

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

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

1.1 Product identifier

Trade name : HYDROCHLORIC ACID 36%

Registration number : 01-2119484862-27-0078, 01-2119484862-27-0089, UK-01-4393370836-4-0001

EC-No. EC-No. : 231-595-7

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

Use of the Substance/Mixture : Chemical intermediate

Recommended restrictions on use : Reserved for industrial and professional use.

1.3 Details of the supplier of the safety data sheet

Company: CHEMTEK Ltd.
Havenbridge House
North Quay
Great Yarmouth
United Kingdom
NR30 1HZ

Customer Service: +44 1493 660800
Prepared by Product Safety Department

Further information for the safety data sheet :
sales@chemtek.co.uk

1.4 Emergency telephone number

Emergency telephone number: +44 (0) 1493 660803

For additional emergency telephone numbers see section 16 of the Safety Data Sheet.

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

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, 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:**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

Hazardous components which must be listed on the label:
hydrogen chloride

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

2.3 Other hazards

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

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical name	CAS-No. EC-No. Registration number	Classification (REGULATION (EC) No 1272/2008)	Concentration (%)
hydrogen chloride	7647-01-0 231-595-7	1B; H314 STOT SE3; H335 Met. Corr.1; H290	>= 28 - <= 36

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
- If inhaled : Move to fresh air.
Consult a physician after significant exposure.
- In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Never give anything by mouth to an unconscious person.
Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : corrosive effects

Risks : corrosive effects

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : No information available.

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

Further information : Standard procedure for chemical fires.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**Personal precautions : Use personal protective equipment.
Ensure adequate ventilation.
Evacuate personnel to safe areas.**6.2 Environmental precautions**

Environmental precautions : Do not flush into surface water or sanitary sewer system.

6.3 Methods and material for containment and cleaning upMethods for cleaning up : Neutralize with chalk, alkali solution or ammonia.
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

6.4 Reference to other sections

Refer to protective measures listed in sections 7 and 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
To avoid spills during handling keep bottle on a metal tray.
- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
- Other data : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

- Specific use(s) : Chemical intermediate

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
hydrogen chloride	7647-01-0	TWA	5 ppm 8 mg/m ³	2000/39/EC
hydrogen chloride	7647-01-0	STEL	10 ppm 15 mg/m ³	2000/39/EC
hydrogen chloride	7647-01-0	TWA (Gas and aerosol mists)	1 ppm 2 mg/m ³	GB EH40
hydrogen chloride	7647-01-0	STEL (Gas and aerosol mists)	5 ppm 8 mg/m ³	GB EH40

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

Component	End Use	Exposure routes	Potential health effects	Value:

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

hydrogen chloride	Workers	Inhalation	Acute local effects	15 mg/m ³
	Workers	Inhalation	Long-term local effects	8 mg/m ³

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

Component	Environmental Compartment	Value
hydrogen chloride	Fresh water	Value: 0.036 mg/l
	Marine water	Value: 0.036 mg/l
	STP	Value: 0.036 mg/l

8.2 Exposure controls

Personal protective equipment

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Hand protection

: Polyvinyl alcohol or nitrile- butyl-rubber gloves
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
Before removing gloves clean them with soap and water.

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.

Environmental exposure controls

General advice : Do not flush into surface water or sanitary sewer system.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : liquid

Colour : colourless, to, light yellow

Odour : pungent, irritating, strong

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Odour Threshold	:	No data available
pH	:	< 1
Melting point/range	:	Not applicable
Freezing point	:	No data available
Boiling point/boiling range	:	83 °C
Flash point	:	Aqueous system
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapour pressure	:	20 hPa (20 °C)
Relative vapour density	:	No data available
Relative density	:	1,120 (> 20 °C)
Density	:	1.18 g/cm ³ (20 °C)
Bulk density	:	No data available
Solubility(ies)		
Water solubility	:	soluble in hot water, soluble in cold water
Solubility in other solvents	:	soluble Solvent: Diethylether
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Thermal decomposition	:	No data available
Viscosity		
Viscosity, dynamic	:	600 - 1,000 mPa.s (20 °C)

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Viscosity, kinematic : 1.7 mm²/s

Flow time : No data available

9.2 Other information

Self-Accelerating decomposition temperature (SADT) : Method: No information available.

Oxidizing potential : No information available.

SECTION 10: Stability and reactivity**10.1 Reactivity**

Stable under recommended storage conditions.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactionsHazardous reactions : Stable under recommended storage conditions.
No decomposition if used as directed.**10.4 Conditions to avoid**

Conditions to avoid : No data available

10.5 Incompatible materialsMaterials to avoid : Strong bases
Metals**10.6 Hazardous decomposition products**

Hazardous decomposition products : Chlorine

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity****Product:**

Acute oral toxicity : Remarks: Not classified due to lack of data.

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Acute inhalation toxicity : Remarks: Irritating to respiratory system.

Acute dermal toxicity : Remarks: Not classified due to lack of data.

Skin corrosion/irritation**Product:**

Remarks: Extremely corrosive and destructive to tissue.

Serious eye damage/eye irritation**Product:**

Remarks: May cause irreversible eye damage.

Respiratory or skin sensitisation**Product:**

Remarks: No data available

Germ cell mutagenicity**Product:**

Germ cell mutagenicity
Assessment : Not classified due to lack of data.

Carcinogenicity**Product:**

Carcinogenicity
Assessment : Not classified due to lack of data.

Reproductive toxicity**Product:**

Reproductive toxicity
Assessment : Not classified due to lack of data.

STOT - single exposure**Product:**

Assessment: Not classified due to lack of data.

STOT - repeated exposure**Product:**

Assessment: Not classified due to lack of data.

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Aspiration toxicity

Further information

Product:

Remarks: No data available

SECTION 12: Ecological information

12.1 Toxicity

No data available

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: No data available

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data available

Components:

hydrogen chloride:

Partition coefficient: n-octanol/water : log Pow: 0.3
Method: (calculated)

12.4 Mobility in soil

Product:

Mobility : 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.

12.6 Other adverse effects

Product:

Additional ecological information : Remarks: There is no data available for this product.

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

SECTION 13: Disposal considerations

13.1 Waste treatment methods

- | | | |
|------------------------|---|--|
| Product | : | Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Offer surplus and non-recyclable solutions to a licensed disposal company. |
| Contaminated packaging | : | Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers. |

SECTION 14: Transport information

14.1 UN number

- | | | |
|------|---|---------|
| ADR | : | UN 1789 |
| RID | : | UN 1789 |
| IMDG | : | UN 1789 |
| IATA | : | UN 1789 |

14.2 UN proper shipping name

- | | | |
|------|---|-------------------|
| ADR | : | |
| RID | : | |
| IMDG | : | |
| IATA | : | Hydrochloric acid |

14.3 Transport hazard class(es)

- | | | |
|------|---|---|
| ADR | : | 8 |
| RID | : | 8 |
| IMDG | : | 8 |
| IATA | : | 8 |

14.4 Packing group

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

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Classification Code : C1
Hazard Identification Number : 80
Labels : 8

IMDG

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

IATA

Packing group : II
Labels : Corrosive

14.5 Environmental hazards

ADR

Environmentally hazardous : no

RID

Environmentally hazardous : no

IMDG

Marine pollutant : no

14.6 Special precautions for user

Not applicable

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

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 - Candidate List of Substances of Very High Concern for Authorisation (Article 59).

This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer

Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants

Not applicable

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Major Accident Hazard Legislation

Seveso Directive

Directive 96/82/EC does not apply

Please note that Section 3 of this document lists only the hazardous components required by the specific country or region hazard communication regulations. The chemical identifiers listed in Section 3 are used globally for hazard communication purposes and may not reflect those used for chemical inventory coverage in a particular country or region. The chemical inventory information given in Section 15 of this document applies to the product as a whole and should be used when evaluating inventory compliance.

The components of this product are reported in the following inventories:

DSL	:	All components of this product are on the Canadian DSL
AICS	:	On the inventory, or in compliance with the inventory
NZIoC	:	On the inventory, or in compliance with the inventory
ENCS	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
TCSI	:	On the inventory, or in compliance with the inventory
US.TSCA	:	On TSCA Inventory

15.2 Chemical safety assessment

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

SECTION 16: Other information

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

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

Emergency Phone Number

<u>Europe:</u>	All European Countries	+44 (0) 1235 239 670 (NCEC)
<u>Asia Pacific:</u>	East / South East Asia – Regional Number	+65 3158 1074 (NCEC)
	Australia	+61 2 8014 4558

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

	New Zealand	+64 9929 1483 (NCEC)
	China	+86 512 8090 3042 (NCEC)
	Taiwan	+886 2 8793 3212 (NCEC)
	Japan	+81 3 4578 9341 (NCEC)
	Indonesia	007 803 011 0293 (NCEC)
	Malaysia	+60 3 6207 4347 (NCEC)
	Thailand	001 800 120 666 751 (NCEC)
	Korea	+65 3158 1285 (NCEC)
	Vietnam	+84 8 4458 2388 (NCEC)
	India	+65 3158 1198 (NCEC)
	Pakistan	+65 3158 1329 (NCEC)
	Philippines	+65 3158 1203 (NCEC)
	Sri Lanka	+65 3158 1195 (NCEC)
	Bangladesh	+65 3158 1200 (NCEC)
<u>Middle East / Africa:</u>		+44 (0) 1235 239 671 (NCEC)
<u>North America</u>	United States of America (USA)	(800) 424-9300 (CHEMTREC)
	Canada	(800) 424-9300 (CHEMTREC)
<u>Latin America</u>	Mexico	+52 555 004 8763 (NCEC)
	Brazil	+55 11 3197 5891 (NCEC)
	Chile	+56 2 2582 9336 (NCEC)
	All other countries	+44 (0) 1235 239 670 (NCEC)

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Identified uses:

Use: ES2, Used as a chemical intermediate at site other than production sites
SU 3 SU 3 SU4 SU8 SU9 SU11 SU12 SU13 SU19 PROC1 PROC2 PROC3 PROC4 PROC9
PROC15 ERC6a

Use: ES3, Formulation of preparations, Product packaging
SU 3 SU 10 PROC1 PROC2 PROC3 PROC4 PROC5 PROC8a PROC8b PROC9 ERC2

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Use: ES4, Industrial use

SU 3 SU2a SU2b SU 3 SU5 SU14 SU15 SU16 PROC1 PROC2 PROC3 PROC4 PROC9
PROC10 PROC13 PROC15 PROC19 ERC4 ERC6b

Use: ES5, Professional use

SU 22 SU20 SU22 SU23 PROC1 PROC2 PROC3 PROC4 PROC8a PROC10 PROC11 PROC13
PROC15 PROC19 ERC4 ERC6b ERC8a ERC8b ERC8e

Use: ES6, Consumer use

SU 21 SU21 PC20 PC21 PC35 PC37 PC38 ERC8b ERC8e

1. Short title of Exposure Scenario: ES2, Used as a chemical intermediate at site other than production sites

- | | |
|--------------------|--|
| Main User Groups | : SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites |
| Sectors of end-use | : SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
SU4: Manufacture of food products
SU8: Manufacture of bulk, large scale chemicals (including petroleum products)
SU9: Manufacture of fine chemicals
SU11: Manufacture of rubber products
SU12: Manufacture of plastics products, including compounding and conversion
SU13: Manufacture of other non-metallic mineral products, e.g. plasters, cement
SU19: Building and construction work |
| 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
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) |

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

PROC15: Use as laboratory reagentEnvironmental Release Categories : **ERC6a:** Industrial use resulting in manufacture of another substance (use of intermediates)**2.1 Contributing scenario controlling environmental exposure for: ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)****Product characteristics**

Concentration of the Substance in Mixture/Article : < 40%

Frequency and duration of use

Continuous exposure : < 8 hours/day

Other given operational conditions affecting environmental exposure

Number of emission days per year : 360

Technical conditions and measures / Organizational measures

Water : Prevent leaks and prevent soil / water pollution caused by leaks.

Soil : Prevent leaks and prevent soil / water pollution caused by leaks.

Remarks : Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases., The likelihood that workers or the general public or the environment are exposed to the substance under normal or reasonably foreseeable conditions of use is negligible.

Conditions and measures related to external treatment of waste for disposal

Waste treatment : All contaminated waste water must be processed in an industrial or municipal wastewater treatment plant that incorporates both primary and secondary treatments., Substance will dissociate upon contact with water, the only effect is the pH effect, therefore after passing through the STP exposure is considered negligible and with no risk

2.2 Contributing scenario controlling worker exposure for: PROC1: Use in closed process, no likelihood of exposure

Activity : General exposures (closed systems), Continuous process

Product characteristics

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a closed system., Clear transfer lines prior to de-coupling.

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures.

2.3 Contributing scenario controlling worker exposure for: PROC2: Use in closed, continuous process with occasional controlled exposure

Activity : General exposures, Process sampling, Continuous process

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Technical conditions and measures

Handle substance within a closed system., Clear transfer lines prior to de-coupling., Ensure material transfers are under containment or extract ventilation. (Effectiveness (of a measure): 90 %

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures.

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

Protective gloves complying with EN 374.

2.4 Contributing scenario controlling worker exposure for: PROC3: Use in closed batch process (synthesis or formulation)

Activity : Remanufacture of reject articles, General exposures, Use in contained batch processes, Cleaning, with sample collection

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a closed system., Clear transfer lines prior to de-coupling., Drain or remove substance from equipment prior to break-in or maintenance., Ensure material transfers are under containment or extract ventilation. (Effectiveness (of a measure): 90 %

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures., Clear spills immediately.

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

Protective gloves complying with EN 374.

2.5 Contributing scenario controlling worker exposure for: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Activity : Drum/batch transfers, Bulk transfers, General exposures (open systems), Remanufacture of reject articles, Cleaning, with sample collection

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Use drum pumps., Drain or remove substance from equipment prior to break-in or maintenance., Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %
Use bulk or semi-bulk handling systems.

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures., Clear spills immediately.

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

Protective gloves complying with EN 374.

2.6 Contributing scenario controlling worker exposure for: PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Activity : Drum and small package filling, Drum/batch transfers, Equipment cleaning and maintenance

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a predominantly closed system provided with extract ventilation., Fill containers/cans at dedicated filling points supplied with local extract ventilation. (Effectiveness (of a measure): 90 %

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures., Clear spills immediately.

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

Protective gloves complying with EN 374.

2.7 Contributing scenario controlling worker exposure for: PROC15: Use as laboratory reagent

Activity : Laboratory activities

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Application duration : < 240 min

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Carry out in a vented booth provided with laminar airflow., Handle in a fume cupboard or under extract ventilation. (Effectiveness (of a measure): 80 %

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures., Clear spills immediately., Avoid carrying out operation for more than 4 hours.

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

Protective gloves complying with EN 374.

3. Exposure estimation and reference to its source

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	RCR
PROC1	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	0.02 mg/m ³	0
PROC2	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	1.5 mg/m ³	0.2
PROC3	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	3.75 mg/m ³	0.5
PROC4	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	3 mg/m ³	0.4
PROC9	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	7.5 mg/m ³	0.9
PROC15	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	1.8 mg/m ³	0.2

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

Information on scaling is available in Part G Extending the SDS of the Guidance on Information requirements and the CSA from the documents section of the ECHA website.

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

1. Short title of Exposure Scenario: ES3, Formulation of preparations, Product packaging

Main User Groups : **SU 3:** Industrial uses: Uses of substances as such or in preparations at industrial sites

Sectors of end-use : **SU 10:** Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

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)

Environmental Release Categories : **ERC2:** Formulation of preparations

2.1 Contributing scenario controlling environmental exposure for: **ERC2: Formulation of preparations**

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Frequency and duration of use

Continuous exposure : < 8 hours/day

Other given operational conditions affecting environmental exposure

Number of emission days per year : 360

Technical conditions and measures / Organizational measures

Water : Prevent leaks and prevent soil / water pollution caused by leaks.
 Soil : Prevent leaks and prevent soil / water pollution caused by leaks.
 Remarks : Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases., The likelihood that workers or the general public or the

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

environment are exposed to the substance under normal or reasonably foreseeable conditions of use is negligible.

Conditions and measures related to external treatment of waste for disposal

Waste treatment : All contaminated waste water must be processed in an industrial or municipal wastewater treatment plant that incorporates both primary and secondary treatments., Substance will dissociate upon contact with water, the only effect is the pH effect, therefore after passing through the STP exposure is considered negligible and with no risk

2.2 Contributing scenario controlling worker exposure for: PROC1: Use in closed process, no likelihood of exposure

Activity : General exposures (closed systems), Continuous process

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a closed system., Clear transfer lines prior to de-coupling.

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures.

2.3 Contributing scenario controlling worker exposure for: PROC2: Use in closed, continuous process with occasional controlled exposure

Activity : General exposures, Process sampling, Continuous process

Product characteristics

Concentration of the Substance in : < 40%

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Mixture/Article

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a closed system., Clear transfer lines prior to de-coupling., Ensure material transfers are under containment or extract ventilation. (Effectiveness (of a measure): 90 %

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures.

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

Protective gloves complying with EN 374.

2.4 Contributing scenario controlling worker exposure for: PROC3: Use in closed batch process (synthesis or formulation)

Activity : Remanufacture of reject articles, General exposures, Use in contained batch processes, Cleaning, with sample collection

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a closed system., Clear transfer lines prior to de-coupling., Drain or remove substance from equipment prior to break-in or maintenance., Ensure material transfers are under containment or extract ventilation. (Effectiveness (of a measure): 90 %

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures., Clear spills immediately.

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

Protective gloves complying with EN 374.

2.5 Contributing scenario controlling worker exposure for: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Activity : Drum/batch transfers, Bulk transfers, General exposures (open systems), Remanufacture of reject articles, Cleaning, with sample collection

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Use drum pumps., Drain or remove substance from equipment prior to break-in or maintenance., Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %
Use bulk or semi-bulk handling systems.

Organisational measures to prevent /limit releases, dispersion and exposure

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Ensure operatives are trained to minimise exposures., Clear spills immediately.

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

Protective gloves complying with EN 374.

2.6 Contributing scenario controlling worker exposure for: PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)

Activity : Drum/batch transfers, Bulk transfers, General exposures (open systems), Cleaning, Mixing operations (open systems)

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Drain or remove substance from equipment prior to break-in or maintenance., Transfer materials directly to mixing vessels. Use drum pumps.

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures., Clear spills immediately.

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

Respirator with filter for organic vapour Protective gloves complying with EN 374. Use suitable eye protection.

2.7 Contributing scenario controlling worker exposure for: PROC8a, PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities, Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities

Activity : Process sampling, Drum/batch transfers, Bulk transfers, General exposures (open systems), Equipment cleaning and maintenance, transport, internal

Product characteristics

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a predominantly closed system provided with extract ventilation., Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures., Clear spills immediately.

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

Protective gloves complying with EN 374.

2.8 Contributing scenario controlling worker exposure for: PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Activity : Drum and small package filling, Drum/batch transfers, Equipment cleaning and maintenance

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a predominantly closed system provided with extract ventilation., Fill containers/cans at dedicated filling points supplied with local extract ventilation. (Effectiveness (of a measure): 90 %

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures., Clear spills immediately.

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

Protective gloves complying with EN 374.

3. Exposure estimation and reference to its source

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	RCR
PROC1	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	0.02 mg/m ³	0
PROC2	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	1.5 mg/m ³	0.2
PROC3	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	3.75 mg/m ³	0.5
PROC4	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	3 mg/m ³	0.4
PROC5	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	7.5 mg/m ³	0.9
PROC8a	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	7.5 mg/m ³	0.9
PROC8b	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	7.5 mg/m ³	0.9
PROC9	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	7.5 mg/m ³	0.9

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

Information on scaling is available in Part G Extending the SDS of the Guidance on Information requirements and the CSA from the documents section of the ECHA website.

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

1. Short title of Exposure Scenario: ES4, Industrial use

- Main User Groups : **SU 3:** Industrial uses: Uses of substances as such or in preparations at industrial sites
- Sectors of end-use : **SU2a:** Mining, (without offshore industries)
SU2b: Offshore industries
SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
SU5: Manufacture of textiles, leather, fur
SU14: Manufacture of basic metals, including alloys
SU15: Manufacture of fabricated metal products, except machinery and equipment
SU16: Manufacture of computer, electronic and optical products, electrical equipment
- 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
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC10: Roller application or brushing
PROC13: Treatment of articles by dipping and pouring
PROC15: Use as laboratory reagent
PROC19: Hand-mixing with intimate contact and only PPE available
- Environmental Release Categories : **ERC4:** Industrial use of processing aids in processes and products, not becoming part of articles
ERC6b: Industrial use of reactive processing aids

2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC6b: Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use of reactive processing aids

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Frequency and duration of use

Continuous exposure : < 8 hours/day

Other given operational conditions affecting environmental exposure

Number of emission days per year : 360

Technical conditions and measures / Organizational measures

Water : Prevent leaks and prevent soil / water pollution caused by leaks.
 Soil : Prevent leaks and prevent soil / water pollution caused by leaks.
 Remarks : Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases., The likelihood that workers or the general public or the environment are exposed to the substance under normal or reasonably foreseeable conditions of use is negligible.

Conditions and measures related to external treatment of waste for disposal

Waste treatment : All contaminated waste water must be processed in an industrial or municipal wastewater treatment plant that incorporates both primary and secondary treatments., Substance will dissociate upon contact with water, the only effect is the pH effect, therefore after passing through the STP exposure is considered negligible and with no risk

2.2 Contributing scenario controlling worker exposure for: PROC1: Use in closed process, no likelihood of exposure

Activity : General exposures (closed systems), Continuous process

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
 Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a closed system., Clear transfer lines prior to de-coupling.

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures.

2.3 Contributing scenario controlling worker exposure for: PROC2: Use in closed, continuous process with occasional controlled exposure

Activity : General exposures, Process sampling, Continuous process

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a closed system., Clear transfer lines prior to de-coupling., Ensure material transfers are under containment or extract ventilation. (Effectiveness (of a measure): 90 %

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures.

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

Protective gloves complying with EN 374.

2.4 Contributing scenario controlling worker exposure for: PROC3: Use in closed batch process (synthesis or formulation)

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Activity : Remanufacture of reject articles, General exposures, Use in contained batch processes, Cleaning, with sample collection

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a closed system., Clear transfer lines prior to de-coupling., Drain or remove substance from equipment prior to break-in or maintenance., Ensure material transfers are under containment or extract ventilation. (Effectiveness (of a measure): 90 %

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures., Clear spills immediately.

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

Protective gloves complying with EN 374.

2.5 Contributing scenario controlling worker exposure for: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Activity : Drum/batch transfers, Bulk transfers, General exposures (open systems), Remanufacture of reject articles, Cleaning, with sample collection

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (mate-

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

rial transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Use drum pumps., Drain or remove substance from equipment prior to break-in or maintenance., Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %
Use bulk or semi-bulk handling systems.

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures., Clear spills immediately.

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

Protective gloves complying with EN 374.

2.6 Contributing scenario controlling worker exposure for: PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Activity : Drum and small package filling, Drum/batch transfers, Equipment cleaning and maintenance

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Technical conditions and measures

Handle substance within a predominantly closed system provided with extract ventilation., Fill containers/cans at dedicated filling points supplied with local extract ventilation. (Effectiveness (of a measure): 90 %

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures., Clear spills immediately.

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

Protective gloves complying with EN 374.

2.7 Contributing scenario controlling worker exposure for: PROC10: Roller application or brushing

Activity : Rolling, Brushing, Equipment cleaning and maintenance

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures., Clear spills immediately.

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

Protective gloves complying with EN 374.

2.8 Contributing scenario controlling worker exposure for: PROC13: Treatment of articles by dipping and pouring

Activity : Dipping, immersion and pouring, Treatment by dipping and pouring

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 25 %.

Physical Form (at time of use) : Liquid mixture

Vapour pressure : 0.0189 - 11.4 hPa

Process Temperature : 20 - 100 °C

Remarks : 15%

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes a good basic standard of occupational hygiene is implemented., Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Aerosol generation due to elevated process temperature

Technical conditions and measures

Carry out in a vented booth or extracted enclosure., Drain or remove substance from equipment prior to break-in or maintenance., Provide extract ventilation to material transfer points and other openings. (Effectiveness (of a measure): 90 %

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures., Clear spills immediately., Automate activity where possible.

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

Protective gloves complying with EN 374.

2.9 Contributing scenario controlling worker exposure for: PROC15: Use as laboratory reagent

Activity : Laboratory activities

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture

Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Frequency and duration of use

Application duration : < 240 min

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Carry out in a vented booth provided with laminar airflow., Handle in a fume cupboard or under extract ventilation. (Effectiveness (of a measure): 80 %

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures., Clear spills immediately., Avoid carrying out operation for more than 4 hours.

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

Protective gloves complying with EN 374.

2.10 Contributing scenario controlling worker exposure for: PROC19: Hand-mixing with intimate contact and only PPE available

Activity : Mixing operations (open systems), Additive premixing

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures., Clear spills immediately.

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

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Wear a respirator conforming to EN140 with Type A filter or better., Respirator with a half face mask Protective gloves complying with EN 374.

3. Exposure estimation and reference to its source

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	RCR
PROC1	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	0.02 mg/m ³	0
PROC2	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	1.5 mg/m ³	0.2
PROC3	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	3.75 mg/m ³	0.5
PROC4	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	3 mg/m ³	0.4
PROC9	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	7.5 mg/m ³	0.9
PROC10	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	7.5 mg/m ³	0.9
PROC13	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	7.5 mg/m ³	0.9
PROC15	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	1.8 mg/m ³	0.2
PROC19	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	7.5 mg/m ³	0.9

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

Information on scaling is available in Part G Extending the SDS of the Guidance on Information requirements and the CSA from the documents section of the ECHA website.

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

1. Short title of Exposure Scenario: ES5, Professional use

Main User Groups : **SU 22:** Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Sectors of end-use : **SU20:** Health services
SU22: Public domain (administration, education, entertain-

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

ment, services, craftsmen)

SU23: Electricity, steam, gas water supply and sewage treatment

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
PROC8a: Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at non-dedicated facilities
PROC10: Roller application or brushing
PROC11: Non industrial spraying
PROC13: Treatment of articles by dipping and pouring
PROC15: Use as laboratory reagent
PROC19: Hand-mixing with intimate contact and only PPE available

Environmental Release Categories

: **ERC4:** Industrial use of processing aids in processes and products, not becoming part of articles
ERC6b: Industrial use of reactive processing aids
ERC8a: Wide dispersive indoor use of processing aids in open systems
ERC8b: Wide dispersive indoor use of reactive substances in open systems
ERC8e: Wide dispersive outdoor use of reactive substances in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC6b, ERC8a, ERC8b, ERC8e: Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use of reactive processing aids, Wide dispersive indoor use of processing aids in open systems, Wide dispersive indoor use of reactive substances in open systems, Wide dispersive outdoor use of reactive substances in open systems

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Frequency and duration of use

Continuous exposure : < 8 hours/day

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Other given operational conditions affecting environmental exposure

Number of emission days per year : 360

Technical conditions and measures / Organizational measures

Water : Prevent leaks and prevent soil / water pollution caused by leaks.

Soil : Prevent leaks and prevent soil / water pollution caused by leaks.

Remarks : Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases., The likelihood that workers or the general public or the environment are exposed to the substance under normal or reasonably foreseeable conditions of use is negligible.

Conditions and measures related to external treatment of waste for disposal

Waste treatment : All contaminated waste water must be processed in an industrial or municipal wastewater treatment plant that incorporates both primary and secondary treatments., Substance will dissociate upon contact with water, the only effect is the pH effect, therefore after passing through the STP exposure is considered negligible and with no risk, Ensure all waste water is collected and treated via a WWTP.

2.2 Contributing scenario controlling worker exposure for: PROC1: Use in closed process, no likelihood of exposure

Activity : Application in a closed system, Continuous process

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Technical conditions and measures

Handle substance within a closed system., Clear transfer lines prior to de-coupling.

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures.

2.3 Contributing scenario controlling worker exposure for: PROC2: Use in closed, continuous process with occasional controlled exposure

Activity : Application in a closed system, Process sampling, Continuous process

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a closed system., Clear transfer lines prior to de-coupling., Ensure material transfers are under containment or extract ventilation. (Effectiveness (of a measure): 90 %

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures.

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

Protective gloves complying with EN 374.

2.4 Contributing scenario controlling worker exposure for: PROC3: Use in closed batch process (synthesis or formulation)

Activity : Application in a closed system, Remanufacture of reject articles, Use in contained batch processes, Cleaning, with sample collection

Product characteristics

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a closed system., Clear transfer lines prior to de-coupling., Drain or remove substance from equipment prior to break-in or maintenance., Ensure material transfers are under containment or extract ventilation. (Effectiveness (of a measure): 90 %

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures.

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

Protective gloves complying with EN 374.

2.5 Contributing scenario controlling worker exposure for: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Activity : Drum/batch transfers, Bulk transfers, General exposures (open systems), Remanufacture of reject articles, Cleaning, with sample collection

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

ly).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Clear transfer lines prior to de-coupling., Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %
Use bulk or semi-bulk handling systems., Use drum pumps.

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures., Clear spills immediately.

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

Protective gloves complying with EN 374.

2.6 Contributing scenario controlling worker exposure for: PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities

Activity : Process sampling, Drum/batch transfers, Bulk transfers, General exposures (open systems), Equipment cleaning and maintenance, transport, internal

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a predominantly closed system provided with extract ventilation., Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures., Clear spills immediately.

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

Protective gloves complying with EN 374.

2.7 Contributing scenario controlling worker exposure for: PROC10: Roller application or brushing

Activity : Rolling, Brushing, Equipment cleaning and maintenance

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour)., Exhaust ventilation equipped with scrubbers. (Effectiveness (of a measure): 90 %

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures., Clear spills immediately.

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

Protective gloves complying with EN 374.

2.8 Contributing scenario controlling worker exposure for: PROC11: Non industrial spraying

Activity : Spraying/ fogging by manual application, Spraying/ fogging by machine application, Spray Bottle

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 25 %.

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Physical Form (at time of use) : Liquid mixture

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes a good basic standard of occupational hygiene is implemented., Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Aerosol generation due to elevated process temperature

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures., Clear spills immediately.

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

Wear a respirator conforming to EN140 with Type A filter or better., Respirator with a half face mask Protective gloves complying with EN 374.

2.9 Contributing scenario controlling worker exposure for: PROC13: Treatment of articles by dipping and pouring

Activity : Dipping, immersion and pouring, Treatment by dipping and pouring

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 25 %.

Physical Form (at time of use) : Liquid mixture

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes a good basic standard of occupational hygiene is

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

implemented., Operation is carried out at elevated temperature (> 20°C above ambient temperature)., Aerosol generation due to elevated process temperature

Technical conditions and measures

Carry out in a vented booth or extracted enclosure., Drain or remove substance from equipment prior to break-in or maintenance., Provide extract ventilation to material transfer points and other openings. (Effectiveness (of a measure): 90 %

Organisational measures to prevent /limit releases, dispersion and exposure

Automate activity where possible., Clear spills immediately., Ensure operatives are trained to minimise exposures.

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

Protective gloves complying with EN 374.

2.10 Contributing scenario controlling worker exposure for: PROC15: Use as laboratory reagent

Activity : Laboratory activities

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Application duration : < 240 min

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Carry out in a vented booth or extracted enclosure., Handle in a fume cupboard or under extract ventilation. (Effectiveness (of a measure): 80 %

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid carrying out operation for more than 4 hours., Clear spills immediately., Ensure operatives are trained to minimise exposures.

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

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Protective gloves complying with EN 374.

2.11 Contributing scenario controlling worker exposure for: PROC19: Hand-mixing with intimate contact and only PPE available

Activity : Mixing operations (open systems), Additive premixing

Product characteristics

Concentration of the Substance in Mixture/Article : < 40%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa

Amount used

Remarks : Varies between milliliters (sampling) and cubic meters (material transfers).

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Organisational measures to prevent /limit releases, dispersion and exposure

Clear spills immediately., Ensure operatives are trained to minimise exposures.

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

Wear a full face respirator conforming to EN140 with Type A filter or better., Respirator with a half face mask Protective gloves complying with EN 374.

3. Exposure estimation and reference to its source

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	RCR
PROC1	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	0.02 mg/m ³	0
PROC2	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	1.5 mg/m ³	0.2
PROC3	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	3.75 mg/m ³	0.5
PROC4	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	3 mg/m ³	0.4
PROC8a	ECETOC TRA	Inhalation exposure	Predicted expo-	7.5 mg/m ³	0.9

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

			sure concentration		
PROC10	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	7.5 mg/m ³	0.9
PROC11	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	7.5 mg/m ³	0.9
PROC13	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	7.5 mg/m ³	0.9
PROC15	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	1.8 mg/m ³	0.2
PROC19	ECETOC TRA	Inhalation exposure	Predicted exposure concentration	7.5 mg/m ³	0.9

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

Information on scaling is available in Part G Extending the SDS of the Guidance on Information requirements and the CSA from the documents section of the ECHA website.

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

1. Short title of Exposure Scenario: ES6, Consumer use

Main User Groups : **SU 21:** Consumer uses: Private households (= general public = consumers)

Sectors of end-use : **SU21:** Private households (=general public = consumers)

Chemical product category : **PC20:** Products such as pH-regulators, flocculants, precipitants, neutralization agents
PC21: Laboratory chemicals
PC35: Washing and cleaning products (including solvent based products)
PC37: Water treatment chemicals
PC38: Welding and soldering products (with flux coatings or flux cores.), flux products

Environmental Release Categories : **ERC8b:** Wide dispersive indoor use of reactive substances in open systems
ERC8e: Wide dispersive outdoor use of reactive substances

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8b, ERC8e: Wide dispersive indoor use of reactive substances in open systems, Wide dispersive outdoor use of reactive substances in open systems**Product characteristics**

Concentration of the Substance in Mixture/Article : <20%

Frequency and duration of useSingle exposure : 5 days/year
Continuous exposure : < 4 hours/day**Other given operational conditions affecting environmental exposure**

Number of emission days per year : 360

Conditions and measures related to external treatment of waste for disposal

Waste treatment : All contaminated waste water must be processed in an industrial or municipal wastewater treatment plant that incorporates both primary and secondary treatments., Substance will dissociate upon contact with water, the only effect is the pH effect, therefore after passing through the STP exposure is considered negligible and with no risk, Ensure all waste water is collected and treated via a WWTP.

2.2 Contributing scenario controlling consumer exposure for: PC20, PC21, PC35, PC37, PC38: Products such as pH-regulators, flocculants, precipitants, neutralization agents, Laboratory chemicals, Washing and cleaning products (including solvent based products), Water treatment chemicals, Welding and soldering products (with flux coatings or flux cores.), flux products**Product characteristics**

Concentration of the Substance in Mixture/Article : <20%

Physical Form (at time of use) : Liquid mixture
Vapour pressure : 5 - 100 hPa**Amount used**

: 0.5 l

HYDROCHLORIC ACID 36%

Version 1.6

Revision Date 27.07.2017

Print Date 14.10.2017

Frequency and duration of use

Frequency of use : 5 days/year

Other given operational conditions affecting consumers exposure

Room size : 50 m³

Ventilation rate per hour : 2

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	RCR
PC35	Qualitative assessment	Local, Inhalation exposure, Consumers	Washing and cleaning products (including solvent based products)	Predicted exposure concentration	15mg/m ³	
PC35	Qualitative assessment	Local, Dermal exposure, Consumers, Use of appropriate dermal protection	Washing and cleaning products (including solvent based products)	Predicted exposure concentration	465mg/cm ²	

Consumers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	RCR

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

Where other RMM/OC are adopted, then users should ensure that risks are managed to at least equivalent levels.

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.