

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/25/2014

Reviewed on 03/12/2014

## 1 Identification

- **Product identifier**
- **Trade name:** Iron Metal Filings, Fine
- **Article number:** R3449
- **CAS Number:**  
7439-89-6
- **EC number:**  
231-096-4
- **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:**  
Product safety department  
Technical Coordinator  
Sherman Nelson sherman@aquasolutions.org
- **Emergency telephone number:**  
Chemtrec: 800-424-9300  
Canutec: 613-996-6666



## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
The substance is not classified according to the Globally Harmonized System (GHS).
- **Label elements**
- **GHS label elements** Not Applicable
- **Hazard pictograms** Not Applicable
- **Signal word** Not Applicable
- **Hazard statements** Not Applicable
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**



- **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**  
7439-89-6 Iron Metal

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USA

4006018-SDS  
IRON FILINGS, FINE

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- Identification number(s)
- EC number: 231-096-4

## 4 First-aid measures

- **Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult 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:**  
CO2, 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:** No special measures required.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:** Pick up mechanically.
- **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.

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **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:** None.
- **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:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.

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- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
The usual precautionary measures for handling chemicals should be followed.
- **Breathing equipment:** Not required.
- **Protection of hands:**  
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:** Not required.

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
  - Form:** Powder, ribbon, chips or granules
  - Color:** Silver or grey
  - Odor:** Odorless
  - Odour threshold:** Not determined.
- **pH-value:** Not applicable.
- **Change in condition**
  - Melting point/Melting range:** 1535 °C °C (2795 °C °F)
  - Boiling point/Boiling range:** 2750 °C °C (4982 °C °F)
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Product is not flammable.
- **Ignition temperature:**
- **Decomposition temperature:** Not determined.
- **Auto igniting:** Not determined.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Explosion limits:**
  - Lower:** Not determined.
  - Upper:** Not determined.
- **Vapor pressure:** Not applicable.
- **Density at 20 °C (68 °F):** 7.87 g/cm<sup>3</sup> (65.675 lbs/gal)
- **Bulk density at 20 °C (68 °F):** 2900 kg/m<sup>3</sup>
- **Relative density** Not determined.
- **Vapour density** Not applicable.
- **Evaporation rate** Not applicable.
- **Solubility in / Miscibility with Water:** Insoluble.

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- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**

- **Dynamic:** Not applicable.

- **Kinematic:** Not applicable.

- **Other information**

- No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**

- **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:**

- **Primary irritant effect:**

- **on the skin:** No irritant effect.

- **on the eye:** No irritating effect.

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

- **Additional toxicological information:**

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

The substance is not subject to classification.

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)** Substance is not listed.

- **NTP (National Toxicology Program)** 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.

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

- **Additional ecological information:**

- **General notes:** Generally not hazardous for water

- **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:** Smaller quantities can be disposed of with household waste.

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- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

- |  |                 |
|--|-----------------|
| · <b>UN-Number</b>   |                 |
| · <b>DOT</b>   | Not regulated   |
| · <b>UN proper shipping name</b>   |                 |
| · <b>IMDG</b>  | Not Regulated   |
| · <b>Transport hazard class(es)</b>  |                 |
| · <b>DOT</b>   | Not applicable  |
| · <b>Packing group</b>   |                 |
| · <b>DOT</b>   | Not applicable  |
| · <b>Environmental hazards:</b>  |                 |
| · <b>Marine pollutant:</b>   | No              |
| · <b>Special precautions for user</b>  | Not applicable. |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| · <b>Transport/Additional information:</b>                                       |                 |
| · <b>DOT</b>   |                 |
| · <b>Remarks:</b>  | Not regulated   |
| · <b>UN "Model Regulation":</b>  | Not Regulated   |

## 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):** Substance is 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 established by ACGIH)** Substance is not listed.
- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.
- **GHS label elements** Not Applicable
- **Hazard pictograms** Not Applicable
- **Signal word** Not Applicable
- **Hazard statements** Not Applicable
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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## 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 MSDS:** Environment protection department.

· **Contact:** Mr. Nelson

· **Date of preparation / last revision**

Creation date for SDS 03-12-14

03/25/2014 / -

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

ACGIH: American Conference of Governmental Industrial Hygienists

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)

USA

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acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/14/2014

## 1 Identification

- **Product identifier**
- **Trade name:** Potassium Hydroxide Solution
- **Article number:** R310825
- **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:**  
Product safety department  
Technical Coordinator  
Sherman Nelson sherman@aquasolutions.org
- **Emergency telephone number:**  
Chemtrec: 800-424-9300  
Canutec: 613-996-6666



## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS05 Corrosion

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

- **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:**  
Potassium Hydroxide
- **Hazard statements**  
Causes severe skin burns and eye damage.
- **Precautionary statements**  
If medical advice is needed, have product container or label at hand.  
Keep out of reach of children.  
Read label before use.  
Do not breathe dust/fume/gas/mist/vapours/spray.  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Specific treatment (see on this label).  
Store locked up.  
Dispose of contents/container in accordance with local/regional/national/international regulations.

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R310825-SDS  
POTASSIUM HYDROXIDE SOLUTION

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Trade name: Potassium Hydroxide Solution

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· **Classification system:**· **NFPA ratings (scale 0 - 4)**· **HMIS-ratings (scale 0 - 4)**· **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:**

1310-58-3	Potassium Hydroxide	5.611%
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· **Table of Nonhazardous Ingredients**

7732-18-5	Water, Deionized, Distilled	94.389%
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## 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:**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:** No special measures required.

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Trade name: Potassium Hydroxide Solution

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## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Dilute with plenty of water.  
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.  
See Section 13 for disposal information.

## 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:** No special measures required.
- **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**

· <b>Components with limit values that require monitoring at the workplace:</b>	
<b>1310-58-3 Potassium Hydroxide</b>	
REL	Ceiling limit value: 2 mg/m <sup>3</sup>
TLV	Ceiling limit value: 2 mg/m <sup>3</sup>

- **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.  
Avoid contact with the eyes and skin.

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Trade name: Potassium Hydroxide Solution

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· **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:**

Form:	Liquid
Color:	Colorless
Odor:	Odorless
Odour 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.

· **Ignition temperature:**

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.

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Trade name: Potassium Hydroxide Solution

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<b>Upper:</b>	Not determined.
· <b>Vapor pressure at 20 °C (68 °F):</b>	23 hPa (17 mm Hg)
· <b>Density at 20 °C (68 °F):</b>	1.05835 g/cm <sup>3</sup> (8.832 lbs/gal)
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Fully miscible.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	94.4 %
<b>Solids content:</b>	5.6 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**
- **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:**

**1310-58-3 Potassium Hydroxide**

Oral	LD50	273 mg/kg (rat)
------	------	-----------------

- **Primary irritant effect:**
- **on the skin:** Strong caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:  
Corrosive  
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

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Trade name: Potassium Hydroxide Solution

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- **Carcinogenic categories**

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

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

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:**

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.

- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- **UN-Number**

- **DOT, IMDG, IATA**

UN1814

- **UN proper shipping name**

- **DOT**

- **IMDG, IATA**

Potassium hydroxide, solution

POTASSIUM HYDROXIDE SOLUTION

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· **Transport hazard class(es)**· **DOT**· **Class**

8 Corrosive substances.

· **Label**

8

· **IMDG, IATA**· **Class**

8 Corrosive substances.

· **Label**

8

· **Packing group**· **DOT, IMDG, IATA**

II

· **Environmental hazards:**· **Marine pollutant:**

No

· **Special precautions for user**

Warning: Corrosive substances

· **Danger code (Kemler):**

80

· **EMS Number:**

F-A,S-B

· **Segregation groups**

Alkalis

· **Transport in bulk according to Annex II of  
MARPOL73/78 and the IBC Code**

Not applicable.

· **UN "Model Regulation":**

UN1814, Potassium hydroxide, solution, 8, II

## 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**· **Sara**· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

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

None of the ingredients is listed.

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

All ingredients are listed.

· **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.

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· **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)**

None of the ingredients is listed.

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

None of the ingredients is listed.

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

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:**

Potassium Hydroxide

· **Hazard statements**

Causes severe skin burns and eye damage.

· **Precautionary statements**

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

Do not breathe dust/fume/gas/mist/vapours/spray.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Specific treatment (see on this label).

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 MSDS:** Environment protection department.

· **Contact:** Mr. Nelson

· **Date of preparation / last revision**

Creation date for SDS 03-14-2014. STN

03/21/2014 / -

· **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

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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)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A

USA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/13/2014

## 1 Identification

- **Product identifier**
- **Trade name:** Limewater  
(Saturated Calcium Hydroxide Soln)
- **Article number:** R310828
- **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:**  
Product safety department  
Technical Coordinator  
Sherman Nelson sherman@aquasolutions.org
- **Emergency telephone number:**  
Chemtrec: 800-424-9300  
Canutec: 613-996-6666



## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
The product is not classified according to the Globally Harmonized System (GHS).

- **Label elements**
- **GHS label elements** Not Applicable
- **Hazard pictograms** Not Applicable
- **Signal word** Not Applicable
- **Hazard statements** Not Applicable
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**



- **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:** Not Applicable

(Contd. on page 2)

USA

R310828-SDS  
LIMEWATER



# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/13/2014

**Trade name: Limewater**  
(Saturated Calcium Hydroxide Soln)

(Contd. of page 1)

· <b>Table of Nonhazardous Ingredients</b>		
1305-62-0	Calcium Hydroxide	0.4%
7732-18-5	Water, Deionized, Distilled	99.6%

## 4 First-aid measures

- **Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult 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:** No special measures required.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **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).
- **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.

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **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:** None.

(Contd. on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/13/2014

**Trade name:** *Limewater*  
(Saturated Calcium Hydroxide Soln)

(Contd. of page 2)

· **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:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

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

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

· **Breathing equipment:** Not required.

· **Protection of hands:**

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:** Goggles recommended during refilling.

## 9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form:

Liquid

Color:

Clear to slightly turbid

· **Odor:**

Light

· **Odour 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.

· **Ignition temperature:**

Decomposition temperature:

Not determined.

(Contd. on page 4)

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/13/2014

**Trade name: Limewater**  
**(Saturated Calcium Hydroxide Soln)**

(Contd. of page 3)

· <b>Auto igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits:</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
· <b>Vapor pressure at 20 °C (68 °F):</b>	23 hPa (17 mm Hg)
· <b>Density at 20 °C (68 °F):</b>	1.00496 g/cm <sup>3</sup> (8.386 lbs/gal)
· <b>Relative density</b>	Not determined.
· <b>Vapour 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>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	99.6 %
<b>Solids content:</b>	0.4 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**
- **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:**
  - **Primary irritant effect:**
  - **on the skin:** No irritant effect.
  - **on the eye:** No irritating effect.
  - **Sensitization:** No sensitizing effects known.
  - **Additional toxicological information:**
- The product is not subject to classification according to internally approved calculation methods for preparations:
- When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

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USA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/13/2014

**Trade name: Limewater**  
(Saturated Calcium Hydroxide Soln)

(Contd. of page 4)

· **Carcinogenic categories**

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

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

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:** Generally not hazardous for water

· **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:** Smaller quantities can be disposed of with household waste.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

· **UN-Number**

· **DOT, ADN, IMDG, IATA** Not Applicable

· **UN proper shipping name**

· **DOT, ADN, IATA** Not Applicable

· **IMDG** Not Regulated

· **Transport hazard class(es)**

· **DOT, ADN, IMDG, IATA**

· **Class** Not Applicable

· **Packing group**

· **DOT, IMDG, IATA** Not Applicable

· **Environmental hazards:**

· **Marine pollutant:** No

· **Special precautions for user**

Not applicable.

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/13/2014

**Trade name:** *Limewater*  
(Saturated Calcium Hydroxide Soln)

(Contd. of page 5)

- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** *Not applicable.*
- **UN "Model Regulation":** *Not Regulated*  
-

## 15 Regulatory information

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

- **Section 355 (extremely hazardous substances):**

*None of the ingredients is listed.*

- **Section 313 (Specific toxic chemical listings):**

*None of the ingredients is listed.*

- **TSCA (Toxic Substances Control Act):**

*All ingredients are listed.*

- **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)**

*None of the ingredients is listed.*

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

*None of the ingredients is listed.*

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

*None of the ingredients is listed.*

- **GHS label elements** *Not Applicable*

- **Hazard pictograms** *Not Applicable*

- **Signal word** *Not Applicable*

- **Hazard statements** *Not Applicable*

- **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.*

(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/13/2014

**Trade name: Limewater**  
**(Saturated Calcium Hydroxide Soln)**

(Contd. of page 6)

· **Department issuing MSDS:** Environment protection department.

· **Contact:** Mr. Nelson

· **Date of preparation / last revision**

Creation date for SDS 03-21-2014 STN

03/21/2014 / -

· **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)

USA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/25/2014

Reviewed on 02/05/2014

## 1 Identification

- **Product identifier**
- **Trade name:** Magnesium, Laboratory Grade Turnings
- **Article number:** R310834
- **CAS Number:**  
7439-95-4
- **EC number:**  
231-104-6
- **Index number:**  
012-001-00-3
- **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:**  
Product safety department  
Technical Coordinator  
Sherman Nelson sherman@aquasolutions.org  
Not applicable
- **Emergency telephone number:**  
Chemtrec: 800-424-9300  
Canutec: 613-996-6666



## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Pyr. Sol. 1 H250 Catches fire spontaneously if exposed to air.

Water-react. 1 H260 In contact with water releases flammable gases which may ignite spontaneously.

- **Label elements**

- **GHS label elements**

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

- **Hazard pictograms**



GHS02

- **Signal word** Danger

- **Hazard statements**

Catches fire spontaneously if exposed to air.

In contact with water releases flammable gases which may ignite spontaneously.

- **Precautionary statements**

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

Do not allow contact with air.

Handle under inert gas. Protect from moisture.

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

Store contents under inert gas.

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

(Contd. on page 2)

USA

# R310834-SDS

# MAGNESIUM

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/25/2014

Reviewed on 02/05/2014

Trade name: Magnesium, Laboratory Grade Turnings

(Contd. of page 1)

- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0  
Fire = 4  
Reactivity = 2

The substance demonstrates unusual reactivity with water.

- **HMIS-ratings (scale 0 - 4)**



Health = 0  
Fire = 4  
Reactivity = 2

- **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**  
7439-95-4 Magnesium
- **Identification number(s)**
- **EC number:** 231-104-6
- **Index number:** 012-001-00-3

## 4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult 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.
- **For safety reasons unsuitable extinguishing agents:** Water
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** No special measures required.

(Contd. on page 3)



# Safety Data Sheet

## acc. to OSHA HCS

Printing date 03/25/2014

Reviewed on 02/05/2014

Trade name: **Magnesium, Laboratory Grade Turnings**

(Contd. of page 2)

- **Methods and material for containment and cleaning up:**  
*Ensure adequate ventilation.*  
*Do not flush with water or aqueous cleansing agents*
- **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.*

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** *No special precautions are necessary if used correctly.*
- **Information about protection against explosions and fires:** *Keep ignition sources away - Do not smoke.*
- **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.*  
*Store in cool, dry conditions in well sealed receptacles.*
- **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:** *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:** *Wash hands before breaks and at the end of work.*
- **Breathing equipment:** *Not required.*
- **Protection of hands:**  
*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:** *Not required.*

### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**  

<b>Form:</b>	Turnings
<b>Color:</b>	White to Grey

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/25/2014

Reviewed on 02/05/2014

Trade name: Magnesium, Laboratory Grade Turnings

(Contd. of page 3)

· <b>Odor:</b>	Odorless
· <b>Odour threshold:</b>	Not determined.
· <b>pH-value:</b>	Not applicable.
· <b>Change in condition</b>	
<b>Melting point/Melting range:</b>	649.5 °C (1201 °F)
<b>Boiling point/Boiling range:</b>	1090 °C (1994 °F)
· <b>Flash point:</b>	500 °C (932 °F)
· <b>Flammability (solid, gaseous):</b>	Contact with water liberates extremely flammable gases.
· <b>Ignition temperature:</b>	
<b>Decomposition temperature:</b>	Not determined.
· <b>Auto igniting:</b>	Spontaneously flammable in air.
· <b>Danger of explosion:</b>	Not determined.
· <b>Explosion limits:</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
· <b>Vapor pressure at 20 °C (68 °F):</b>	0 hPa
· <b>Density at 20 °C (68 °F):</b>	1.738 g/cm <sup>3</sup> (14.504 lbs/gal)
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not applicable.
· <b>Evaporation rate</b>	Not applicable.
· <b>Solubility in / Miscibility with</b>	
<b>Water:</b>	Insoluble.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not applicable.
<b>Kinematic:</b>	Not applicable.
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** Contact with water releases flammable gases.
- **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:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.

(Contd. on page 5)

USA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/25/2014

Reviewed on 02/05/2014

Trade name: Magnesium, Laboratory Grade Turnings

(Contd. of page 4)

- **Additional toxicological information:**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** 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.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water
- **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

- |   |   |
|---|---|
| · <b>UN-Number</b>  | UN1869  |
| · <b>DOT, IMDG, IATA</b>  |   |
| · <b>UN proper shipping name</b>  | Magnesium   |
| · <b>DOT</b>  | MAGNESIUM   |
| · <b>IMDG, IATA</b>   |   |
| · <b>Transport hazard class(es)</b>   |   |
| · <b>DOT</b>  |   |
|  |   |
| · <b>Class</b>  | 4.1 Flammable solids, self-reactive substances and solid desensitised explosives. |
| · <b>Label</b>  | 4.1   |
| · <b>IMDG, IATA</b>   |   |
|  |   |
| · <b>Class</b>  | 4.1 Flammable solids, self-reactive substances and solid desensitised explosives. |

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/25/2014

Reviewed on 02/05/2014

Trade name: Magnesium, Laboratory Grade Turnings

(Contd. of page 5)

· <b>Label</b>	4.1
· <b>Packing group</b> · <b>DOT, IMDG, IATA</b>	III
· <b>Environmental hazards:</b> · <b>Marine pollutant:</b>	No
· <b>Special precautions for user</b> · <b>Danger code (Kemler):</b> · <b>EMS Number:</b>	Warning: Flammable solids, self-reactive substances and solid desensitised explosives 40 F-G,S-G
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>UN "Model Regulation":</b>	UN1869, Magnesium, 4.1, III

## 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):** Substance is 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 established by ACGIH)** Substance is not listed.
- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.
- **GHS label elements**  
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02

- **Signal word** Danger
- **Hazard statements**  
Catches fire spontaneously if exposed to air.  
In contact with water releases flammable gases which may ignite spontaneously.
- **Precautionary statements**  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Do not allow contact with air.  
Handle under inert gas. Protect from moisture.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Store contents under inert gas.  
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

-USA-

(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/25/2014

Reviewed on 02/05/2014

**Trade name: Magnesium, Laboratory Grade Turnings**

(Contd. of page 6)

## 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 MSDS:** Environment protection department.

· **Contact:** Mr. Nelson

· **Date of preparation / last revision**

Creation date for SDS 03-21-2014 STN

03/25/2014 / -

· **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

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

Pyr. Sol. 1: Pyrophoric Solids, Hazard Category 1

Water-react. 1: Substances and Mixtures which, in contact with water, emit flammable gases, Hazard Category 1

USA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/25/2014

Reviewed on 03/21/2014

## 1 Identification

- **Product identifier**
- **Trade name:** Calcium Carbonate, Chips
- **Article number:** R310836
- **CAS Number:**  
471-34-1
- **EC number:**  
207-439-9
- **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:**  
Product safety department  
Technical Coordinator  
Sherman Nelson sherman@aquasolutions.org
- **Emergency telephone number:**  
Chemtrec: 800-424-9300  
Canutec: 613-996-6666



## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
The substance is not classified according to the Globally Harmonized System (GHS).
- **Label elements**
- **GHS label elements** Not Applicable
- **Hazard pictograms** Not Applicable
- **Signal word** Not Applicable
- **Hazard statements** Not Applicable
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**



- **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**  
471-34-1 Calcium Carbonate

(Contd. on page 2)

USA

R310836-SDS  
CALCIUM CARBONATE

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 03/25/2014

Reviewed on 03/21/2014

Trade name: Calcium Carbonate, Chips

(Contd. of page 1)

- **Identification number(s)**
- **EC number:** 207-439-9

### 4 First-aid measures

- **Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult 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:** No special measures required.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:** Pick up mechanically.
- **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.

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **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:** None.
- **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.

(Contd. on page 3)

USA



# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/25/2014

Reviewed on 03/21/2014

Trade name: Calcium Carbonate, Chips

(Contd. of page 2)

## · Control parameters

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

#### 471-34-1 Calcium Carbonate

PEL	Long-term value: 15* 5** mg/m <sup>3</sup> *total dust **respirable fraction
REL	Long-term value: 10* 5** mg/m <sup>3</sup> *total dust **respirable fraction
TLV	TLV withdrawn

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

## · Exposure controls

### · Personal protective equipment:

#### · General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

#### · Breathing equipment: Not required.

#### · Protection of hands:

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: Not required.

## 9 Physical and chemical properties

### · Information on basic physical and chemical properties

#### · General Information

##### · Appearance:

Form:	Powder, Granules or Chips
Color:	White
Odor:	Odorless
Odour threshold:	Not determined.

· pH-value (50 g/l) at 20 °C (68 °F): 9.5

##### · Change in condition

Melting point/Melting range:	Information not °C
Boiling point/Boiling range:	Information not °C

· Flash point: Not applicable.

· Flammability (solid, gaseous): Product is not flammable.

##### · Ignition temperature:

Decomposition temperature: Not determined.

· Auto igniting: Not determined.

· Danger of explosion: Product does not present an explosion hazard.

##### · Explosion limits:

Lower: Not determined.

(Contd. on page 4)



# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/25/2014

Reviewed on 03/21/2014

Trade name: Calcium Carbonate, Chips

(Contd. of page 3)

<b>Upper:</b>	Not determined.
· <b>Vapor pressure at 20 °C (68 °F):</b>	0 hPa
· <b>Density at 20 °C (68 °F):</b>	2.7 g/cm <sup>3</sup> (22.532 lbs/gal)
· <b>Bulk density at 20 °C (68 °F):</b>	200-300 kg/m <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not applicable.
· <b>Evaporation rate</b>	Not applicable.
· <b>Solubility in / Miscibility with Water at 20 °C (68 °F):</b>	0.013 g/l
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not applicable.
<b>Kinematic:</b>	Not applicable.
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**
- **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	6450 mg/kg (rat)
------	------	------------------

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.  
The substance is not subject to classification.
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** 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.
- **Mobility in soil** No further relevant information available.

(Contd. on page 5)

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 03/25/2014

Reviewed on 03/21/2014

Trade name: Calcium Carbonate, Chips

(Contd. of page 4)

- **Additional ecological information:**
- **General notes:** Generally not hazardous for water
- **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:** Smaller quantities can be disposed of with household waste.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- |  |                 |
|--|-----------------|
| · <b>UN-Number</b>   |                 |
| · <b>DOT</b>   | Not regulated   |
| · <b>UN proper shipping name</b>   |                 |
| · <b>IMDG</b>  | Not Regulated   |
| · <b>Transport hazard class(es)</b>  |                 |
| · <b>DOT</b>   | Not applicable  |
| · <b>Packing group</b>   |                 |
| · <b>DOT</b>   | Not applicable  |
| · <b>Environmental hazards:</b>  |                 |
| · <b>Marine pollutant:</b>   | No              |
| · <b>Special precautions for user</b>  | Not applicable. |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| · <b>UN "Model Regulation":</b>  | Not Regulated   |

### 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):** Substance is 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 established by ACGIH)** Substance is not listed.
- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.
- **GHS label elements** Not Applicable
- **Hazard pictograms** Not Applicable

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# Safety Data Sheet

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**Trade name: Calcium Carbonate, Chips**

(Contd. of page 5)

- **Signal word** Not Applicable
- **Hazard statements** Not Applicable
- **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 MSDS:** Environment protection department.
- **Contact:** Mr. Nelson
- **Date of preparation / last revision**

Creation date for SDS 03-21-2014 STN

03/25/2014 / -

- **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

ACGIH: American Conference of Governmental Industrial Hygienists

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

USA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/21/2014

## 1 Identification

- **Product identifier**
- **Trade name:** Phenolphthalein Solution
- **Article number:** R310845
- **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:**  
Product safety department  
Technical Coordinator  
Sherman Nelson sherman@aquasolutions.org
- **Emergency telephone number:**  
Chemtrec: 800-424-9300  
Canutec: 613-996-6666



## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Carc. 1B H350 May cause cancer.

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT SE 2 H371 May cause damage to organs.

- **Label elements**

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

- **Hazard pictograms**



GHS02



GHS08

- **Signal word** Danger

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

Methanol (Methyl Alcohol)

- **Hazard statements**

Highly flammable liquid and vapor.

May cause cancer.

Suspected of damaging fertility or the unborn child.

May cause damage to organs.

(Contd. on page 2)

USA

R310845-SDS  
PHENOLPHTHALEIN SOLUTION

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/21/2014

Trade name: Phenolphthalein Solution

(Contd. of page 1)

## Precautionary statements

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

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

Use explosion-proof electrical/ventilating/lighting/equipment.

Do not breathe dust/fume/gas/mist/vapours/spray.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

Store locked up.

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

## Classification system:

### NFPA ratings (scale 0 - 4)



Health = 2

Fire = 3

Reactivity = 0

### HMIS-ratings (scale 0 - 4)



Health = \*2

Fire = 3

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:

64-17-5	Ethyl Alcohol, Absolute 200 Proof	89.43%
67-56-1	Methanol (Methyl Alcohol)	4.968%
67-63-0	Isopropyl Alcohol (2-Propanol)	4.968%
77-09-8	Phenolphthalein	0.634%

### SVHC

77-09-8	Phenolphthalein
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## 4 First-aid measures

### Description of first aid measures

### General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

### After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

### After skin contact: Generally the product does not irritate the skin.

After eye contact: Rinse opened eye for several minutes under running water.

(Contd. on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/21/2014

Trade name: Phenolphthalein Solution

(Contd. of page 2)

- **After swallowing:** 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.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Dilute with plenty of water.  
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).  
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.

## 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 ignition sources away - Do not smoke.  
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

USA

(Contd. on page 4)

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/21/2014

Trade name: Phenolphthalein Solution

(Contd. of page 3)

### 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:**

#### 64-17-5 Ethyl Alcohol, Absolute 200 Proof

PEL Long-term value: 1900 mg/m<sup>3</sup>, 1000 ppm

REL Long-term value: 1900 mg/m<sup>3</sup>, 1000 ppm

TLV Short-term value: 1880 mg/m<sup>3</sup>, 1000 ppm

#### 67-56-1 Methanol (Methyl Alcohol)

PEL Long-term value: 260 mg/m<sup>3</sup>, 200 ppm

REL Short-term value: 325 mg/m<sup>3</sup>, 250 ppm  
Long-term value: 260 mg/m<sup>3</sup>, 200 ppm  
Skin

TLV Short-term value: 328 mg/m<sup>3</sup>, 250 ppm  
Long-term value: 262 mg/m<sup>3</sup>, 200 ppm  
Skin; BEI

#### 67-63-0 Isopropyl Alcohol (2-Propanol)

PEL Long-term value: 980 mg/m<sup>3</sup>, 400 ppm

REL Short-term value: 1225 mg/m<sup>3</sup>, 500 ppm  
Long-term value: 980 mg/m<sup>3</sup>, 400 ppm

TLV Short-term value: 984 mg/m<sup>3</sup>, 400 ppm  
Long-term value: 492 mg/m<sup>3</sup>, 200 ppm  
BEI

· **Ingredients with biological limit values:**

#### 67-56-1 Methanol (Methyl Alcohol)

BEI 15 mg/L

Medium: urine

Time: end of shift

Parameter: Methanol (background, nonspecific)

#### 67-63-0 Isopropyl Alcohol (2-Propanol)

BEI 40 mg/L

Medium: urine

Time: end of shift at end of workweek

Parameter: Acetone (background, nonspecific)

· **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.

Wash hands before breaks and at the end of work.

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.

(Contd. on page 5)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/21/2014

Trade name: Phenolphthalein Solution

(Contd. of page 4)

## · 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:

Form:	Liquid
Color:	Colorless
Odor:	Alcohol
Odour threshold:	Not determined.

· pH-value: Not determined.

#### · Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	78 °C (172 °F)

· Flash point: 13 °C (55 °F)

· Flammability (solid, gaseous): Not applicable.

· Ignition temperature: 425 °C (797 °F)

· Decomposition temperature: Not determined.

· Auto igniting: Product is not selfigniting.

· Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

#### · Explosion limits:

Lower:	3.5 Vol %
Upper:	15.0 Vol %

· Vapor pressure at 20 °C (68 °F): 59 hPa (44 mm Hg)

(Contd. on page 6)

USA



# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/21/2014

Trade name: Phenolphthalein Solution

(Contd. of page 5)

- |   |  |
|---|--|
| · <b>Density at 20 °C (68 °F):</b>                | 0.789 g/cm <sup>3</sup> (6.584 lbs/gal)    |
| · <b>Relative density</b>                         | Not determined.                            |
| · <b>Vapour density</b>                           | Not determined.                            |
| · <b>Evaporation rate</b>                         | Not determined.                            |
| · <b>Solubility in / Miscibility with Water:</b>  | Fully miscible.                            |
| · <b>Partition coefficient (n-octanol/water):</b> | Not determined.                            |
| · <b>Viscosity:</b>                               |  |
| <b>Dynamic:</b>                                   | Not determined.                            |
| <b>Kinematic:</b>                                 | Not determined.                            |
| · <b>Solvent content:</b>                         |  |
| <b>Organic solvents:</b>                          | 99.4 %                                     |
| <b>VOC content:</b>                               | 99.4 %                                     |
|   | 784.0 g/l / 6.54 lb/gl                     |
| · <b>Solids content:</b>                          | 0.6 %                                      |
| · <b>Other information</b>                        | No further relevant information available. |

## 10 Stability and reactivity

- **Reactivity**
- **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:**

### 67-56-1 Methanol (Methyl Alcohol)

Oral	LD50	5628 mg/kg (rat)
Dermal	LD50	15800 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Harmful
- **Carcinogenic categories**

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

64-17-5	Ethyl Alcohol, Absolute 200 Proof	I
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(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS

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Reviewed on 03/21/2014

Trade name: Phenolphthalein Solution

(Contd. of page 6)

67-63-0	Isopropyl Alcohol (2-Propanol)	3
77-09-8	Phenolphthalein	2B
· <b>NTP (National Toxicology Program)</b>		
77-09-8	Phenolphthalein	R

## 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:**  
 Water hazard class 2 (Self-assessment): hazardous for water  
 Do not allow product to reach ground water, water course or sewage system.  
 Danger to drinking water if even 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.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

· <b>UN-Number</b>	UN1993
· <b>DOT, IMDG, IATA</b>	
· <b>UN proper shipping name</b>	Flammable liquids, n.o.s. (Ethanol, Methanol)
· <b>DOT</b>	FLAMMABLE LIQUID, N.O.S. (ETHANOL (ETHYL ALCOHOL), METHANOL)
· <b>IMDG</b>	
· <b>IATA</b>	FLAMMABLE LIQUID, N.O.S. (ETHANOL, METHANOL)

(Contd. on page 8)

USA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/21/2014

Trade name: Phenolphthalein Solution

(Contd. of page 7)

· **Transport hazard class(es)**· **DOT**· **Class**

3 Flammable liquids.

· **Label**

3

· **IMDG, IATA**· **Class**

3 Flammable liquids.

· **Label**

3

· **Packing group**· **DOT, IMDG, IATA**

II

· **Environmental hazards:**· **Marine pollutant:**

No

· **Special precautions for user**

Warning: Flammable liquids

· **Danger code (Kemler):**

336

· **EMS Number:**

F-E,S-D

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **UN "Model Regulation":**

UN1993, Flammable liquids, n.o.s. (Ethanol (Ethyl alcohol), Methanol), 3, II

## 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**· **Sara**· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

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

67-56-1 Methanol (Methyl Alcohol)

67-63-0 Isopropyl Alcohol (2-Propanol)

77-09-8 Phenolphthalein

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

All ingredients are listed.

· **Proposition 65**· **Chemicals known to cause cancer:**

77-09-8 Phenolphthalein

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

None of the ingredients is listed.

(Contd. on page 9)

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/21/2014

Trade name: Phenolphthalein Solution

(Contd. of page 8)

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

None of the ingredients is listed.

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

64-17-5 Ethyl Alcohol, Absolute 200 Proof

67-56-1 Methanol (Methyl Alcohol)

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

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

64-17-5 Ethyl Alcohol, Absolute 200 Proof

A3

67-63-0 Isopropyl Alcohol (2-Propanol)

A4

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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

· **Hazard pictograms**



GHS02 GHS08

· **Signal word** Danger

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

Methanol (Methyl Alcohol)

· **Hazard statements**

Highly flammable liquid and vapor.

May cause cancer.

Suspected of damaging fertility or the unborn child.

May cause damage to organs.

· **Precautionary statements**

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

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

Use explosion-proof electrical/ventilating/lighting/equipment.

Do not breathe dust/fume/gas/mist/vapours/spray.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

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 MSDS:** Environment protection department.

(Contd. on page 10)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/21/2014

**Trade name: Phenolphthalein Solution**

(Contd. of page 9)

- **Contact:** Mr. Nelson

- **Date of preparation / last revision**

Creation date for SDS 03-21-2014 STN

03/21/2014 / -

- **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

Flam. Liq. 2: Flammable liquids, Hazard Category 2

Carc. 1B: Carcinogenicity, Hazard Category 1B

Repr. 2: Reproductive toxicity, Hazard Category 2

STOT SE 2: Specific target organ toxicity - Single exposure, Hazard Category 2

USA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 02/25/2014

## 1 Identification

- **Product identifier**
- **Trade name:** Sodium Hydroxide  
1.0 Normal Solution N.I.S.T. Traceable
- **Article number:** R310847
- **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 sherman@aquasolutions.org  
Product safety department
- **Emergency telephone number:**  
Chemtrec: 800-424-9300  
Canutec: 613-996-6666



## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS05 Corrosion

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

- **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:**  
Sodium Hydroxide
- **Hazard statements**  
Causes severe skin burns and eye damage.
- **Precautionary statements**  
If medical advice is needed, have product container or label at hand.  
Keep out of reach of children.  
Read label before use.  
Do not breathe dust/fume/gas/mist/vapours/spray.  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continue rinsing.  
Specific treatment (see on this label).  
Store locked up.  
Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)

USA

R310847-SDS  
SODIUM HYDROXIDE SOLUTION

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 02/25/2014

**Trade name:** Sodium Hydroxide  
**1.0 Normal Solution N.I.S.T. Traceable**

(Contd. of page 1)

- **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:**

1310-73-2	Sodium Hydroxide	4.0%
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### · **Table of Nonhazardous Ingredients**

7732-18-5	Water, Deionized, Distilled	96.0%
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## 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:**  
 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:** No special measures required.

USA

(Contd. on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 02/25/2014

**Trade name: Sodium Hydroxide**  
**1.0 Normal Solution N.I.S.T. Traceable**

(Contd. of page 2)

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
 Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
 Dilute with plenty of water.  
 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.  
 See Section 13 for disposal information.

## 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:** No special measures required.
- **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:**

### 1310-73-2 Sodium Hydroxide

PEL	Long-term value: 2 mg/m <sup>3</sup>
REL	Ceiling limit value: 2 mg/m <sup>3</sup>
TLV	Ceiling limit value: 2 mg/m <sup>3</sup>

- **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.  
 Avoid contact with the eyes and skin.

(Contd. on page 4)



# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 02/25/2014

**Trade name: Sodium Hydroxide**  
**1.0 Normal Solution N.I.S.T. Traceable**

(Contd. of page 3)

· **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>	Odorless
<b>Odour threshold:</b>	Not determined.

· **pH-value at 20 °C (68 °F):** >12

· **Change in condition**

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

· **Flash point:** Not applicable.

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

· **Ignition temperature:**

**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.

(Contd. on page 5)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 02/25/2014

**Trade name: Sodium Hydroxide**  
**1.0 Normal Solution N.I.S.T. Traceable**

(Contd. of page 4)

<b>Upper:</b>	Not determined.
· <b>Vapor pressure at 20 °C (68 °F):</b>	23 hPa (17 mm Hg)
· <b>Density at 20 °C (68 °F):</b>	1.0452 g/cm <sup>3</sup> (8.722 lbs/gal)
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Fully miscible.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	96.0 %
<b>Solids content:</b>	4.0 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**
- **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:**

**1310-73-2 Sodium Hydroxide**

Oral LD50 2000 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** Caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Corrosive  
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

(Contd. on page 6)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 02/25/2014

**Trade name: Sodium Hydroxide**  
**1.0 Normal Solution N.I.S.T. Traceable**

(Contd. of page 5)

· **Carcinogenic categories**

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

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

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:**

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.

Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

· **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.

· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

· **UN-Number**

· **DOT, IMDG, IATA**

UN1824

· **UN proper shipping name**

· **DOT**

· **IMDG, IATA**

Sodium hydroxide solution

SODIUM HYDROXIDE SOLUTION

(Contd. on page 7)

USA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 02/25/2014

**Trade name:** Sodium Hydroxide  
1.0 Normal Solution N.I.S.T. Traceable

(Contd. of page 6)

· **Transport hazard class(es)**· **DOT**· **Class** 8 Corrosive substances.· **Label** 8· **IMDG, IATA**· **Class** 8 Corrosive substances.· **Label** 8· **Packing group**· **DOT, IMDG, IATA** II· **Environmental hazards:**· **Marine pollutant:** No· **Special precautions for user**

Warning: Corrosive substances

· **Danger code (Kemler):** 80· **EMS Number:** F-A,S-B· **Segregation groups** Alkalis· **Transport in bulk according to Annex II of  
MARPOL73/78 and the IBC Code**

Not applicable.

· **UN "Model Regulation":**

UN1824, Sodium hydroxide solution, 8, II

## 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**· **Sara**· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

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

None of the ingredients is listed.

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

All ingredients are listed.

· **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.

(Contd. on page 8)

USA

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 02/25/2014

**Trade name: Sodium Hydroxide**  
**1.0 Normal Solution N.I.S.T. Traceable**

(Contd. of page 7)

· **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)**

None of the ingredients is listed.

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

None of the ingredients is listed.

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

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:**

Sodium Hydroxide

· **Hazard statements**

Causes severe skin burns and eye damage.

· **Precautionary statements**

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

Do not breathe dust/fume/gas/mist/vapours/spray.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Specific treatment (see on this label).

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 MSDS:** Environment protection department.

· **Contact:** Mr. Nelson

· **Date of preparation / last revision**

Creation date for SDS 03-21-2014 STN

03/21/2014 / -

(Contd. on page 9)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 02/25/2014

**Trade name: Sodium Hydroxide**  
**1.0 Normal Solution N.I.S.T. Traceable**

(Contd. of page 8)

**· 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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A

— USA —

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/25/2014

Reviewed on 03/21/2014

## 1 Identification

- **Product identifier**
- **Trade name:** Hydrochloric Acid Solution
- **Article number:** R310846
- **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:**  
Product safety department  
Technical Coordinator  
Sherman Nelson sherman@aquasolutions.org
- **Emergency telephone number:**  
Chemtrec: 800-424-9300  
Canutec: 613-996-6666



## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and 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

- **Signal word** Danger

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

Hydrochloric Acid

- **Hazard statements**

Causes severe skin burns and eye damage.

May cause respiratory irritation.

- **Precautionary statements**

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

Do not breathe dust/fume/gas/mist/vapours/spray.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

(Contd. on page 2)

USA

R310846-SDS  
HYDROCHLORIC ACID SOLUTION

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/25/2014

Reviewed on 03/21/2014

**Trade name: Hydrochloric Acid  
Solution**

(Contd. of page 1)

Specific treatment (see on this label).

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.

· **Dangerous components:**

7647-01-0	Hydrochloric Acid	33.3%
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· **Table of Nonhazardous Ingredients**

7732-18-5	Water, Deionized, Distilled	66.7%
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## 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:**

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:** No special measures required.

USA

(Contd. on page 3)



# Safety Data Sheet

## acc. to OSHA HCS

Printing date 03/25/2014

Reviewed on 03/21/2014

**Trade name: Hydrochloric Acid  
Solution**

(Contd. of page 2)

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Dilute with plenty of water.  
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.  
See Section 13 for disposal information.

### 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:** No special measures required.
- **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.  
Wash hands before breaks and at the end of work.  
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.

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/25/2014

Reviewed on 03/21/2014

**Trade name: Hydrochloric Acid  
Solution**

(Contd. of page 3)

· **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:**

Form:	Liquid
Color:	Colorless
Odor:	Odorless
Odour threshold:	Not determined.

· **pH-value at 20 °C (68 °F):** < 2

· **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.

· **Ignition temperature:**

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 mm Hg)

· **Density at 20 °C (68 °F):** 1.04995 g/cm<sup>3</sup> (8.762 lbs/gal)

· **Relative density** Not determined.

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# Safety Data Sheet

acc. to OSHA HCS

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**Trade name: Hydrochloric Acid  
Solution**

(Contd. of page 4)

· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Fully miscible.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	66.7 %
<b>VOC content:</b>	33.3 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**
- **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)

- **Primary irritant effect:**
- **on the skin:** Caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic 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.

USA

(Contd. on page 6)

# Safety Data Sheet

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**Trade name: Hydrochloric Acid  
Solution**

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## 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:**  
 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.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- |   |                             |
|---|-----------------------------|
| · <b>UN-Number</b>  | UN1789                      |
| · <b>DOT, IMDG, IATA</b>  |                             |
| · <b>UN proper shipping name</b>  | Hydrochloric acid, solution |
| · <b>DOT</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>IMDG, IATA</b>   |                             |
|  |                             |
| · <b>Class</b>  | 8 Corrosive substances.     |
| · <b>Label</b>  | 8                           |

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# Safety Data Sheet

## acc. to OSHA HCS

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**Trade name: Hydrochloric Acid  
Solution**

(Contd. of page 6)

· <b>Packing group</b>	
· <b>DOT, IMDG, IATA</b>	II
· <b>Environmental hazards:</b>	
· <b>Marine pollutant:</b>	No
· <b>Special precautions for user</b>	Warning: Corrosive substances
· <b>Danger code (Kemler):</b>	80
· <b>EMS Number:</b>	F-A,S-B
· <b>Segregation groups</b>	Acids
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>UN "Model Regulation":</b>	UN1789, Hydrochloric acid, solution, 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
-----------	-------------------

- **Section 313 (Specific toxic chemical listings):**

7647-01-0	Hydrochloric Acid
-----------	-------------------

- **TSCA (Toxic Substances Control Act):**

All ingredients are listed.
-----------------------------

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

None of the ingredients is listed.
------------------------------------

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

None of the ingredients is listed.
------------------------------------

- **GHS label elements**

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

(Contd. on page 8)

USA

# Safety Data Sheet

## acc. to OSHA HCS

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**Trade name: Hydrochloric Acid  
Solution**

(Contd. of page 7)

· **Hazard pictograms**



GHS05 GHS07

· **Signal word** *Danger*

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

*Hydrochloric Acid*

· **Hazard statements**

*Causes severe skin burns and eye damage.*

*May cause respiratory irritation.*

· **Precautionary statements**

*If medical advice is needed, have product container or label at hand.*

*Keep out of reach of children.*

*Read label before use.*

*Do not breathe dust/fume/gas/mist/vapours/spray.*

*IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.*

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

*Specific treatment (see on this label).*

*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 MSDS:** Environment protection department.

· **Contact:** Mr. Nelson

· **Date of preparation / last revision**

*Creation date for SDS 03-21-2014 STN*

*03/25/2014 / -*

· **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*

*Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B*

*STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3*

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/21/2014

## 1 Identification

- **Product identifier**
- **Trade name:** Sulfuric Acid  
Solution
- **Article number:** R311403
- **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:**  
Product safety department  
Technical Coordinator  
Sherman Nelson sherman@aquasolutions.org
- **Emergency telephone number:**  
Chemtrec: 800-424-9300  
Canutec: 613-996-6666



## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS07

Skin Irrit. 2 H315 Causes skin irritation.  
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**



GHS07

- **Signal word** Warning
- **Hazard statements**  
Causes skin irritation.  
Causes serious eye irritation.
- **Precautionary statements**  
If medical advice is needed, have product container or label at hand.  
Keep out of reach of children.  
Read label before use.  
Wear protective gloves/protective clothing/eye protection/face protection.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continue rinsing.  
Specific treatment (see on this label).  
Take off contaminated clothing and wash before reuse.  
If skin irritation occurs: Get medical advice/attention.  
If eye irritation persists: Get medical advice/attention.

(Contd. on page 2)

USA

R311403-SDS  
SULFURIC ACID SOLUTION

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/21/2014

**Trade name:** Sulfuric Acid  
Solution

(Contd. of page 1)

- **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:**

7664-93-9	Sulfuric Acid 96 - 98%	9.19%
-----------	------------------------	-------

### · **Table of Nonhazardous Ingredients**

7732-18-5	Water, Deionized, Distilled	90.81%
-----------	-----------------------------	--------

## 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:**  
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:** No special measures required.

USA

(Contd. on page 3)



# Safety Data Sheet

acc. to OSHA HCS

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Reviewed on 03/21/2014

**Trade name: Sulfuric Acid  
Solution**

(Contd. of page 2)

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Dilute with plenty of water.  
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.  
See Section 13 for disposal information.

## 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:** No special measures required.
- **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:**

**7664-93-9 Sulfuric Acid 96 - 98%**

PEL	Long-term value: 1 mg/m <sup>3</sup>
REL	Long-term value: 1 mg/m <sup>3</sup>
TLV	Long-term value: 0.2* mg/m <sup>3</sup> *as thoracic fraction

- **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.

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/21/2014

**Trade name:** Sulfuric Acid  
Solution

(Contd. of page 3)

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>	Odorless
<b>Odour 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.

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

· **Ignition temperature:**

**Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

(Contd. on page 5)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/21/2014

**Trade name: Sulfuric Acid  
Solution**

(Contd. of page 4)

· <b>Explosion limits:</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
· <b>Vapor pressure at 20 °C (68 °F):</b>	23 hPa (17 mm Hg)
· <b>Density at 20 °C (68 °F):</b>	1.04375 g/cm <sup>3</sup> (8.71 lbs/gal)
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with     Water:</b>	Fully miscible.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	90.8 %
<b>VOC content:</b>	9.2 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**
- **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:**
- **Primary irritant effect:**
- **on the skin:** Caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Corrosive  
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

(Contd. on page 6)

USA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

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**Trade name: Sulfuric Acid  
Solution**

(Contd. of page 5)

· **Carcinogenic categories**

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

7664-93-9 Sulfuric Acid 96 - 98%

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· **NTP (National Toxicology Program)**

7664-93-9 Sulfuric Acid 96 - 98%

K

## 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:**

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.

· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

· **UN-Number**

· **DOT, IMDG, IATA**

UN1760

· **UN proper shipping name**

· **DOT**

· **IMDG, IATA**

Corrosive liquids, n.o.s. (Sulfuric Acid)

CORROSIVE LIQUID, N.O.S. (Sulfuric Acid)

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USA

# Safety Data Sheet

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**Trade name:** Sulfuric Acid  
Solution

(Contd. of page 6)

· **Transport hazard class(es)**

· **DOT**



· **Class** 8 Corrosive substances.

· **Label** 8

· **IMDG, IATA**



· **Class** 8 Corrosive substances.

· **Label** 8

· **Packing group**

· **DOT, IMDG, IATA** II

· **Environmental hazards:**

· **Marine pollutant:** No

· **Special precautions for user**

Warning: Corrosive substances

· **Danger code (Kemler):** 80

· **EMS Number:** F-A,S-B

· **Segregation groups** Acids

· **Transport in bulk according to Annex II of  
MARPOL73/78 and the IBC Code**

Not applicable.

· **UN "Model Regulation":**

UN1760, Corrosive liquids, n.o.s. (Sulfuric Acid), 8, II

## 15 Regulatory information

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

· **Sara**

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

7664-93-9 Sulfuric Acid 96 - 98%

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

7664-93-9 Sulfuric Acid 96 - 98%

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

All ingredients are listed.

· **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.

(Contd. on page 8)

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/21/2014

**Trade name:** Sulfuric Acid  
Solution

(Contd. of page 7)

· **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)**

7664-93-9 Sulfuric Acid 96 - 98%

A2

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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

· **Hazard pictograms**



GHS07

· **Signal word** Warning

· **Hazard statements**

Causes skin irritation.

Causes serious eye irritation.

· **Precautionary statements**

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

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

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Specific treatment (see on this label).

Take off contaminated clothing and wash before reuse.

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

· **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 MSDS:** Environment protection department.

· **Contact:** Mr. Nelson

· **Date of preparation / last revision**

Creation date for SDS 03-21-2014 STN  
03/21/2014 / -

(Contd. on page 9)

USA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/21/2014

Reviewed on 03/21/2014

**Trade name: Sulfuric Acid  
Solution**

(Contd. of page 8)

**· 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)

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

USA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/20/2014

Reviewed on 03/20/2014

## 1 Identification

- **Product identifier**
- **Trade name:** Acetic Acid Solution
- **Article number:** R311645
- **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:**  
Product safety department  
Technical Coordinator  
Sherman Nelson sherman@aquasolutions.org
- **Emergency telephone number:**  
Chemtrec: 800-424-9300  
Canutec: 613-996-6666



## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS05 Corrosion

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

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Corrosive

Causes severe burns.

Flammable.

- **Information concerning particular hazards for human and environment:**

The product has to be labeled due to the calculation procedure of international guidelines.

- **Classification system:**

The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

- **Label elements**

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

- **Hazard pictograms**



GHS02 GHS05

- **Signal word** Danger

(Contd. on page 2)

USA  
R311645-SDS  
ACETIC ACID SOLUTION



# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/20/2014

Reviewed on 03/20/2014

Trade name: Acetic Acid Solution

(Contd. of page 1)

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

Acetic Acid

· **Hazard statements**

Flammable liquid and vapour.

Causes severe skin burns and eye damage.

· **Precautionary statements**

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

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

Use explosion-proof electrical/ventilating/lighting/equipment.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Store locked up.

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

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 4

Fire = 2

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 4

Fire = 2

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:**

64-19-7	Acetic Acid	94.34%
---------	-------------	--------

· **Table of Nonhazardous Ingredients**

7732-18-5	Water, Deionized, Distilled	5.66%
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## 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.

(Contd. on page 3)

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 03/20/2014

Reviewed on 03/20/2014

Trade name: Acetic Acid Solution

(Contd. of page 2)

- **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:** No special measures required.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Dilute with plenty of water.  
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.  
See Section 13 for disposal information.

## 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 ignition sources away - Do not smoke.  
Protect against electrostatic charges.
- **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.

(Contd. on page 4)

USA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/20/2014

Reviewed on 03/20/2014

Trade name: Acetic Acid Solution

(Contd. of page 3)

- Control parameters

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

**64-19-7 Acetic Acid**

PEL Long-term value: 25 mg/m<sup>3</sup>, 10 ppm

REL Short-term value: 37 mg/m<sup>3</sup>, 15 ppm

Long-term value: 25 mg/m<sup>3</sup>, 10 ppm

TLV Short-term value: 37 mg/m<sup>3</sup>, 15 ppm

Long-term value: 25 mg/m<sup>3</sup>, 10 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.

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:

Form: Liquid

Color: Colorless

Odor: Strong Vinegar

(Contd. on page 5)

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 03/20/2014

Reviewed on 03/20/2014

Trade name: Acetic Acid Solution

(Contd. of page 4)

· <b>Odour threshold:</b>	Not determined.
· <b>pH-value:</b>	Not determined.
· <b>Change in condition</b>	
<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	100 °C (212 °F)
· <b>Flash point:</b>	40 °C (104 °F)
· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Ignition temperature:</b>	485 °C (905 °F)
· <b>Decomposition temperature:</b>	Not determined.
· <b>Auto igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· <b>Explosion limits:</b>	
<b>Lower:</b>	4.0 Vol %
<b>Upper:</b>	17.0 Vol %
· <b>Vapor pressure at 20 °C (68 °F):</b>	16 hPa (12 mm Hg)
· <b>Density at 20 °C (68 °F):</b>	1.04717 g/cm <sup>3</sup> (8.739 lbs/gal)
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Fully miscible.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	94.3 %
<b>Water:</b>	5.7 %
<b>VOC content:</b>	94.3 %
	987.9 g/l / 8.24 lb/gl
· <b>Other information</b>	No further relevant information available.

### 10 Stability and reactivity

- **Reactivity**
- **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.

USA

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# Safety Data Sheet

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Reviewed on 03/20/2014

Trade name: Acetic Acid Solution

(Contd. of page 5)

## 11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**

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

### 64-19-7 Acetic Acid

Oral	LD50	3310 mg/kg (rat)
Dermal	LD50	1060 mg/kg (rabbit)

- **Primary irritant effect:**

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

- **on the eye:** Strong caustic effect.

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

- **Additional toxicological information:**

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

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)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

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:**

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.

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/20/2014



Reviewed on 03/20/2014

Trade name: Acetic Acid Solution

(Contd. of page 6)

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

## 14 Transport information

- |   |   |
|---|---|
| · <b>UN-Number</b>  | UN2789                                  |
| · <b>DOT, IMDG, IATA</b>  |   |
| · <b>UN proper shipping name</b>  | Acetic acid solution                    |
| · <b>DOT</b>  | ACETIC 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+3                                     |
| · <b>IMDG, IATA</b>   |   |
|  |   |
| · <b>Class</b>  | 8 Corrosive substances.                 |
| · <b>Label</b>  | 8+3                                     |
| · <b>Packing group</b>  | II                                      |
| · <b>DOT, IMDG, IATA</b>  |   |
| · <b>Environmental hazards:</b>   |   |
| · <b>Marine pollutant:</b>  | No                                      |
| · <b>Special precautions for user</b>   | Warning: Corrosive substances           |
| · <b>Danger code (Kemler):</b>  | 83                                      |
| · <b>EMS Number:</b>  | F-E,S-C                                 |
| · <b>Segregation groups</b>   | Acids                                   |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>    | Not applicable.                         |
| · <b>UN "Model Regulation":</b>   | UN2789, Acetic acid solution, 8 (3), II |

## 15 Regulatory information

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

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

None of the ingredients is listed.

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/20/2014

Reviewed on 03/20/2014

Trade name: Acetic Acid Solution

(Contd. of page 7)

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

None of the ingredients is listed.

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

All ingredients are listed.

· **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)**

None of the ingredients is listed.

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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

· **Hazard pictograms**



GHS02 GHS05

· **Signal word** Danger

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

Acetic Acid

· **Hazard statements**

Flammable liquid and vapour.

Causes severe skin burns and eye damage.

· **Precautionary statements**

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

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

Use explosion-proof electrical/ventilating/lighting/equipment.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Store locked up.

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

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/20/2014

Reviewed on 03/20/2014

**Trade name: Acetic Acid Solution**

(Contd. of page 8)

· **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 MSDS:** Environment protection department.

· **Contact:** Mr. Nelson

· **Date of preparation / last revision**

Creation date for SDS 03-21-2014 STN

03/20/2014 / -

· **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

Flam. Liq. 3: Flammable liquids, Hazard Category 3

Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A

USA



The Platt Bros. & Co.  
P. O. Box 1030 (2670 S. Main St.)  
Waterbury, CT 06721  
(203) 753-4194

PBC-6M  
DATE: December 4, 1985  
Rev. Feb. 7, 1994

### **MATERIAL SAFETY DATA SHEET**

PRODUCT NAME: Zinc base alloys in rods, bars, strips, coils, tube and scrap.

CHEMICAL FAMILY: Zinc Alloy

USE OF PRODUCT: Article Fabrication

Product includes the following Zinc Alloys: 296, 300, 302, 308

#### **SECTION I – CHEMICAL COMPOSITION**

Alloys may contain any or all of the chemical constituents listed below:

	<u>CASE NO</u>	<u>RANGE (%)</u>	<u>OSHA (PEL)</u> <u>(mg/m<sup>3</sup>)</u>	<u>ACGIH (TLV)</u> <u>(mg/m<sup>3</sup>)</u>
Zinc	7440-66-6	98 – 99.99	5.0 Fume 10.0 Dust	5.0 Fume 10.0 Dust
Cadmium	7440-43-9	0 - .007	0.1 Fume 0.2 Dust	0.05 Fume & Dust
Copper	7440-50-8	0 - .800	0.1 Fume 1.0 Dust	0.2 Fume 1.0 Dust
Iron	7439-89-6	0 - .013	10.0 Dust & Fume	5.0 Fume
Lead	7439-92-1	0 - .006	50.0 µg/m <sup>3</sup>	0.15

#### **SECTION II -- PHYSICAL DATA**

Melting Point:	788 °F	Specific Gravity: (H <sub>2</sub> O=1)	7.14
Boiling Point:	1665 °F	Vapor Pressure:	N.A.

The product is a bluish white solid at room temperature, and exhibits no odor. This product is insoluble in water.

#### **SECTION III – STORAGE, FIRE & REACTIVITY**

Flash Point: N.A.      Auto Ignition: N.A.      Flammability Limits: N.A.

There is no unusual fire and explosion hazard with this alloy. Never use water as an extinguishing agent around molten metal. Water will react violently with any molten metal. Use self-contained breathing apparatus for protection against degradation products and fire fighting techniques or agents applicable to surrounding materials. Small chips, fine turnings and dust may ignite readily. Do not use halogenated extinguishing agents on small chips or fines. Dust clouds may be explosive.

This alloy is stable, non-hazardous solid at room temperature.

Material may react with strong acids or alkaline materials.

Material does not present a significant health hazard under normal handling and storage.

#### **SECTION IV – HEALTH HAZARD DATA**

Under normal handling conditions the solid alloy presents no significant health hazards. Processing of the alloy by dust or fume producing operations (grinding, buffing, sawing, forging, cutting, welding, etc.) may result in the potential for exposure to airborne metal particulates or fume. The exposure levels in SECTION I are relevant to fumes or dusts.

**R311214-SDS**  
**ZINC STRIPS**

## EFFECTS OF OVEREXPOSURE

Acute exposure to Zinc dust or fume may cause irritation to the eyes, nose or throat; leave a metallic taste in the mouth; result in metal fume fever; or produce flu-like symptoms.

Cadmium: Loss of smell, ulceration of the nose, shortness of breath (emphysema), kidney damage, and mild anemia, also reported to cause an increased incident of cancer of the prostate in men.

Copper: No chronic debilitating symptoms indicated.

Iron: Siderosis

Lead: Anemia, urinary dysfunction, metallic taste in mouth, weakness, constipation, nausea, nervous disorder.

Zinc: Chromosomal anomalies in leukocytes reported. Arthritic, lameness and inflammation of the gastrointestinal tract reported from animal studies.

## SECTION V – FIRST AID

Ingestion: Ingestion of significant amounts of Zinc alloy are unlikely. Seek medical help if large quantities of product are ingested.

Inhalation: Remove from exposure to dust or fume if present. Seek medical help if required.

Skin Contact: Flush thoroughly with water.

Eye Contact: Flush with water for at least 15 minutes. Seek medical help if required.

## SECTION VI – SPILL PROCEDURES

Product is a non-hazardous solid. No special precautions are required for spills of bulk material. Scrap metal can be reclaimed for reuse. Follow Federal, State and local regulations regarding disposal.

## SECTION VII – SPECIAL PROTECTION INFORMATION

Typically no special protection is required during use of the product beyond that required for the process operation being employed. Where dust or fume levels are greater than those specified in SECTION I, NIOSH approved respiratory protection should be used. Use local exhaust ventilation for dust/fume. Use approved goggles for eye protection.

## SECTION VIII – SPECIAL PRECAUTIONS AND COMMENTS

Wet material should never be charged into a molten bath.

Eye protection should be used when cutting, grinding, machining or buffing product.

Eye protection should also be used with any other process that generates dust, fumes or chips. Dark glasses should be worn when metallizing.

Wash hands thoroughly after use, especially before eating.

## SECTION IX – ENVIRONMENTAL/SAFETY REGULATIONS

SECTION 313 (Title III Superfund Amendment and Reauthorization Act of 1986 and 40CFR part 372).

This product contains the following chemical(s) subject to the reporting requirements of SECTION 313. Zinc, CAS Number 7440-66-6, no more than 100% by weight. Copper, CAS No. 7440-50-8, no more than 1% by weight.

*The information in this Material Safety Data Sheet was obtained from sources, which we believe are reliable. However, the information is provided without any representation or warranty, expressed or implied regarding the accuracy or correctness.*

*The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.*

The Platt Bros. & Co.  
P. O. Box 1030 (2670 S. Main St.)  
Waterbury, CT 06721  
(203) 753-4194

PBC-6M  
DATE: December 4, 1985  
Rev. Feb. 7, 1994

## **MATERIAL SAFETY DATA SHEET**

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USE OF PRODUCT: Article Fabrication

Product includes the following Zinc Alloys: 296, 300, 302, 308

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	<u>CASE NO</u>	<u>RANGE (%)</u>	<u>OSHA (PEL)</u> <u>(mg/m<sup>3</sup>)</u>	<u>ACGIH (TLV)</u> <u>(mg/m<sup>3</sup>)</u>
Zinc	7440-66-6	98 – 99.99	5.0 Fume 10.0 Dust	5.0 Fume 10.0 Dust
Cadmium	7440-43-9	0 - .007	0.1 Fume 0.2 Dust	0.05 Fume & Dust
Copper	7440-50-8	0 - .800	0.1 Fume 1.0 Dust	0.2 Fume 1.0 Dust
Iron	7439-89-6	0 - .013	10.0 Dust & Fume	5.0 Fume
Lead	7439-92-1	0 - .006	50.0 µg/m <sup>3</sup>	0.15

### **SECTION II -- PHYSICAL DATA**

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Boiling Point:	1665 °F	Vapor Pressure:	N.A.

The product is a bluish white solid at room temperature, and exhibits no odor. This product is insoluble in water.

### **SECTION III – STORAGE, FIRE & REACTIVITY**

Flash Point: N.A.      Auto Ignition: N.A.      Flammability Limits: N.A.

There is no unusual fire and explosion hazard with this alloy. Never use water as an extinguishing agent around molten metal. Water will react violently with any molten metal. Use self-contained breathing apparatus for protection against degradation products and fire fighting techniques or agents applicable to surrounding materials. Small chips, fine turnings and dust may ignite readily. Do not use halogenated extinguishing agents on small chips or fines. Dust clouds may be explosive.

This alloy is stable, non-hazardous solid at room temperature.

Material may react with strong acids or alkaline materials.

Material does not present a significant health hazard under normal handling and storage.

### **SECTION IV – HEALTH HAZARD DATA**

Under normal handling conditions the solid alloy presents no significant health hazards. Processing of the alloy by dust or fume producing operations (grinding, buffing, sawing, forging, cutting, welding, etc.) may result in the potential for exposure to airborne metal particulates or fume. The exposure levels in SECTION I are relevant to fumes or dusts.

**R311214-SDS**  
**ZINC STRIPS**

## EFFECTS OF OVEREXPOSURE

Acute exposure to Zinc dust or fume may cause irritation to the eyes, nose or throat; leave a metallic taste in the mouth; result in metal fume fever; or produce flu-like symptoms.

Cadmium: Loss of smell, ulceration of the nose, shortness of breath (emphysema), kidney damage, and mild anemia, also reported to cause an increased incident of cancer of the prostate in men.

Copper: No chronic debilitating symptoms indicated.

Iron: Siderosis

Lead: Anemia, urinary dysfunction, metallic taste in mouth, weakness, constipation, nausea, nervous disorder.

Zinc: Chromosomal anomalies in leukocytes reported. Arthritic, lameness and inflammation of the gastrointestinal tract reported from animal studies.

## SECTION V – FIRST AID

Ingestion: Ingestion of significant amounts of Zinc alloy are unlikely. Seek medical help if large quantities of product are ingested.

Inhalation: Remove from exposure to dust or fume if present. Seek medical help if required.

Skin Contact: Flush thoroughly with water.

Eye Contact: Flush with water for at least 15 minutes. Seek medical help if required.

## SECTION VI – SPILL PROCEDURES

Product is a non-hazardous solid. No special precautions are required for spills of bulk material. Scrap metal can be reclaimed for reuse. Follow Federal, State and local regulations regarding disposal.

## SECTION VII – SPECIAL PROTECTION INFORMATION

Typically no special protection is required during use of the product beyond that required for the process operation being employed. Where dust or fume levels are greater than those specified in SECTION I, NIOSH approved respiratory protection should be used. Use local exhaust ventilation for dust/fume. Use approved goggles for eye protection.

## SECTION VIII – SPECIAL PRECAUTIONS AND COMMENTS

Wet material should never be charged into a molten bath.

Eye protection should be used when cutting, grinding, machining or buffing product.

Eye protection should also be used with any other process that generates dust, fumes or chips. Dark glasses should be worn when metallizing.

Wash hands thoroughly after use, especially before eating.

## SECTION IX – ENVIRONMENTAL/SAFETY REGULATIONS

SECTION 313 (Title III Superfund Amendment and Reauthorization Act of 1986 and 40CFR part 372).

This product contains the following chemical(s) subject to the reporting requirements of SECTION 313. Zinc, CAS Number 7440-66-6, no more than 100% by weight. Copper, CAS No. 7440-50-8, no more than 1% by weight.

*The information in this Material Safety Data Sheet was obtained from sources, which we believe are reliable. However, the information is provided without any representation or warranty, expressed or implied regarding the accuracy or correctness.*

*The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.*