

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/13/2024

Reviewed on 05/13/2024

## 1 Identification

- **Product identifier**
- **Trade name:** Hydrazine Hydrate
- **Article number:** H2037
- **CAS Number:**  
7803-57-8
- **EC number:**  
206-114-9
- **Index number:**  
007-008-00-3
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Aqua Solutions, Inc.  
6913 Highway 225  
DEER PARK, TX 77536  
USA  
800-256-2586
- **Information department:**  
Technical Coordinator  
Sherman Nelson [shermann@aquasolutions.org](mailto:shermann@aquasolutions.org)  
Technical Coordinator  
Sherman Nelson [shermann@aquasolutions.org](mailto:shermann@aquasolutions.org)
- **Emergency telephone number:**  
Chemtrec: 800-424-9300  
Canutec: 613-996-6666



## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS06 Skull and crossbones

Acute Toxicity - Oral 3      H301 Toxic if swallowed.

Acute Toxicity - Dermal 3      H311 Toxic in contact with skin.

Acute Toxicity - Inhalation 3      H331 Toxic if inhaled.



GHS08 Health hazard

Carcinogenicity 1A      H350 May cause cancer.



GHS05 Corrosion

Skin Corrosion 1B      H314 Causes severe skin burns and eye damage.



GHS07

Sensitization - Skin 1      H317 May cause an allergic skin reaction.

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Flammable Liquids 4                      H227 Combustible liquid.

· **Label elements**

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

· **Hazard pictograms**



GHS05    GHS06    GHS07    GHS08

· **Signal word** Danger

· **Hazard statements**

Combustible liquid.

Toxic if swallowed, in contact with skin or if inhaled.

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

May cause cancer.

· **Precautionary statements**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Avoid breathing dust/fume/gas/mist/vapors/spray

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing must not be allowed out of the workplace.

Avoid release to the environment.

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

If swallowed: Immediately call a poison center/doctor.

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.

Specific measures (see on this label).

If skin irritation or rash occurs: Get medical advice/attention.

Wash contaminated clothing before reuse.

In case of fire: Use CO<sub>2</sub>, Foam to extinguish.

Collect spillage.

Store in a well-ventilated place. Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

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 = 2

Reactivity = 0

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· **HMIS-ratings (scale 0 - 4)**

|            |    |                |
|------------|----|----------------|
| HEALTH     | *3 | Health = *3    |
| FIRE       | 2  | Fire = 2       |
| REACTIVITY | 0  | Reactivity = 0 |

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**  
CAS: 7803-57-8 Hydrazine Hydrate
- **Identification number(s)**
- **EC number:** 206-114-9
- **Index number:** 007-008-00-3

### 4 First-aid measures

- **Description of first aid measures**
- **General information:**  
Immediately remove any clothing soiled by the product.  
Remove breathing apparatus only after contaminated clothing have been completely removed.  
In case of irregular breathing or respiratory arrest provide artificial respiration.
- **After inhalation:**  
Supply fresh air or oxygen; call for doctor.  
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:**  
Do not induce vomiting; immediately call for medical help.  
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:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

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## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
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 section 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.
- **Protective Action Criteria for Chemicals**
  - PAC-1: 0.16 mg/m<sup>3</sup>
  - PAC-2: 20 mg/m<sup>3</sup>
  - PAC-3: 55 mg/m<sup>3</sup>

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.
- **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 section 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **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 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.

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· **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.

· **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

· **Body protection:** Protective work clothing

## 9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Liquid

Color: Clear

· **Odor:** Ammonia-like

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: -51.7 °C (-61.1 °F)

Boiling point/Boiling range: 120.1 °C (248.2 °F)

· **Flash point:** 74 °C (165.2 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Decomposition temperature:** Not determined.

· **Ignition temperature:** Not determined.

· **Danger of explosion:** Not determined.

· **Explosion limits:**

Lower: Not determined.

Upper: Not determined.

· **Vapor pressure at 25 °C (77 °F):** 7 hPa (5.3 mm Hg)

· **Density at 20 °C (68 °F):** 1.032 g/cm<sup>3</sup> (8.61204 lbs/gal)

· **Relative density** Not determined.

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- |  |                 |
|--|-----------------|
| · Vapor density  | Not determined. |
| · Evaporation rate   | Not determined. |
| · Solubility in / Miscibility with Water:                  | Not determined. |
| · Partition coefficient (n-octanol/water): Not determined. |                 |
| · Viscosity:   |                 |
| Dynamic:   | Not determined. |
| Kinematic:   | Not determined. |
| · Other information  |                 |
| 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.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

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

|            |         |                 |
|------------|---------|-----------------|
| Oral       | LD50    | 100 mg/kg (ATE) |
| Dermal     | LD50    | 300 mg/kg (ATE) |
| Inhalative | LC50/4h | 3 mg/l (ATE)    |

- **Primary irritant effect:**
- **on the skin:** Caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**  
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)** Substance is not listed.
- **NTP (National Toxicology Program)** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not 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.

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- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
*Water hazard class 3 (Assessment by list): extremely hazardous for water  
 Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
 Must not reach bodies of water or drainage ditch undiluted or unneutralized.  
 Danger to drinking water if even extremely small quantities leak into the ground.*
- **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

- **UN-Number**
- **DOT, IMDG, IATA** UN2030
- **UN proper shipping name**
- **DOT** *Hydrazine aqueous solution*
- **IMDG, IATA** **HYDRAZINE AQUEOUS SOLUTION**
- **Transport hazard class(es)**
- **DOT**
- 
- **Class** 8 Corrosive substances
- **Label** 8, 3, 6.1
- **IMDG**
- 
- **Class** 8 Corrosive substances
- **Label** 8/3/6.1

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## · IATA



· Class 8 Corrosive substances  
 · Label 8 (3, 6.1)

· Packing group II  
 · DOT, IMDG, IATA

· Environmental hazards: Environmentally hazardous substance, liquid  
 · Marine pollutant: No  
 Symbol (fish and tree)

· Special precautions for user Warning: Corrosive substances  
 · Hazard identification number (Kemler code): 886  
 · EMS Number: F-A,S-B  
 · Segregation groups (SGG18) Alkalis  
 · Stowage Category D  
 · Stowage Code SW2 Clear of living quarters.  
 · Segregation Code SG35 Stow "separated from" SGG1-acids

· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

· UN "Model Regulation": UN 2030 HYDRAZINE AQUEOUS SOLUTION, 8 (3+6.1), II

## 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara
- Section 355 (extremely hazardous substances): Substance is not listed.
- Section 313 (Specific toxic chemical listings): Substance is not listed.
- TSCA (Toxic Substances Control Act):
- Hazardous Air Pollutants Substance is not listed.
- Proposition 65
- Chemicals known to cause cancer: Substance is not listed.
- Chemicals known to cause reproductive toxicity for females: Substance is not listed.
- Chemicals known to cause reproductive toxicity for males: Substance is not listed.
- Chemicals known to cause developmental toxicity: Substance is not listed.
- Carcinogenic categories
- EPA (Environmental Protection Agency) Substance is not listed.
- TLV (Threshold Limit Value) Substance is not listed.
- NIOSH-Ca (National Institute for Occupational Safety and Health) Substance is not listed.
- GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).
- Hazard pictograms



GHS05   GHS06   GHS07   GHS08

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**Trade name: Hydrazine Hydrate**

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- **Signal word** *Danger*

- **Hazard statements**

*Combustible liquid.*

*Toxic if swallowed, in contact with skin or if inhaled.*

*Causes severe skin burns and eye damage.*

*May cause an allergic skin reaction.*

*May cause cancer.*

- **Precautionary statements**

*Obtain special instructions before use.*

*Do not handle until all safety precautions have been read and understood.*

*Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*

*Avoid breathing dust/fume/gas/mist/vapors/spray*

*Wash thoroughly after handling.*

*Do not eat, drink or smoke when using this product.*

*Use only outdoors or in a well-ventilated area.*

*Contaminated work clothing must not be allowed out of the workplace.*

*Avoid release to the environment.*

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

*If swallowed: Immediately call a poison center/doctor.*

*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.*

*Specific measures (see on this label).*

*If skin irritation or rash occurs: Get medical advice/attention.*

*Wash contaminated clothing before reuse.*

*In case of fire: Use CO<sub>2</sub>, Foam to extinguish.*

*Collect spillage.*

*Store in a well-ventilated place. Keep container tightly closed.*

*Store in a well-ventilated place. Keep cool.*

*Store locked up.*

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

- **National regulations:**

- **Additional classification according to Decree on Hazardous Materials:**

*Carcinogenic hazardous material group I (extremely dangerous).*

*Carcinogenic hazardous material group II (very dangerous).*

*Carcinogenic hazardous material group III (dangerous).*

- **Information about limitation of use:**

*Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.*

- **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:**

*Date of Preparation / Last Revision:*

- **Date of preparation / last revision**

*Revision 1.2, 05/13/2024: Reviewed SDS for accuracy. MH/STN*

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**Trade name: Hydrazine Hydrate**

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Creation date for SDS 10-21-2014. STN  
05/13/2024

**· Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
NFPA: National Fire Protection Association (USA)  
HMIS: Hazardous Materials Identification System (USA)  
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  
Flammable Liquids 4: Flammable liquids – Category 4  
Acute Toxicity - Oral 3: Acute toxicity – Category 3  
Skin Corrosion 1B: Skin corrosion/irritation – Category 1B  
Sensitization - Skin 1: Skin sensitisation – Category 1  
Carcinogenicity 1A: Carcinogenicity – Category 1A

· **\* Data compared to the previous version altered.**

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