

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 21.08.2018

Version 11.12

SECTION 1. Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Catalogue No.	100996
Product name	1-Propanol EMPLURA®
REACH Registration Number	01-2119486761-29-XXXX
CAS-No.	71-23-8

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

Identified uses	Reagent for analysis, Chemical production In compliance with the conditions described in the annex to this safety data sheet.
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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.
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SECTION 2. Hazards identification**2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Flammable liquid, Category 2, H225

Serious eye damage, Category 1, H318

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.

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2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms



Signal word

Danger

Hazard statements

H225 Highly flammable liquid and vapour.

H318 Causes serious eye damage.

H336 May cause drowsiness or dizziness.

Precautionary statements

Prevention

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

P240 Ground/bond container and receiving equipment.

P280 Wear eye protection.

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.

P313 Get medical advice/ attention.

Storage

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

Reduced labelling (≤125 ml)

Hazard pictograms



Signal word

Danger

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Hazard statements

H318 Causes serious eye damage.

Precautionary statements

P280 Wear eye protection.

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

P313 Get medical advice/ attention.

Index-No. 603-003-00-0

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

3.1 Substance

Formula	CH ₃ CH ₂ CH ₂ OH	C ₃ H ₈ O (Hill)
Index-No.	603-003-00-0	
EC-No.	200-746-9	
Molar mass	60,1 g/mol	

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

Chemical name (Concentration)

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

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

71-23-8	01-2119486761-29-XXXX	Flammable liquid, Category 2, H225 Serious eye damage, Category 1, H318 Specific target organ toxicity - single exposure, Category 3, H336
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For the full text of the H-Statements mentioned in this Section, see Section 16.

3.2 Mixture

Not applicable

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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. Immediately call in ophthalmologist. Remove contact lenses.

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Call a physician immediately. Subsequently administer: activated charcoal (20 - 40 g in 10% slurry).

4.2 Most important symptoms and effects, both acute and delayed

Irritation and corrosion, Cough, respiratory paralysis, Shortness of breath, Drowsiness, Unconsciousness, narcosis, inebriation, Vertigo, somnolence, Headache, Coma
Risk of serious damage to eyes.

4.3 Indication of any immediate medical attention and special treatment needed

Laxative: Sodium sulfate (1 tablespoon/1/4 l water).

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.

Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air at ambient temperatures.

Pay attention to flashback.

Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

The Safety Data Sheets for catalogue items are available at www.merckgroup.com

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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.

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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. Wash hands after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

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

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Derived No Effect Level (DNEL)

Worker DNEL, acute	Systemic effects	inhalation	1723 mg/m ³
Worker DNEL, longterm	Systemic effects	inhalation	268 mg/m ³
Worker DNEL, longterm	Systemic effects	dermal	136 mg/kg Body weight
Consumer DNEL, acute	Systemic effects	inhalation	1036 mg/m ³
Consumer DNEL, longterm	Systemic effects	inhalation	80 mg/m ³
Consumer DNEL, longterm	Systemic effects	dermal	81 mg/kg Body weight
Consumer DNEL, longterm	Systemic effects	oral	61 mg/kg Body weight

Predicted No Effect Concentration (PNEC)

PNEC Fresh water	10 mg/l
PNEC Sewage treatment plant	96 mg/l
PNEC Soil	2,2 mg/kg
PNEC Marine sediment	2,28 mg/kg
PNEC Fresh water sediment	22,8 mg/kg
PNEC Aquatic intermittent release	10 mg/l
PNEC Marine water	1 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.

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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

Tightly fitting safety goggles

Hand protection

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0,40 mm
Break through time:	> 480 min

splash contact:

Glove material:	polychloroprene
Glove thickness:	0,65 mm
Break through time:	> 120 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 730 Camatril® -Velours (full contact), KCL 720 Camapren® (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 A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur 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.

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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	alcohol-like
Odour Threshold	No information available.
pH	7 at 200 g/l 20 °C
Melting point	-127 °C
Boiling point/boiling range	96,5 - 98 °C at 1.013 hPa Method: DIN 53171
Flash point	15 °C Method: c.c.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	2,1 %(V)

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Upper explosion limit	19,2 %(V)
Vapour pressure	19 hPa at 20 °C
Relative vapour density	2,1
Density	0,80 g/cm ³ at 20 °C Method: DIN 51757
Relative density	No information available.
Water solubility	at 20 °C miscible in all proportions
Partition coefficient: n-octanol/water	log Pow: 0,25 (experimental) (IUCALID) Bioaccumulation is not expected.
Auto-ignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	2,3 mPa.s at 20 °C
Explosive properties	Not classified as explosive.
Oxidizing properties	none

9.2 Other data

Ignition temperature	360 °C Method: DIN 51794
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SECTION 10. Stability and reactivity

10.1 Reactivity

Vapours may form explosive mixture with air.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Exothermic reaction with:

Alkaline earth metals, alcoholates

Alkali metals, Release of:, Hydrogen

Violent reactions possible with:

Strong oxidizing agents

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

Symptoms: Risk of aspiration upon vomiting., Aspiration may cause pulmonary oedema and pneumonitis.

Acute inhalation toxicity

Symptoms: Possible damages:, mucosal irritations

Acute dermal toxicity

This information is not available.

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Skin irritation

Rabbit

Result: No irritation

OECD Test Guideline 404

Eye irritation

Rabbit

Result: Severe irritations

OECD Test Guideline 405

Causes serious eye damage.

Sensitisation

Sensitisation test: Guinea pig

Result: negative

(IUCLID)

Patch test: human

Result: negative

(IUCLID)

Germ cell mutagenicity

Genotoxicity in vitro

Ames test

Escherichia coli/Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

(IUCLID)

Mutagenicity (mammal cell test):

Result: negative

Method: OECD Test Guideline 476

Mutagenicity (mammal cell test): chromosome aberration.

Result: negative

Method: OECD Test Guideline 473

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Carcinogenicity

This information is not available.

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

Systemic effects:

Headache, Vertigo, inebriation, Unconsciousness, narcosis

After uptake of large quantities:

respiratory paralysis, 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 Pimephales promelas (fathead minnow): 4.630 mg/l; 96 h
(IUCLID)

flow-through test LC50 Pimephales promelas (fathead minnow): 4.555 mg/l; 96 h

Analytical monitoring: yes

OECD Test Guideline 203

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Toxicity to daphnia and other aquatic invertebrates

static test EC50 Daphnia magna (Water flea): 3.644 mg/l; 48 h
DIN 38412

Toxicity to algae

static test EC50 Pseudokirchneriella subcapitata (green algae): 9.170 mg/l; 48 h
(ECHA)

Toxicity to bacteria

static test IC50 activated sludge: > 1.000 mg/l; 3 h
OECD Test Guideline 209

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

semi-static test NOEC Daphnia magna (Water flea): > 100 mg/l; 21 d
OECD Test Guideline 211

12.2 Persistence and degradability

Biodegradability

75 %; 20 d; aerobic
(IUCLID)

Readily biodegradable

Chemical Oxygen Demand (COD)

2.230 mg/g

(IUCLID)

Theoretical oxygen demand (ThOD)

2.400 mg/g

(Lit.)

Ratio BOD/COD

73 %

(IUCLID)

12.3 Bioaccumulative potential

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Partition coefficient: n-octanol/water

log Pow: 0,25
(experimental)

(IUCLID) Bioaccumulation is not expected.

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 1274
14.2 Proper shipping name	N-PROPANOL
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)

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14.1 UN number UN 1274
14.2 Proper shipping name N-PROPANOL
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 1274
14.2 Proper shipping name N-PROPANOL
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.

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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.
H318 Causes serious eye damage.
H336 May cause drowsiness or dizziness.

Training advice

Provide adequate information, instruction and training for operators.

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Labelling

Hazard pictograms



Signal word

Danger

Hazard statements

H225 Highly flammable liquid and vapour.

H318 Causes serious eye damage.

H336 May cause drowsiness or dizziness.

Precautionary statements

Prevention

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

P240 Ground/bond container and receiving equipment.

P280 Wear eye protection.

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.

P313 Get medical advice/ attention.

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

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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.

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EXPOSURE SCENARIO 1 (Industrial use)

1. Industrial use Reagent for analysis, Chemical production)

Sectors of end-use

- SU 3* Industrial uses: Uses of substances as such or in preparations at industrial sites
SU 9 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
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

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2. Contributing scenarios: Operational conditions and risk management measures

2.1 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, 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
Frequency of use 5 days/week

Other operational conditions affecting workers exposure

Outdoor / Indoor Indoor without local exhaust ventilation (LEV)

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.

2.2 Contributing scenario controlling worker exposure for: PROC5, PROC8a, PROC8b, PROC9, PROC10

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
Frequency of use 5 days/week

Other operational conditions affecting workers exposure

Outdoor / Indoor Indoor with local exhaust ventilation (LEV)

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Technical conditions and measures

Use only in area provided with appropriate exhaust 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 and gloves.

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

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.1	PROC1	longterm, inhalative, systemic	< 0,001	ECETOC TRA
		longterm, dermal, systemic	0,003	ECETOC TRA
		longterm, combined, systemic	0,003	
2.1	PROC2	longterm, inhalative, systemic	0,466	ECETOC TRA
		longterm, dermal, systemic	0,01	ECETOC TRA
		longterm, combined, systemic	0,48	
2.1	PROC3	longterm, inhalative, systemic	0,932	ECETOC TRA
		longterm, dermal, systemic	0,003	ECETOC TRA
		longterm, combined, systemic	0,03	
2.1	PROC4	longterm, inhalative, systemic	0,932	ECETOC TRA
		longterm, dermal, systemic	0,05	ECETOC TRA
		longterm, combined, systemic	0,98	
2.1	PROC15	longterm, inhalative, systemic	0,466	ECETOC TRA
		longterm, dermal, systemic	0,003	ECETOC TRA
		longterm, combined, systemic	0,47	

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2.2	PROC5	longterm, inhalative, systemic	0,233	ECETOC TRA
		longterm, dermal, systemic	0,001	ECETOC TRA
		longterm, combined, systemic	0,23	
2.2	PROC8a	longterm, inhalative, systemic	0,233	ECETOC TRA
		longterm, dermal, systemic	0,001	ECETOC TRA
		longterm, combined, systemic	0,23	
2.2	PROC8b	longterm, inhalative, systemic	0,042	ECETOC TRA
		longterm, dermal, systemic	0,005	ECETOC TRA
		longterm, combined, systemic	0,05	
2.2	PROC9	longterm, inhalative, systemic	0,186	ECETOC TRA
		longterm, dermal, systemic	0,005	ECETOC TRA
		longterm, combined, systemic	0,19	
2.2	PROC10	longterm, inhalative, systemic	0,233	ECETOC TRA
		longterm, dermal, systemic	0,01	ECETOC TRA
		longterm, combined, systemic	0,24	

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

For (other) acute effects risk management measures are based on qualitative risk characterisation.

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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.

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EXPOSURE SCENARIO 2 (Professional use)

1. Professional use Reagent for analysis, Chemical production)

Sectors of end-use

SU22 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 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

Frequency of use 5 days/week

Other operational conditions affecting workers exposure

Outdoor / Indoor Indoor without local exhaust ventilation (LEV)

Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

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

Use suitable eye protection.

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

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.1	PROC15	longterm, inhalative, systemic	0,466	ECETOC TRA
		longterm, dermal, systemic	0,003	ECETOC TRA
		longterm, combined, systemic	0,47	

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

For (other) acute effects risk management measures are based on qualitative risk characterisation.

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.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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Product name	1-Propanol EMPLURA®
