

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/19/2019

Reviewed on 03/19/2019

1 Identification

- **Product identifier**
- **Trade name:** HEALTH-2
- **Article number:** HEALTH-2
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 High-Purity Standards
 P.O. Box 41727
 Charleston, SC 29423
 Telephone: (843) 767-7900
 FAX: (843) 767-7906
- **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**



GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.

Repr. 1A H360-H362 May damage fertility or the unborn child. May cause harm to breast-fed children.



GHS05 Corrosion

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

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

STOT SE 3 H335 May cause respiratory irritation.

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



GHS05



GHS07



GHS08

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

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lead

Hazard statements

- H314 Causes severe skin burns and eye damage.
- H351 Suspected of causing cancer.
- H360-H362 May damage fertility or the unborn child. May cause harm to breast-fed children.
- H335 May cause respiratory irritation.

Precautionary statements

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Do not breathe dusts or mists.
- Avoid contact during pregnancy/while nursing.
- Wash thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Use only outdoors or in a well-ventilated area.
- 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.
- IF exposed or concerned: Get medical advice/attention.
- Specific treatment (see on this label).
- Wash contaminated clothing before reuse.
- Store in a well-ventilated place. Keep container tightly closed.
- Store locked up.
- 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.

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· Dangerous components:		
7647-01-0	hydrochloric acid	10.0%
7439-92-1	lead	0.1%
· Chemical identification of the substance/preparation		
7782-49-2	selenium	0.3%
6156-78-1	Manganese(II) acetate tetrahydrate	0.015%
7487-94-7	mercury dichloride	0.005%
7440-43-9	cadmium (non-pyrophoric)	0.005%
7732-18-5	water, distilled, conductivity or of similar purity	89.575%

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. Then 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:** Do not allow to enter sewers/ surface or ground water.
- **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.

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See Section 13 for disposal information.

· Protective Action Criteria for Chemicals
· PAC-1:

7647-01-0	hydrochloric acid	1.8 ppm
7782-49-2	selenium	0.6 mg/m ³
7439-92-1	lead	0.15 mg/m ³
6156-78-1	Manganese(II) acetate tetrahydrate	13 mg/m ³
7487-94-7	mercury dichloride	0.1 mg/m ³
7440-43-9	cadmium (non-pyrophoric)	0.10 mg/m ³

· PAC-2:

7647-01-0	hydrochloric acid	22 ppm
7782-49-2	selenium	6.6 mg/m ³
7439-92-1	lead	120 mg/m ³
6156-78-1	Manganese(II) acetate tetrahydrate	22 mg/m ³
7487-94-7	mercury dichloride	0.14 mg/m ³
7440-43-9	cadmium (non-pyrophoric)	0.76 mg/m ³

· PAC-3:

7647-01-0	hydrochloric acid	100 ppm
7782-49-2	selenium	40 mg/m ³
7439-92-1	lead	700 mg/m ³
6156-78-1	Manganese(II) acetate tetrahydrate	740 mg/m ³
7487-94-7	mercury dichloride	38 mg/m ³
7440-43-9	cadmium (non-pyrophoric)	4.7 mg/m ³

7 Handling and storage

· Handling:
· Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

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.

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- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

At this time, the remaining constituent has no known exposure limits.

7647-01-0 hydrochloric acid	
PEL	Ceiling limit value: 7 mg/m ³ , 5 ppm
REL	Ceiling limit value: 7 mg/m ³ , 5 ppm
TLV	Ceiling limit value: 2.98 mg/m ³ , 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.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

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

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9 Physical and chemical properties

· Information on basic physical and chemical properties	
· General Information	
· Appearance:	
Form:	Liquid
Color:	Colorless
· Odor:	Characteristic
· Odor threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	100 °C (212 °F)
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Not applicable.
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure at 20 °C (68 °F):	23 hPa (17.3 mm Hg)
· Density:	Not determined.
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with	
Water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	
Not determined.	
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Water:	89.6 %
VOC content:	0.00 %
	0.0 g/l / 0.00 lb/gal
Solids content:	0.4 %
· Other information	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.

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- **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.

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)
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- **Primary irritant effect:**
- **on the skin:** Strong caustic effect on skin and mucous membranes.
- **on the eye:**
Strong caustic effect.
Strong irritant with the danger of severe eye injury.

· **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
7782-49-2	selenium	3
7439-92-1	lead	2B
7487-94-7	mercury dichloride	3
7440-43-9	cadmium (non-pyrophoric)	1

· **NTP (National Toxicology Program)**

7439-92-1	lead	R
7440-43-9	cadmium (non-pyrophoric)	K

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

7440-43-9	cadmium (non-pyrophoric)
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12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.

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- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (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.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **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

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> · UN-Number · DOT, ADR, IMDG, IATA | UN3264 |
| <ul style="list-style-type: none"> · UN proper shipping name · DOT · ADR · IMDG, IATA | Corrosive liquid, acidic, inorganic, n.o.s. (Hydrochloric acid)
3264 Corrosive liquid, acidic, inorganic, n.o.s. (Hydrochloric acid)
CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
(HYDROCHLORIC ACID) |
| <ul style="list-style-type: none"> · Transport hazard class(es) · DOT | <div style="text-align: center;">  </div> |
| <ul style="list-style-type: none"> · Class · Label | 8 Corrosive substances
8 |
| <ul style="list-style-type: none"> · ADR, IMDG, IATA | <div style="text-align: center;">  </div> |
| <ul style="list-style-type: none"> · Class | 8 Corrosive substances |

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· Label	8
· Packing group	
· DOT, ADR, IMDG, IATA	II
· Environmental hazards:	Not applicable.
· Special precautions for user	Warning: Corrosive substances
· Danger code (Kemler):	80
· EMS Number:	F-A,S-B
· Segregation groups	Acids
· Stowage Category	B
· Stowage Code	SW2 Clear of living quarters.
· Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 1 L On cargo aircraft only: 30 L
· ADR	
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROCHLORIC ACID), 8, II

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
7487-94-7	mercury dichloride
· Section 313 (Specific toxic chemical listings):	
7647-01-0	hydrochloric acid
7782-49-2	selenium
7439-92-1	lead
7487-94-7	mercury dichloride
7440-43-9	cadmium (non-pyrophoric)

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· TSCA (Toxic Substances Control Act):

7647-01-0	hydrochloric acid
7782-49-2	selenium
7439-92-1	lead
7487-94-7	mercury dichloride
7440-43-9	cadmium (non-pyrophoric)
7732-18-5	water, distilled, conductivity or of similar purity

· Proposition 65
· Chemicals known to cause cancer:

7439-92-1	lead
7440-43-9	cadmium (non-pyrophoric)

· Chemicals known to cause reproductive toxicity for females:

7439-92-1	lead
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· Chemicals known to cause reproductive toxicity for males:

7439-92-1	lead
7440-43-9	cadmium (non-pyrophoric)

· Chemicals known to cause developmental toxicity:

7439-92-1	lead
7487-94-7	mercury dichloride
7440-43-9	cadmium (non-pyrophoric)

· Carcinogenic categories
· EPA (Environmental Protection Agency) (Substances not listed)

7647-01-0	hydrochloric acid
6156-78-1	Manganese(II) acetate tetrahydrate
7732-18-5	water, distilled, conductivity or of similar purity

· TLV (Threshold Limit Value established by ACGIH)

7647-01-0	hydrochloric acid	A4
7439-92-1	lead	A3
7487-94-7	mercury dichloride	A4
7440-43-9	cadmium (non-pyrophoric)	A2

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

7440-43-9	cadmium (non-pyrophoric)
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· GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms


GHS05



GHS07



GHS08

· Signal word Danger

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· Hazard-determining components of labeling:*hydrochloric acid**lead***· Hazard statements***H314 Causes severe skin burns and eye damage.**H351 Suspected of causing cancer.**H360-H362 May damage fertility or the unborn child. May cause harm to breast-fed children.**H335 May cause respiratory irritation.***· Precautionary statements***Obtain special instructions before use.**Do not handle until all safety precautions have been read and understood.**Do not breathe dusts or mists.**Avoid contact during pregnancy/while nursing.**Wash thoroughly after handling.**Do not eat, drink or smoke when using this product.**Use only outdoors or in a well-ventilated area.**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.**IF exposed or concerned: Get medical advice/attention.**Specific treatment (see on this label).**Wash contaminated clothing before reuse.**Store in a well-ventilated place. Keep container tightly closed.**Store locked up.**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** *03/19/2019 / -***· 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)*

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*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**Skin Corr. 1A: Skin corrosion/irritation – Category 1A**Eye Dam. 1: Serious eye damage/eye irritation – Category 1**Carc. 2: Carcinogenicity – Category 2**Repr. 1A: Reproductive toxicity – Category 1A**STOT SE 3: Specific target organ toxicity (single exposure) – Category 3*

US