

**Safety data sheet
according to 1907/2006/EC, Article 31**

revised on: 16.01.2024

Version number 3

Creation Date: 22.07.2019

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

- **1.1 Product identifier**
- **Trade name: Hydrochloric acid (4.0 N)**
- **Article number:** 824, 851
- **CAS Number:** -
- **Registration number** This product is a mixture. For relevant UK REACH registration numbers see section 3.
- **UFI:** HH32-C0E0-0008-JJE0
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
The product is not intended for use by consumers
For professional users only
- **Life cycle stages**
F Formulation or re-packing
IS Use at industrial Sites
- **Application of the substance / the mixture**
Chemical analytics
Laboratory chemical
Commercial use
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Th. Geyer GmbH & Co. KG
Dornierstr. 4 – 6
D-71272 Renningen

Tel.: +49(0)7159-1637-0, Fax:+49 (0)7159/18417
www.thgeyer.de
sicherheitsdatenblaetter@thgeyer.de
- **Further information obtainable from:** Product management department
- **1.4 Emergency telephone number:**
National Poisons Information Service
City Hospital
Dudley Road
Birmingham B18 7QH
Tel.:Emergency: (00 44) 87 06 00 62 66
Members of the public seeking specific information on poisons should contact:
In England and Wales: NHS 111 - dial 111
In Scotland: NHS 24 - dial 111

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS05 corrosion

Met. Corr.1 H290 May be corrosive to metals.

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GHS07

Skin Irrit. 2 H315 Causes skin irritation.
 Eye Irrit. 2 H319 Causes serious eye irritation.
 STOT SE 3 H335 May cause respiratory irritation.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the GB CLP regulation.

Hazard pictograms



GHS05 GHS07

Signal word Warning

Hazard-determining components of labelling:

Hydrochloric acid

Hazard statements

H290 May be corrosive to metals.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H335 May cause respiratory irritation.

Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
 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 [or shower].
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P390 Absorb spillage to prevent material damage.

2.3 Other hazards

Results of PBT and vPvB assessment

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

• **Description:** Mixture of substances listed below with nonhazardous additions.

Dangerous components:

CAS: 7647-01-0	Hydrochloric acid	≥10–<25%
EINECS: 231-595-7	Met. Corr.1, H290; Skin Corr. 1B, H314; Eye Dam. 1, H318	
Reg.nr.: 01-2119484862-27-XXXX	STOT SE 3, H335	

• **Additional information:** For the wording of the listed hazard phrases refer to section 16.

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SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:**
Supply fresh air.
Seek medical treatment in case of complaints.
- **After skin contact:**
Wash with plenty of soap and water, take off soiled clothes and shoes.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Rinse out opened eye for several minutes under running water.
Seek medical treatment.
Remove any contact lenses if possible.
Continue rinsing.
- **After swallowing:** Drink plenty of water and provide fresh air. Call for a doctor immediately.
- **Information for doctor:** Please observe safety data sheet/label.
- **4.2 Most important symptoms and effects, both acute and delayed**
Irritation
Breathing difficulty
Coughing
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet.
- **5.2 Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Hydrogen chloride gas
Formation of toxic gases is possible during heating or in case of fire.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.
- **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Safely prevent extinguishing water from entering groundwater or surface water.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Corrosive to metals.
- **6.2 Environmental precautions:** Do not allow to enter sewers/surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Cover the sewerage system.
Prevent spreading over an area (e.g. by damming or oil booms).
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 13.
Dispose of the material collected according to regulations.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.

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See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Store only in the original receptacle.
Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
No metal containers
Keep container tightly sealed.
- **Storage class:** 8 B
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**

CAS: 7647-01-0 Hydrochloric acid

WEL	Short-term value: 8 mg/m ³ , 5 ppm Long-term value: 2 mg/m ³ , 1 ppm (gas and aerosol mists)
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- **PNECs**
- values relevant to the environment
PNEC 0.176 mg/l freshwater short-term (single)
PNEC 0.018 mg/l seawater short-term (one-off)
PNEC 1.35 mg/l Wastewater treatment plant (STP) short-term (one-off)
PNEC 6.97 mg/kg freshwater sediment short-term (single)
PNEC 0.697 mg/kg marine sediment short-term (single)
PNEC 1.29 mg/kg soil short-term (single)
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Appropriate engineering controls** No further data; see section 7.
- **Individual protection measures, such as personal protective equipment**
- **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
Wash hands before breaks and at the end of work.
- **Respiratory protection:** Not required.
- **Hand protection**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

NBR: Acrylonitrile butadiene rubber

Material thickness > 0.11 mm

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Level 6 for applications > 480 min

· Eye/face protection


Tightly sealed goggles

· Body protection:


Protective work clothing (e. g. safety shoes EN ISO 20345, long-sleeved protective working garments).

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties
· General Information
· Physical state

Fluid

· Colour:

Colourless

· Odour:

Pungent

· Odour threshold:

Not determined.

· Melting point/freezing point:

Undetermined.

· Boiling point or initial boiling point and boiling range

Undetermined.

· Flammability

Not applicable.

· Lower and upper explosion limit
· Lower:

Not determined.

· Upper:

Not determined.

· Flash point:

Not applicable.

· Decomposition temperature:

Not determined.

· pH at 20 °C

<1

· Viscosity:
· Kinematic viscosity at 20 °C

30.5 s (DIN 53211/4)

· Dynamic:

Not determined.

· Solubility
· water:

Fully miscible.

· Partition coefficient n-octanol/water (log value)

Not determined.

· Vapour pressure at 20 °C:

23 hPa (CAS: 7732-18-5 Water)

· Density and/or relative density
· Density:

Not determined.

· Relative density

Not determined.

· Vapour density

Not determined.

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- **9.2 Other information**
- **Appearance:**
- **Form:** Fluid
- **Important information on protection of health and environment, and on safety.**
- **Ignition temperature:** Product is not selfigniting.
- **Explosive properties:** Product does not present an explosion hazard.
- **Solvent content:**
- **Water:** ≥75.0 %
- **VOC (EC)** 0.00 %
- **Change in condition**
- **Evaporation rate** Not determined.

- **Information with regard to physical hazard classes**
- **Explosives** Void
- **Flammable gases** Void
- **Aerosols** Void
- **Oxidising gases** Void
- **Gases under pressure** Void
- **Flammable liquids** Void
- **Flammable solids** Void
- **Self-reactive substances and mixtures** Void
- **Pyrophoric liquids** Void
- **Pyrophoric solids** Void
- **Self-heating substances and mixtures** Void
- **Substances and mixtures, which emit flammable gases in contact with water** Void
- **Oxidising liquids** Void
- **Oxidising solids** Void
- **Organic peroxides** Void
- **Corrosive to metals** May be corrosive to metals.
- **Desensitised explosives** Void

SECTION 10: Stability and reactivity

- **10.1 Reactivity** Corrosive to metals.
- **10.2 Chemical stability** Stable when stored and handled properly.
- **10.3 Possibility of hazardous reactions**
Exothermic reaction.
Reacts with strong oxidising agents.
Reacts with earth alkaline metals.
Reacts with alkali (lyes).
- **10.4 Conditions to avoid** Heat, flames and sparks.
- **10.5 Incompatible materials:** Avoid contact with other chemicals.
- **10.6 Hazardous decomposition products:** In case of fire: see section 5.

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Based on available data, the classification criteria are not met.

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· LD/LC50 values relevant for classification:
CAS: 7647-01-0 Hydrochloric acid

Oral	LD50	900 mg/kg (rabbit)
Dermal	LD50	>5,010 mg/kg (rabbit)

- **Skin corrosion/irritation** Causes skin irritation.
- **Serious eye damage/irritation** Causes serious eye irritation.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** May cause respiratory irritation.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.
- **11.2 Information on other hazards**

· Endocrine disrupting properties

None of the ingredients is listed.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties**
The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
Observe local (country-specific) regulations and laws.
This product and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
Chemicals must be disposed of in accordance with the respective national regulations.

· European waste catalogue

HP5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP8	Corrosive

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- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

<ul style="list-style-type: none"> · 14.1 UN number or ID number · ADR, IMDG, IATA 	UN1789
<ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG, IATA 	1789 HYDROCHLORIC ACID solution HYDROCHLORIC ACID solution
<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR 	<div style="text-align: center;">  </div> <ul style="list-style-type: none"> · Class · Label
<ul style="list-style-type: none"> · IMDG, IATA 	<div style="text-align: center;">  </div> <ul style="list-style-type: none"> · Class · Label
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	II
<ul style="list-style-type: none"> · 14.5 Environmental hazards: 	Not applicable.
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Segregation groups · Stowage Category · Segregation Code 	Warning: Corrosive substances. 80 F-A,S-B (SGG1) Acids C SG36 Stow "separated from" SGG18-alkalis. SG49 Stow "separated from" SGG6-cyanides
<ul style="list-style-type: none"> · 14.7 Maritime transport in bulk according to IMO instruments 	Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: 	<hr style="border-top: 1px dashed black;"/> <ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Excepted quantities (EQ)
<ul style="list-style-type: none"> · Transport category · Tunnel restriction code 	<ul style="list-style-type: none"> 1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml 2 E

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<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
<ul style="list-style-type: none"> · UN "Model Regulation": 	UN 1789 HYDROCHLORIC ACID SOLUTION, 8, II

SECTION 15: Regulatory information

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

- **Inventory of Hazardous Chemicals**

None of the ingredients is listed.

- **Poisons Act**

- **Regulated explosives precursors**

None of the ingredients is listed.

- **Regulated poisons**

None of the ingredients is listed.

- **Reportable explosives precursors**

None of the ingredients is listed.

- **Reportable poisons**

None of the ingredients is listed.

- **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the GB CLP regulation.

- **Hazard pictograms**



GHS05 GHS07

- **Signal word** Warning

- **Hazard-determining components of labelling:**

Hydrochloric acid

- **Hazard statements**

H290 May be corrosive to metals.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

- **Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

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 [or shower].

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

P390 Absorb spillage to prevent material damage.

- **Directive 2012/18/EU**

- **Named dangerous substances - ANNEX I** None of the ingredients is listed.

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- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3

- **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

- **REGULATION (EU) 2019/1148**

- **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

- **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

- **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

- **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

- **National regulations:**

- **Information about limitation of use:**

Employment restrictions concerning juveniles must be observed.

Employment restrictions concerning pregnant and lactating women must be observed.

- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. The application, use and processing of our products are beyond our control and are therefore exclusively your responsibility.

- **Relevant phrases**

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

- **Department issuing SDS:** Product management

- **Contact:** Product management

- **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

PNEC: Predicted No-Effect Concentration (UK REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

ATE: Acute toxicity estimate values

Met. Corr. 1: Corrosive to metals – Category 1

Skin Corr. 1B: Skin corrosion/irritation – Category 1B

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

- *** Data compared to the previous version altered.**