC2	87,92 t/day	Fresh water	1	EUSES
2.3	ERC4	1,76 t/day	Fresh water	1	EUSES
2.4	ERC6a	87,92 t/day	Fresh water	1	EUSES
2.5	ERC6b	35,17 t/day	Fresh water	1	EUSES

Workers

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.6	PROC1	longterm, inhalative, systemic	< 0,01	ECETOC TRA 3
		longterm, dermal, systemic	< 0,01	ECETOC TRA 3
		longterm, combined, systemic	< 0,01	
2.6	PROC2	longterm, inhalative, systemic	0,10	ECETOC TRA 3
		longterm, dermal, systemic	0,01	ECETOC TRA 3
		longterm, combined, systemic	0,11	
2.6	PROC3	longterm, inhalative, systemic	0,20	ECETOC TRA 3
		longterm, dermal, systemic	< 0,01	ECETOC TRA 3
		longterm, combined, systemic	0,20	
2.6	PROC4	longterm, inhalative, systemic	0,20	ECETOC TRA 3
		longterm, dermal, systemic	0,04	ECETOC TRA 3
		longterm, combined, systemic	0,24	
2.6	PROC5	longterm, inhalative, systemic	0,50	ECETOC TRA 3
		longterm, dermal, systemic	0,07	ECETOC TRA 3
		longterm, combined, systemic	0,57	
2.6	PROC8a	longterm, inhalative, systemic	0,50	ECETOC TRA 3
		longterm, dermal, systemic	0,07	ECETOC TRA 3
		longterm, combined, systemic	0,57	
2.6	PROC8b	longterm, inhalative, systemic	0,30	ECETOC TRA 3
		longterm, dermal, systemic	0,04	ECETOC TRA 3
		longterm, combined, systemic	0,34	
2.6	PROC9	longterm, inhalative, systemic	0,40	ECETOC TRA 3
		longterm, dermal, systemic	0,04	ECETOC TRA 3
		longterm, combined, systemic	0,44	
2.6	PROC10	longterm, inhalative, systemic	0,50	ECETOC TRA 3
		longterm, dermal, systemic	0,15	ECETOC TRA 3
		longterm, combined, systemic	0,65	
2.6	PROC14	longterm, inhalative, systemic	0,10	ECETOC TRA 3
		longterm, dermal, systemic	< 0,01	ECETOC TRA 3
		longterm, combined, systemic	0,10	
2.6	PROC15	longterm, inhalative, systemic	0,10	ECETOC TRA 3
		longterm, dermal, systemic	< 0,01	ECETOC TRA 3
		longterm, combined, systemic	0,10	

The default parameters and -efficiencies of the applied exposure assessment model were used for the calculation (unless stated differently).

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 Chapter R.12: Use descriptor system; ECHA Guidance for downstream users; 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).

For scaling of worker exposure assessments performed with ECETOC TRA, please consult the Merck tool ScIDeEx® at www.merckmillipore.com/scideex.

For scaling of environmental exposure assessments, please refer to the ECT tool at http://www.reachcentrum.eu/consortium/phenol-derivatives-reach-consortium-149.html

EXPOSURE SCENARIO 2 (Professional use)

1. Professional use Reagent for analysis, Analytical and preparative chromatography)

Sectors of end-use

SU 22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Chemical product category

PC21 Laboratory chemicals

Process categories

PROC15 Use as laboratory reagent

Environmental Release Categories

ERC2 Formulation of preparations

ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)

ERC6b Industrial use of reactive processing aids

2. Contributing scenarios: Operational conditions and risk management measures

2.1 Contributing scenario controlling environmental exposure for: ERC2

Amount used

Annual amount per site	31650 t
Daily amount per site (Msafe)	87,92 t

Environment factors not influenced by risk management

Flow rate	18.000 m3/d
Dilution Factor (River)	10

Other given operational conditions affecting environmental exposure

Number of emission days per year	360
Emission or Release Factor: Air	2,5 %
Emission or Release Factor: Water	2 %
Emission or Release Factor: Soil	0,01 %

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Default industrial size
Flow rate of sewage treatment plant effluent	2.000 m3/d
Effectiveness (of a measure)	88 %

2.2 Contributing scenario controlling environmental exposure for: ERC6a

Amount used

Annual amount per site	31650 t
Daily amount per site (Msafe)	87,92 t

Environment factors not influenced by risk management

Flow rate	18.000 m3/d
Dilution Factor (River)	10

Other given operational conditions affecting environmental exposure

Number of emission days per year	360
Emission or Release Factor: Air	5 %
Emission or Release Factor: Water	2 %
Emission or Release Factor: Soil	1 %

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Default industrial size
Flow rate of sewage treatment plant effluent	2.000 m3/d
Effectiveness (of a measure)	88 %

2.3 Contributing scenario controlling environmental exposure for: ERC6b

Amount used

Annual amount per site	12660 t
Daily amount per site (Msafe)	35,17 t

Environment factors not influenced by risk management

Flow rate	18.000 m3/d
Dilution Factor (River)	10

Other given operational conditions affecting environmental exposure

Number of emission days per year	360
Emission or Release Factor: Air	0,1 %
Emission or Release Factor: Water	5 %
Emission or Release Factor: Soil	0,02 %

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Default industrial size
Flow rate of sewage treatment plant effluent	2.000 m3/d
Effectiveness (of a measure)	88 %

2.4 Contributing scenario controlling worker exposure for: PROC15

Product characteristics

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

Frequency and duration of use

Frequency of use	8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor	Indoor with good general ventilation

Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

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

Use suitable eye protection.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice Wear suitable gloves tested to EN374.

3. Exposure estimation and reference to its source

Environment

CS	Use descriptor	Msafe	Compartment	RCR	Exposure Assessment Method
2.1	ERC2	87,92 t/day	Fresh water	1	EUSES
2.2	ERC6a	87,92 t/day	Fresh water	1	EUSES
2.3	ERC6b	35,17 t/day	Fresh water	1	EUSES

Workers

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.4	PROC15	longterm, inhalative, systemic	0,10	ECETOC TRA 3
		longterm, dermal, systemic	< 0,01	ECETOC TRA 3
		longterm, combined, systemic	0,10	

The default parameters and -efficiencies of the applied exposure assessment model were used for the calculation (unless stated differently).

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 Chapter R.12: Use descriptor system; ECHA Guidance for downstream users; 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).

For scaling of worker exposure assessments performed with ECETOC TRA, please consult the Merck tool ScIDeEx® at www.merckmillipore.com/scideex.

For scaling of environmental exposure assessments, please refer to the ECT tool at http://www.reachcentrum.eu/consortium/phenol-derivatives-reach-consortium-149.html