

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 07/27/2021

Reviewed on 07/27/2021

**1 Identification**

- **Product identifier**
- **Trade name:** Iron 1 µg/mL in 2% HCl
- **Article number:** 1-26-2
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
High-Purity Standards  
7221 Investment Drive, North Charleston, SC 29418 United States  
Telephone: +1-843-767-7900  
Fax: +1-843-767-7906  
[highpuritystandards.com](http://highpuritystandards.com)  
Email: [info@highpuritystandards.com](mailto:info@highpuritystandards.com)
- **Information department:** Product safety department
- **Emergency telephone number:**  
INFOTRAC  
Emergency telephone numbers 1-800-535-5053  
Other emergency telephone numbers 1-352-323-3500

**2 Hazard(s) identification**

- **Classification of the substance or mixture**



GHS05 Corrosion

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

Skin Corr. 1A H314 Causes severe skin burns and eye damage.



GHS07

Eye Irrit. 2A H319 Causes serious eye irritation.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS05

- **Signal word** Danger
- **Hazard-determining components of labeling:**  
hydrochloric acid

(Contd. on page 2)

## Safety Data Sheet

acc. to OSHA HCS

Printing date 07/27/2021

Reviewed on 07/27/2021

**Trade name: Iron 1 µg/mL in 2% HCl**

(Contd. of page 1)

· **Hazard statements**

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H319 Causes serious eye irritation.

· **Precautionary statements**

Keep only in original container.

Do not breathe dusts or mists.

Wash thoroughly after handling.

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

If swallowed: Rinse mouth. Do NOT induce vomiting.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

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.

Specific treatment (see on this label).

If eye irritation persists: Get medical advice/attention.

Wash contaminated clothing before reuse.

Absorb spillage to prevent material damage.

Store locked up.

Store in corrosive resistant container with a resistant inner liner.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 3

Fire = 0

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = \*3

Fire = 0

Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

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

· **Dangerous components:**

7647-01-0 hydrochloric acid

2.0%

(Contd. on page 3)

## Safety Data Sheet

acc. to OSHA HCS

Printing date 07/27/2021

Reviewed on 07/27/2021

**Trade name: Iron 1 µg/mL in 2% HCl**

(Contd. of page 2)

**· Chemical identification of the substance/preparation**

7732-18-5	water, distilled, conductivity or of similar purity	97.9999%
7439-89-6	iron	0.0001%

### 4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**  
During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Mount respiratory protective device.  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Use neutralizing agent.  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

(Contd. on page 4)

## Safety Data Sheet

acc. to OSHA HCS

Printing date 07/27/2021

Reviewed on 07/27/2021

**Trade name: Iron 1 µg/mL in 2% HCl**

(Contd. of page 3)

### · Protective Action Criteria for Chemicals

#### · PAC-1:

7647-01-0	hydrochloric acid	1.8 ppm
7439-89-6	iron	3.2 mg/m <sup>3</sup>

#### · PAC-2:

7647-01-0	hydrochloric acid	22 ppm
7439-89-6	iron	35 mg/m <sup>3</sup>

#### · PAC-3:

7647-01-0	hydrochloric acid	100 ppm
7439-89-6	iron	150 mg/m <sup>3</sup>

## 7 Handling and storage

### · Handling:

#### · Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

#### · Information about protection against explosions and fires: Keep respiratory protective device available.

#### · Conditions for safe storage, including any incompatibilities

#### · Storage:

· Requirements to be met by storerooms and receptacles: No special requirements.

· Information about storage in one common storage facility: Not required.

· Further information about storage conditions: Keep receptacle tightly sealed.

· Specific end use(s) No further relevant information available.

## 8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

### · Control parameters

#### · Components with limit values that require monitoring at the workplace:

##### 7647-01-0 hydrochloric acid

PEL Ceiling limit value: 7 mg/m<sup>3</sup>, 5 ppm

REL Ceiling limit value: 7 mg/m<sup>3</sup>, 5 ppm

TLV Ceiling limit value: 2.98 mg/m<sup>3</sup>, 2 ppm

· Additional information: The lists that were valid during the creation were used as basis.

### · Exposure controls

#### · Personal protective equipment:

#### · General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

(Contd. on page 5)

## Safety Data Sheet

acc. to OSHA HCS

Printing date 07/27/2021

Reviewed on 07/27/2021

**Trade name: Iron 1 µg/mL in 2% HCl**

(Contd. of page 4)

*Wash hands before breaks and at the end of work.*

*Avoid contact with the eyes.*

*Avoid contact with the eyes and skin.*

· **Breathing equipment:**

*In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.*

· **Protection of hands:**



*Protective gloves*

*The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.*

*Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.*

*Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation*

· **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.*

· **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.*

· **Eye protection:**



*Tightly sealed goggles*

### 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

<b>Form:</b>	Liquid
<b>Color:</b>	colorless
<b>Odor:</b>	Characteristic
<b>Odor threshold:</b>	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	100 °C (212 °F)

· **Flash point:** Not applicable.

(Contd. on page 6)

## Safety Data Sheet

acc. to OSHA HCS

Printing date 07/27/2021

Reviewed on 07/27/2021

**Trade name:** Iron 1 µg/mL in 2% HCl

(Contd. of page 5)

· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Decomposition temperature:</b>	Not determined.
· <b>Auto igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits:</b>	
Lower:	Not determined.
Upper:	Not determined.
· <b>Vapor pressure at 20 °C (68 °F):</b>	23 hPa (17.3 mm Hg)
· <b>Density at 20 °C (68 °F):</b>	1.00301 g/cm <sup>3</sup> (8.37012 lbs/gal)
· <b>Bulk density:</b>	1,003 kg/m <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Not miscible or difficult to mix.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
Dynamic:	Not determined.
Kinematic:	Not determined.
· <b>Solvent content:</b>	
Water:	98.0 %
VOC content:	0.00 %
	0.0 g/l / 0.00 lb/gal
Solids content:	0.0 %
· <b>Other information</b>	No further relevant information available.

### 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

(Contd. on page 7)

## Safety Data Sheet

acc. to OSHA HCS

Printing date 07/27/2021

Reviewed on 07/27/2021

Trade name: Iron 1 µg/mL in 2% HCl

(Contd. of page 6)

### 11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

7647-01-0 hydrochloric acid

Oral LD50 900 mg/kg (rabbit)

· **Primary irritant effect:**

· **on the skin:** Strong caustic effect on skin and mucous membranes.

· **on the eye:**

Strong caustic effect.

Irritating effect.

· **Sensitization:** No sensitizing effects known.

· **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Corrosive

Irritant

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

7647-01-0 hydrochloric acid

3

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

### 12 Ecological information

· **Toxicity**

· **Aquatic toxicity:** No further relevant information available.

· **Persistence and degradability** No further relevant information available.

· **Behavior in environmental systems:**

· **Bioaccumulative potential** No further relevant information available.

· **Mobility in soil** No further relevant information available.

· **Additional ecological information:**

· **General notes:**

Not hazardous for water.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

(Contd. on page 8)

## Safety Data Sheet

acc. to OSHA HCS

Printing date 07/27/2021

Reviewed on 07/27/2021

**Trade name: Iron 1 µg/mL in 2% HCl**




(Contd. of page 7)

· **Other adverse effects** No further relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- |   |                                 |
|---|---------------------------------|
| · <b>UN-Number</b>  | UNI789                          |
| · <b>DOT, ADR, IMDG, IATA</b>   |                                 |
| · <b>UN proper shipping name</b>  | Hydrochloric acid solution      |
| · <b>DOT</b>  | 1789 HYDROCHLORIC ACID solution |
| · <b>ADR</b>  | HYDROCHLORIC ACID solution      |
| · <b>IMDG, IATA</b>   |                                 |
| · <b>Transport hazard class(es)</b>   |                                 |
| · <b>DOT</b>  |                                 |
|  |                                 |
| · <b>Class</b>  | 8 Corrosive substances          |
| · <b>Label</b>  | 8                               |
| · <b>ADR</b>  |                                 |
|  |                                 |
| · <b>Class</b>  | 8 (C1) Corrosive substances     |
| · <b>Label</b>  | 8                               |
| · <b>IMDG, IATA</b>   |                                 |
|  |                                 |
| · <b>Class</b>  | 8 Corrosive substances          |

(Contd. on page 9)



## Safety Data Sheet

acc. to OSHA HCS

Printing date 07/27/2021

Reviewed on 07/27/2021

**Trade name: Iron 1 µg/mL in 2% HCl**

(Contd. of page 8)

· <b>Label</b>	8
· <b>Packing group</b> · <b>DOT, ADR, IMDG, IATA</b>	III
· <b>Environmental hazards:</b>	Not applicable.
· <b>Special precautions for user</b> · <b>Hazard identification number (Kemler code):</b> · <b>EMS Number:</b> · <b>Segregation groups</b> · <b>Stowage Category</b>	Warning: Corrosive substances 80 F-A,S-B Acids E
· <b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b> · <b>DOT</b> · <b>Quantity limitations</b>	  On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L
· <b>ADR</b> · <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>IMDG</b> · <b>Limited quantities (LQ)</b> · <b>Excepted quantities (EQ)</b>	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>UN "Model Regulation":</b>	UN 1789 HYDROCHLORIC ACID SOLUTION, 8, III

### 15 Regulatory information

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

#### · Section 355 (extremely hazardous substances):

7647-01-0 hydrochloric acid

#### · Section 313 (Specific toxic chemical listings):

7647-01-0 hydrochloric acid

#### · TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

#### · Hazardous Air Pollutants

7647-01-0 hydrochloric acid

(Contd. on page 10)

## Safety Data Sheet

acc. to OSHA HCS

Printing date 07/27/2021

Reviewed on 07/27/2021

**Trade name: Iron 1 µg/mL in 2% HCl**

(Contd. of page 9)

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

7647-01-0 hydrochloric acid

A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS05

· **Signal word** Danger

· **Hazard-determining components of labeling:**

hydrochloric acid

· **Hazard statements**

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H319 Causes serious eye irritation.

· **Precautionary statements**

Keep only in original container.

Do not breathe dusts or mists.

Wash thoroughly after handling.

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

If swallowed: Rinse mouth. Do NOT induce vomiting.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

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.

(Contd. on page 11)

**Safety Data Sheet**  
**acc. to OSHA HCS**

Printing date 07/27/2021

Reviewed on 07/27/2021

**Trade name: Iron 1 µg/mL in 2% HCl**

(Contd. of page 10)

*Specific treatment (see on this label).**If eye irritation persists: Get medical advice/attention.**Wash contaminated clothing before reuse.**Absorb spillage to prevent material damage.**Store locked up.**Store in corrosive resistant container with a resistant inner liner.**Dispose of contents/container in accordance with local/regional/national/international regulations.**· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.***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.*

*· **Department issuing SDS:** Environment protection department.**· **Contact:****High-Purity Standards**Tel: 843-767-7900**Fax: 843-767-7906**· **Date of preparation / last revision** 07/27/2021 / -**· **Abbreviations and acronyms:****ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)**IMDG: International Maritime Code for Dangerous Goods**DOT: US Department of Transportation**IATA: International Air Transport Association**ACGIH: American Conference of Governmental Industrial Hygienists**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)**NFPA: National Fire Protection Association (USA)**HMIS: Hazardous Materials Identification System (USA)**VOC: Volatile Organic Compounds (USA, EU)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**NIOSH: National Institute for Occupational Safety**OSHA: Occupational Safety & Health**TLV: Threshold Limit Value**PEL: Permissible Exposure Limit**REL: Recommended Exposure Limit**Met. Corr. 1: Corrosive to metals – Category 1**Skin Corr. 1A: Skin corrosion/irritation – Category 1A**Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A*