

SAFETY DATA SHEET

GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

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

1.1 Product identifiers

Product name : Hydrochloric acid fuming 37% for analysis
EMSURE® ACS,ISO,Reag. Ph Eur

Product Number : 1.00317
Catalogue No. : 100317
Brand : Millipore
REACH No. : This product is a mixture. REACH Registration Number see
section 3.
CAS-No. : 7647-01-0

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 : Sigma-Aldrich Chemie GmbH
Eschenstrasse 5
D-82024 TAUFKIRCHEN

Telephone : +49 (0)89 6513-1130
Fax : +49 (0)89 6513-1161
E-mail address : technischerservice@merckgroup.com

1.4 Emergency telephone number

Emergency Phone # : 0800 181 7059 (CHEMTREC Deutschland)
+49 (0)696 43508409 (CHEMTREC
weltweit)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Corrosive to metals, Category 1 H290: May be corrosive to metals.

Skin corrosion, Sub-category 1B H314: Causes severe skin burns and eye
damage.



Serious eye damage, Category 1

H318: Causes serious eye damage.

Specific target organ toxicity -
single exposure, Category 3,
Respiratory system

H335: May cause respiratory irritation.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

:



Signal word

:

Danger

Hazard statements

:

H290

May be corrosive to metals.

H314

Causes severe skin burns and eye damage.

H335

May cause respiratory irritation.

Precautionary
statements

:

Prevention:

P234

Keep only in original packaging.

P261

Avoid breathing mist or vapours.

P271

Use only outdoors or in a well-ventilated area.

P280

Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

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

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

Hazardous components which must be listed on the label:

Hydrochloric Acid

Reduced Labelling (<= 125 ml)

Hazard pictograms

:



Signal word

Danger

Hazard Statements

H314

Causes severe skin burns and eye damage.



Precautionary Statements	
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
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

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

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Hydrochloric Acid	7647-01-0 231-595-7 017-002-01-X 01-2119484862- 27-XXXX	Met. Corr. 1; H290 Skin Corr. 1B; H314 Eye Dam. 1; H318 STOT SE 3; H335 (Respiratory system) specific concentration limit Met. Corr. 1; H290 ≥ 0,1 % Skin Corr. 1B; H314 ≥ 25 % Skin Irrit. 2; H315 10 - < 25 %	≥ 30 - < 50



		Eye Irrit. 2; H319 10 - < 25 % STOT SE 3; H335 >= 10 %	
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For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- | | | |
|-------------------------|---|--|
| General advice | : | First aiders need to protect themselves.
Show this 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. Call a physician immediately. |
| In case of eye contact | : | After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses. |
| If swallowed | : | After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise. |

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

- | | | |
|--------------------------------|---|---|
| Suitable extinguishing media | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Unsuitable extinguishing media | : | For this substance/mixture no limitations of extinguishing agents are given. |

5.2 Special hazards arising from the substance or mixture

- | | | |
|-------------------------|---|------------------|
| Specific hazards during | : | Not combustible. |
|-------------------------|---|------------------|



fire fighting

Ambient fire may liberate hazardous vapours.

Hazardous combustion products : Hydrogen chloride gas

5.3 Advice for firefighters

Special protective equipment for fire-fighters : Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information : Suppress (knock down) gases/vapours/mists with a water spray jet.
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

Personal precautions : Advice for non-emergency personnel:
Do not breathe vapours, aerosols.
Avoid substance contact.
Ensure adequate ventilation.
Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

6.2 Environmental precautions

Environmental precautions : Do not let product enter drains.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up with liquid-absorbent and neutralising material (e.g. Chemizorb® H⁺, Merck Art. No. 101595). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Observe label precautions.

Hygiene measures : Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.



7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage : No metal containers.
areas and containers

Further information on : Tightly closed.
storage conditions

Storage class (TRGS 510) : 8B, Non-combustible, corrosive hazardous materials

Further information on : Recommended storage temperature see product label.
storage stability

Recommended storage : Recommended storage temperature see product label.
temperature

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

Occupational Exposure Limits

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006

Substance name	End Use	Exposure routes	Potential health effects	Value
Hydrochloric Acid	Worker DNEL, acute	Inhalation	Local effects	15 mg/m ³
	Worker DNEL, longterm	Inhalation	Local effects	8 mg/m ³

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006

Substance name	Environmental Compartment	Value
Hydrochloric Acid	Fresh water	0,036 mg/l
	Marine water	0,036 mg/l
	Aquatic intermittent release	0,045 mg/l
	Sewage treatment plant	0,036 mg/l

8.2 Exposure controls

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Tightly fitting safety goggles

Hand protection

Material : Nitrile rubber
Break through time : 480 min
Glove thickness : 0,11 mm



Protective index : Full contact
 Manufacturer : KCL 741 Dermatril® L

Material : Latex gloves
 Break through time : 120 min
 Glove thickness : 0,6 mm
 Protective index : Splash contact
 Manufacturer : Lapren® (KCL 706 / Aldrich Z677558, Size M)

Remarks : 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).

Skin and body protection : Acid-resistant protective clothing

Respiratory protection : required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: : filter E-(P2)

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.

Environmental exposure controls

Advice : Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid

Colour : colourless

Odour : stinging

Odour Threshold : 0,8 - 5 ppm
 Gaseous hydrogen chloride (HCl).

Melting point/ range : -30 °C



Boiling point	: No data available
Flammability	: The product is not flammable.
Upper explosion limit / Upper flammability limit	: Not applicable
Lower explosion limit / Lower flammability limit	: Not applicable
Flash point	: No data available
Autoignition temperature	: Not applicable
Decomposition temperature	: No data available
pH	: < 1 (20 °C)
Viscosity Viscosity, dynamic	: 2,3 mPa.s (15 °C)
Viscosity, kinematic	: No data available
Flow time	: No data available
Solubility(ies) Water solubility	: (20 °C) soluble
Partition coefficient: n- octanol/water	: Not applicable
Vapor pressure	: 190 hPa (20 °C)
Relative density	: No data available
Density	: ca. 1,19 g/cm ³ (20 °C)
Relative vapour density	: No data available



9.2 Other information

Explosives	: Not classified as explosive.
Oxidizing properties	: none
Burning rate	: No data available
Self-ignition	: Not applicable
Metal corrosion rate	: May be corrosive to metals.
Evaporation rate	: No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Corrosive in contact with metals

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

Hazardous reactions	: Exothermic reaction with: Amines potassium permanganate salts of oxyhalogenic acids semimetallic oxides semimetallic hydrogen compounds Aldehydes vinylmethyl ether Risk of ignition or formation of inflammable gases or vapours with: Carbides lithium silicide Fluorine Generates dangerous gases or fumes in contact with: Aluminium hydrides Formaldehyde Metals strong alkalis Sulphides Risk of explosion with: Alkali metals
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conc. sulfuric acid

10.4 Conditions to avoid

Conditions to avoid : no information available

10.5 Incompatible materials

Materials to avoid : Metals

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Mixture

Acute toxicity

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Dermal: No data available

Skin corrosion/irritation

Remarks: Mixture causes burns.

Serious eye damage/eye irritation

Remarks: Mixture causes serious eye damage.

Risk of blindness!

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Mixture may cause respiratory irritation.

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.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

Components

Hydrochloric Acid

Acute toxicity

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

Inhalation: Cough Difficulty in breathing

Symptoms: mucosal irritations, Cough, Shortness of breath, Inhalation may lead to the formation of oedemas in the respiratory tract., Possible damages:, damage of respiratory tract, tissue damage

Dermal: No data available

Skin corrosion/irritation

Skin - reconstructed human epidermis (RhE)

Result: Corrosive

(OECD Test Guideline 431)

Serious eye damage/eye irritation

Eyes - Bovine cornea

Result: Causes serious eye damage. - 10 min

(OECD Test Guideline 437)

Respiratory or skin sensitization

Maximisation Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

Germ cell mutagenicity

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster ovary cells

Result: Positive results were obtained in some in vitro tests.

Remarks: (ECHA)

Test Type: mitotic recombination assay

Test system: Saccharomyces cerevisiae

Result: negative

Remarks: (ECHA)

Test Type: Ames test

Test system: mouse lymphoma cells

Result: positive

Remarks: (ECHA)

Carcinogenicity

No data available

Reproductive toxicity

No data available



Specific target organ toxicity - single exposure

May cause respiratory irritation. - Respiratory system

Acute oral toxicity - If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

Acute inhalation toxicity - mucosal irritations, Cough, Shortness of breath,

Inhalation may lead to the formation of oedemas in the respiratory tract., Possible damages:, damage of respiratory tract, tissue damage

Specific target organ toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

No aspiration toxicity classification

SECTION 12: Ecological information**12.1 Toxicity****Product:**

Toxicity to fish : Remarks: No data available

Components:**Hydrochloric Acid:**

Toxicity to fish : LC50 (Gambusia affinis (Mosquito fish)): 282 mg/l
Exposure time: 96 h
Remarks: (IUCLID)

12.2 Persistence and degradability**Product:**

Biodegradability : Remarks: No data available

Components:**Hydrochloric Acid:**

Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential**Product:**

Bioaccumulation : Remarks: No data available

Components:**Hydrochloric Acid:**

Partition coefficient: n-octanol/water : Remarks: Not applicable for inorganic substances



12.4 Mobility in soil

Product:

Stability in soil : Remarks: No data available

12.5 Results of PBT and vPvB assessment

Product:

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.

Components:

Hydrochloric Acid:

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

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

Product:

Additional ecological information : Forms corrosive mixtures with water even if diluted. Harmful effect due to pH shift.

Discharge into the environment must be avoided.

No data available

Components:

Hydrochloric Acid:

Additional ecological information : May be harmful to aquatic organisms due to the shift of the pH.

Do not empty into drains.

Harmful effect due to pH shift.

Discharge into the environment must be avoided.



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.

SECTION 14: Transport information

14.1 UN number or ID number

ADR : UN 1789

IMDG : UN 1789

IATA : UN 1789

14.2 UN proper shipping name

ADR : HYDROCHLORIC ACID

IMDG : HYDROCHLORIC ACID

IATA : Hydrochloric acid

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADR	: 8	
IMDG	: 8	
IATA	: 8	

14.4 Packing group

ADR

Packing group : II
Classification Code : C1
Hazard Identification : 80
Number
Labels : 8
Tunnel restriction code : (E)

IMDG

Packing group : II
Labels : 8
EmS Code : F-A, S-B

IATA (Cargo)

Packing instruction (cargo aircraft) : 855
Packing instruction (LQ) : Y840
Packing group : II
Labels : Class 8 - Corrosive substances



IATA_P (Passenger)

Packing instruction : 851
(passenger aircraft)
Packing instruction (LQ) : Y840
Packing group : II
Labels : Class 8 - Corrosive substances

14.5 Environmental hazards**ADR**

Environmentally : no
hazardous

IMDG

Marine pollutant : no

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

REACH - Restrictions on the manufacture, placing : Conditions of restriction for the
on the market and use of certain dangerous following entries should be
substances, mixtures and articles (Annex XVII) considered:
Number on list 3

Number on list 75
If you intend to use this product
as tattoo ink, please contact
your vendor.

REACH - Candidate List of Substances of Very : Not applicable
High Concern for Authorisation (Article 59).

Regulation (EU) No 2024/590 on substances that : Not applicable
deplete the ozone layer

Regulation (EU) 2019/1021 on persistent organic : Not applicable
pollutants (recast)

REACH - List of substances subject to : Not applicable
authorisation (Annex XIV)

Seveso III: Directive 2012/18/EU of the : Not applicable
European Parliament and of the Council

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Canada



on the control of major-accident hazards involving dangerous substances.

Other regulations:

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

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.

SECTION 16: Other information

Relevant changes since previous version

8. Exposure controls/personal protection

Full text of H-Statements

H290	: May be corrosive to metals.
H314	: Causes severe skin burns and eye damage.
H318	: Causes serious eye damage.
H335	: May cause respiratory irritation.
H290	: May be corrosive to metals.
H314	: Causes severe skin burns and eye damage.
H315	: Causes skin irritation.
H319	: Causes serious eye irritation.

Full text of other abbreviations

Eye Dam.	: Serious eye damage
Met. Corr.	: Corrosive to metals
Skin Corr.	: Skin corrosion
STOT SE	: Specific target organ toxicity - single exposure
Met. Corr.	: Corrosive to metals
Skin Corr.	: Skin corrosion
Skin Irrit.	: Skin irritation
Eye Irrit.	: Eye irritation
STOT SE	: Specific target organ toxicity - single exposure

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; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; 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 Harmonised 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 Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; 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 - Organisation 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; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other 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 and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.
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Classification of the mixture:

Met. Corr. 1	H290
Skin Corr. 1B	H314
Eye Dam. 1	H318
STOT SE 3	H335

Classification procedure:

Based on product data or assessment
Calculation method
Calculation method
Calculation method

REG_EU / EN





Annex: Exposure scenario

Identified uses:

Use: Industrial use

SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
SU 3, SU 10: Industrial uses: Uses of substances as such or in preparations at industrial sites, Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)
PC19: Intermediate
PC20: Products such as pH-regulators, flocculants, precipitants, neutralization agents
PC21: Laboratory chemicals
PC39: Cosmetics, personal care products
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 tableting, compression, extrusion, pelletisation
PROC15: Use as laboratory reagent
ERC1, ERC2, ERC4, ERC6a, ERC6b: 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

SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
PC20: Products such as pH-regulators, flocculants, precipitants, neutralization agents
PC21: Laboratory chemicals
PC39: Cosmetics, personal care products
ERC8a: Wide dispersive indoor use of processing aids in open systems

Use: Consumer use

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



1. Short title of Exposure Scenario: Industrial use

Main User Groups	: SU 3
Sectors of end-use	: SU 3, SU 10
Chemical product category	: PC19, PC20, PC21, PC39
Process categories	: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15
Environmental Release Categories	: ERC1, ERC2, ERC4, ERC6a, ERC6b:

2. Exposure scenario

2.1 Contributing scenario controlling environmental exposure for: ERC1, ERC2, ERC4, ERC6a, ERC6b

Other given operational conditions affecting environmental exposure

Number of emission days per year : 360
Substance hydrolyses rapidly.

Technical conditions and measures / Organizational measures

Water : Ensure all waste water is collected and treated via a WWTP., Solutions with low pH-value must be neutralized before discharge.

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

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 40 %.
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 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

Wear suitable gloves tested to EN374., Use suitable eye protection.

2.3 Contributing scenario controlling worker exposure for: PROC5, PROC8a, PROC9, PROC10, PROC14

Product characteristics

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



Mixture/Article up to 40 %.
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 LEV and enhanced 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

Wear suitable gloves tested to EN374., Use suitable eye protection.

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR*
ERC1	Qualitative assessment used to conclude safe use.		All compartments			< 1
ERC2	Qualitative assessment used to conclude safe use.		All compartments			< 1
ERC4	Qualitative assessment used to conclude safe use.		All compartments			< 1
ERC6a	Qualitative assessment used to conclude safe use.		All compartments			< 1
ERC6b	Qualitative assessment used to conclude safe use.		All compartments			< 1

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR*
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PROC1	ECETOC TRA, modified	longterm, inhalative, local			< 0,01
PROC2	ECETOC TRA, modified	longterm, inhalative, local			0,19
PROC3	ECETOC TRA, modified	longterm, inhalative, local			0,38
PROC4	ECETOC TRA, modified	longterm, inhalative, local			0,76
PROC8b	ECETOC TRA, modified	longterm, inhalative, local			0,57
PROC15	ECETOC TRA, modified	longterm, inhalative, local			0,38

*Risk characterisation ratio

PROC5	ECETOC TRA, modified	longterm, inhalative, local			0,57
PROC8a	ECETOC TRA, modified	longterm, inhalative, local			0,57
PROC9	ECETOC TRA, modified	longterm, inhalative, local			0,46
PROC10	ECETOC TRA, modified	longterm, inhalative, local			0,57
PROC14	ECETOC TRA, modified	longterm, inhalative, local			0,57

*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. 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).

1. Short title of Exposure Scenario: Professional use

Main User Groups : **SU 22**
Sectors of end-use : **SU 22**
Chemical product category : **PC20, PC21, PC39**
Environmental Release Categories : **ERC8a:**

2. Exposure scenario



2.1 Contributing scenario controlling environmental exposure for: ERC8a

Other given operational conditions affecting environmental exposure

Number of emission days per year : 360

Substance hydrolyses rapidly.

Technical conditions and measures / Organizational measures

Water : Ensure all waste water is collected and treated via a WWTP., Solutions with low pH-value must be neutralized before discharge.

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR*
ERC8a	Qualitative assessment used to conclude safe use.		All compartments			< 1

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).

1. Short title of Exposure Scenario: Consumer use

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

2. Exposure scenario

2.1 Contributing scenario controlling environmental exposure for: ERC8a

Other given operational conditions affecting environmental exposure



Number of emission days per year : 360
Substance hydrolyses rapidly.

Technical conditions and measures / Organizational measures

Water : Ensure all waste water is collected and treated via a WWTP., Solutions with low pH-value must be neutralized before discharge.

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR*
ERC8a	Qualitative assessment used to conclude safe use.		All compartments			< 1

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).

