

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 8.6  
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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : 2-Propanol for analysis EMSURE®  
ACS,ISO,Reag. Ph EurProduct Number : 109634  
Brand : Millipore  
Index-No. : 603-003-00-0  
REACH No. : 01-2119457558-25-XXXX  
CAS-No. : 67-63-0

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

Identified uses : Reagent for analysis, Chemical production

### 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: Highly flammable liquid and vapor.

Eye irritation, (Category 2) H319: Causes serious eye irritation.

Specific target organ toxicity - H336: May cause drowsiness or dizziness.

single exposure, (Category 3),  
Central nervous system

## 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 Statements

H225

Highly flammable liquid and vapor.

H319

Causes serious eye irritation.

H336

May cause drowsiness or dizziness.

Precautionary Statements

P210

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

P233

Keep container tightly closed.

P240

Ground and bond container and receiving equipment.

P241

Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242

Use non-sparking tools.

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 Statements

none

### Reduced Labeling (<= 125 ml)

Pictogram



Signal Word

Danger

Hazard Statements

none

Precautionary Statements

none

Supplemental Hazard Statements

none

## 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.

Ecological information:

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.

Toxicological information:

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.

### SECTION 3: Composition/information on ingredients

#### 3.1 Substances

Formula : C<sub>3</sub>H<sub>8</sub>O  
Molecular weight : 60.1 g/mol  
CAS-No. : 67-63-0  
EC-No. : 200-661-7  
Index-No. : 603-003-00-0

Component	Classification	Concentration
<b>2-Propanol</b>		
CAS-No. 67-63-0 EC-No. 200-661-7 Index-No. 603-003-00-0	Flam. Liq. 2; Eye Irrit. 2; STOT SE 3; H225, H319, H336 Concentration limits: >= 20 %: STOT SE 3, H336;	<= 100 %

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

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

##### If inhaled

After inhalation: fresh air. Call in physician.

##### In case of skin contact

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

##### In case of eye contact

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

##### If swallowed

After swallowing: immediately make victim drink water (two glasses at most). 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

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## **SECTION 5: Firefighting measures**

### **5.1 Extinguishing media**

#### **Suitable extinguishing media**

Carbon dioxide (CO<sub>2</sub>) Foam 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**

Carbon oxides

Combustible.

Pay attention to flashback.

Vapors are heavier than air and may spread along floors.

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

Forms explosive mixtures with air at ambient temperatures.

### **5.3 Advice for firefighters**

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

### **5.4 Further information**

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

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## **SECTION 6: Accidental release measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, 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.

For personal protection 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. Chemisorb® ).

Dispose of properly. Clean up affected area.

### **6.4 Reference to other sections**

For disposal see section 13.

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## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

#### **Advice on safe handling**

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. Wash hands after working with substance.

For precautions see section 2.2.

## 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.

### 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
2-Propanol	67-63-0	STEL	500 ppm 1,250 mg/m <sup>3</sup>	UK. EH40 WEL - Workplace Exposure Limits
		TWA	400 ppm 999 mg/m <sup>3</sup>	UK. EH40 WEL - Workplace Exposure Limits

#### Derived No Effect Level (DNEL)

Application Area	Routes of exposure	Health effect	Value
Worker DNEL, longterm	inhalation	Systemic effects	500 mg/m <sup>3</sup>
Worker DNEL, longterm	dermal	Systemic effects	
Consumer DNEL, longterm	inhalation	Systemic effects	89 mg/m <sup>3</sup>
Consumer DNEL, longterm	dermal	Systemic effects	
Consumer DNEL, longterm	oral	Systemic effects	

#### Predicted No Effect Concentration (PNEC)

Compartment	Value
Fresh water	140.9 mg/l
Fresh water sediment	552 mg/kg
Sea water	140.9 mg/l
Sea sediment	552 mg/kg
Soil	28 mg/kg

## 8.2 Exposure controls

### Personal protective equipment

#### Eye/face protection

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

#### Skin protection

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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: 480 min

Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact

Material: Chloroprene

Minimum layer thickness: 0.65 mm

Break through time: 120 min

Material tested: KCL 720 Camapren®

#### Body Protection

Flame retardant antistatic protective clothing.

#### Respiratory protection

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.

#### Control of environmental exposure

Do not let product enter drains. Risk of explosion.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |                   |                         |
|-------------------|-------------------------|
| a) Physical state | liquid                  |
| b) Color          | colorless               |
| c) Odor           | alcohol-like            |
| d) Melting        | Melting point: -89.5 °C |

	point/freezing point	
e)	Initial boiling point and boiling range	82.4 °C at 1,013 hPa
f)	Flammability (solid, gas)	No data available
g)	Upper/lower flammability or explosive limits	Upper explosion limit: 13.4 %(V) Lower explosion limit: 2 %(V)
h)	Flash point	12.0 °C - closed cup
i)	Autoignition temperature	425.0 °C
j)	Decomposition temperature	Distillable in an undecomposed state at normal pressure.
k)	pH	at 20 °C neutral
l)	Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: 2.2 mPa.s at 20 °C
m)	Water solubility	at 20 °C soluble
n)	Partition coefficient: n-octanol/water	log Pow: 0.05 - Bioaccumulation is not expected.
o)	Vapor pressure	43 hPa at 20 °C
p)	Density	0.786 g/cm <sup>3</sup> 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

Minimum ignition energy	0.65 mJ
Conductivity	< 0.1 µS/cm
Surface tension	20.8 mN/m at 25.0 °C
Relative vapor density	2.07

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Formation of peroxides possible.  
Vapors 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

Risk of explosion with:

chlorates

Phosgene

organic nitro compounds

hydrogen peroxide

perchlorates

strong oxidising agents

Nitric acid

nitrogen dioxide

Oxygen

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

Alkali metals

Alkaline earth metals

chromium(VI) oxide

Exothermic reaction with:

Aldehydes

Amines

fuming sulfuric acid

Iron

Aluminum

Chlorine

Strong acids

halogen compounds

potassium tert-butanolate

### 10.4 Conditions to avoid

Warming.

### 10.5 Incompatible materials

No data available

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 5,840 mg/kg  
(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - 37.5 mg/l - vapor



(OECD Test Guideline 403)  
LD50 Dermal - Rabbit - 12,800 mg/kg  
Remarks: (RTECS)

#### **Skin corrosion/irritation**

Skin - Rabbit  
Result: No skin irritation - 4 h  
(OECD Test Guideline 404)

#### **Serious eye damage/eye irritation**

Eyes - Rabbit  
Result: Eye irritation  
(OECD Test Guideline 405)  
Remarks: (Regulation (EC) No 1272/2008, Annex VI)

#### **Respiratory or skin sensitization**

Buehler Test - Guinea pig  
Result: negative  
(OECD Test Guideline 406)

#### **Germ cell mutagenicity**

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: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative

Test Type: In vivo micronucleus test  
Species: Mouse  
Cell type: Bone marrow  
Application Route: Intraperitoneal injection  
Method: OECD Test Guideline 474  
Result: negative

#### **Carcinogenicity**

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

#### **Reproductive toxicity**

No data available

#### **Specific target organ toxicity - single exposure**

Inhalation, Oral - May cause drowsiness or dizziness. - Central nervous system  
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

#### **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.

Central nervous system depression, prolonged or repeated exposure can cause:, Nausea, Headache, Vomiting, narcosis, Drowsiness, Overexposure may cause mild, reversible liver effects., Aspiration may lead to:, Lung edema, Pneumonia

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

After absorption:

Headache  
Dizziness  
inebriation  
Unconsciousness  
narcosis

After uptake of large quantities:

Coma

Handle in accordance with good industrial hygiene and safety practice.

Kidney - Irregularities - Based on Human Evidence

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## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to fish	flow-through test LC50 - Pimephales promelas (fathead minnow) - 9,640 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 13,299 mg/l - 48 h Remarks: (IUCLID)
Toxicity to algae	IC50 - Desmodesmus subspicatus (green algae) - > 1,000 mg/l - 72 h Remarks: (IUCLID)
Toxicity to bacteria	EC5 - Pseudomonas putida - 1,050 mg/l - 16 h Remarks: (Lit.)

## 12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 5 d  
Result: 53 % - Readily biodegradable.  
(Directive 67/548/EEC, Annex V, C.6)

Theoretical oxygen demand 2,400 mg/g  
Remarks: (Lit.)

Ratio BOD/ThBOD 49 %  
Remarks: (IUCLID)

## 12.3 Bioaccumulative potential

No bioaccumulation is to be expected (log Pow <= 4).

## 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

No data available

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### **Product**

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. Notice Directive on waste 2008/98/EC.

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## SECTION 14: Transport information

### 14.1 UN number

ADR/RID: 1219

IMDG: 1219

IATA: 1219

### 14.2 UN proper shipping name

ADR/RID: ISOPROPANOL

IMDG: ISOPROPANOL

IATA: Isopropanol

### 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

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## 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

##### National legislation

Seveso III: Directive 2012/18/EU of the P5c FLAMMABLE LIQUIDS  
European Parliament and of the Council  
on the control of major-accident hazards  
involving dangerous substances.

#### Other regulations

Take note of Dir 94/33/EC on the protection of young people at work.

### 15.2 Chemical Safety Assessment

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

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## SECTION 16: Other information

### Full text of H-Statements

H225                                      Highly flammable liquid and vapor.

H319                                      Causes serious eye irritation.

H336                                      May cause drowsiness or dizziness.

## 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

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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## Annex: Exposure scenario

### Identified uses:

#### Use: Industrial use

<b>SU 3:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites
<b>SU 3, SU 10:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites, Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)
<b>PC19:</b> Intermediate
<b>PC39:</b> Cosmetics, personal care products
<b>PROC1:</b> Use in closed process, no likelihood of exposure
<b>PROC2:</b> Use in closed, continuous process with occasional controlled exposure
<b>PROC3:</b> Use in closed batch process (synthesis or formulation)
<b>PROC4:</b> Use in batch and other process (synthesis) where opportunity for exposure arises
<b>PROC5:</b> Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)
<b>PROC8a:</b> Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities
<b>PROC8b:</b> Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities
<b>PROC9:</b> Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
<b>PROC14:</b> Production of preparations or articles by tableting, compression, extrusion, pelletization
<b>PROC15:</b> Use as laboratory reagent
<b>ERC1, ERC2, ERC4, ERC6a, ERC6b:</b> Manufacture of substances, Formulation of preparations, Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use resulting in manufacture of another substance (use of intermediates), Industrial use of reactive processing aids

#### Use: Professional use

<b>SU 22:</b> Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
<b>SU 22:</b> Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
<b>PC39:</b> Cosmetics, personal care products
<b>ERC8a, ERC8d:</b> Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems

#### Use: Consumer use

<b>SU 21:</b> Consumer uses: Private households (= general public = consumers)
<b>SU 21:</b> Consumer uses: Private households (= general public = consumers)
<b>PC39:</b> Cosmetics, personal care products
<b>ERC8a, ERC8d:</b> Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems

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## 1. Short title of Exposure Scenario: Industrial use

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Main User Groups : **SU 3**  
Sectors of end-use : **SU 3, SU 10**  
Chemical product category : **PC19, PC39**  
Process categories : **PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15**  
Environmental Release Categories : **ERC1, ERC2, ERC4, ERC6a, ERC6b:**

### 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, 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

Frequency of use : 5 days/week  
Frequency of use : 8 hours/day

#### Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor without local exhaust ventilation (LEV)

#### Organizational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

## 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	longterm, inhalative, systemic			< 0.001
PROC1	ECETOC TRA	longterm, dermal, systemic			< 0.001



PROC1		longterm, combined, systemic			< 0.001
PROC2	ECETOC TRA	longterm, inhalative, systemic			0.05
PROC2	ECETOC TRA	longterm, dermal, systemic			0.02
PROC2		longterm, combined, systemic			0.052
PROC3	ECETOC TRA	longterm, inhalative, systemic			0.125
PROC3	ECETOC TRA	longterm, dermal, systemic			< 0.001
PROC3		longterm, combined, systemic			0.125
PROC4	ECETOC TRA	longterm, inhalative, systemic			0.1
PROC4	ECETOC TRA	longterm, dermal, systemic			0.008
PROC4		longterm, combined, systemic			0.108
PROC5	ECETOC TRA	longterm, inhalative, systemic			0.25
PROC5	ECETOC TRA	longterm, dermal, systemic			0.15
PROC5		longterm, combined, systemic			0.265
PROC8a	ECETOC TRA	longterm, inhalative, systemic			0.25
PROC8a	ECETOC TRA	longterm, dermal, systemic			0.015
PROC8a		longterm, combined, systemic			0.265
PROC8b	ECETOC TRA	longterm, inhalative, systemic			0.25
PROC8b	ECETOC TRA	longterm,			0.008

		dermal, systemic			
PROC8b		longterm, combined, systemic			0.258
PROC9	ECETOC TRA	longterm, inhalative, systemic			0.25
PROC9	ECETOC TRA	longterm, dermal, systemic			0.008
PROC9		longterm, combined, systemic			0.258
PROC14	ECETOC TRA	longterm, inhalative, systemic			0.25
PROC14	ECETOC TRA	longterm, dermal, systemic			0.004
PROC14		longterm, combined, systemic			0.254
PROC15	ECETOC TRA	longterm, inhalative, systemic			0.05
PROC15	ECETOC TRA	longterm, dermal, systemic			< 0.001
PROC15		longterm, combined, systemic			0.05

\*Risk characterisation ratio

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

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

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#### 1. Short title of Exposure Scenario: Professional use

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Main User Groups : **SU 22**

Millipore- 109634

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The life science business of Merck operates as MilliporeSigma in the US and Canada



Sectors of end-use : **SU 22**  
Chemical product category : **PC39**  
Environmental Release Categories : **ERC8a, ERC8d:**

### **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).

### **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).

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### **1. Short title of Exposure Scenario: Consumer use**

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Main User Groups : **SU 21**  
Sectors of end-use : **SU 21**  
Chemical product category : **PC39**  
Environmental Release Categories : **ERC8a, ERC8d:**

### **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).

### **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).