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A Geno Technology, Inc. (USA) brand name

# Safety Data Sheet

Cat. # 786-1216

G-Alum™ Adjuvant Kit

Size: 1 kit



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# Aluminum Solution

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 12/20/2016

Revision date: 05/11/2017

Version: 7.1

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Product name : Aluminum Solution  
Product code : 196A

#### 1.2. Recommended use and restrictions on use

No additional information available

#### 1.3. Supplier

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#### 1.4. Emergency telephone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Serious eye damage/eye irritation Category 2 H319 Causes serious eye irritation

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Warning

Hazard statements (GHS US) : H319 - Causes serious eye irritation

Precautionary statements (GHS US) : P264 - Wash hands, forearms and face thoroughly after handling.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P337+P313 - If eye irritation persists: Get medical advice/attention.

#### 2.3. Other hazards which do not result in classification

No additional information available

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable

### SECTION 3: Composition/Information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

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Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
aluminium sulfate, octadecahydrate	aluminium sulfate (Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> ) hydrate (1:18) / aluminium sulfate (Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> ) octadecahydrate / aluminium sulfate octadecahydrate / aluminium sulfate (Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> ), 18 H <sub>2</sub> O / aluminium sulphate octadecahydrate / aluminium sulphate, octadecahydrate / aluminum sesquisulfate octadecahydrate / aluminum sulfate octadecahydrate / aluminum sulphate octadecahydrate / aluminum trisulfate octadecahydrate / cake alum octadecahydrate / dialuminum sulfate octadecahydrate / dialuminum trisulfate octadecahydrate / sulfuric acid, aluminum salt (3:2), octadecahydrate	(CAS-No.) 7784-31-8	10 - 50	Eye Irrit. 2, H319

Full text of hazard classes and H-statements : see section 16

### SECTION 4: First-aid measures

#### 4.1. Description of first aid measures

- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
- First-aid measures after skin contact : Wash skin with plenty of water.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

#### 4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects after eye contact : Eye irritation.

#### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

#### 5.2. Specific hazards arising from the chemical

No additional information available

#### 5.3. Special protective equipment and precautions for fire-fighters

- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

- Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes.

##### 6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Take up liquid spill into absorbent material.
- Other information : Dispose of materials or solid residues at an authorized site.

#### 6.4. Reference to other sections

For further information refer to section 13.

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### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment.
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

#### 7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in a well-ventilated place. Keep cool.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Aluminum Solution

No additional information available

##### aluminium sulfate, octadecahydrate (7784-31-8)

No additional information available

#### 8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station.
- Environmental exposure controls : Avoid release to the environment.

#### 8.3. Individual protection measures/Personal protective equipment

##### Hand protection:

Protective gloves

##### Eye protection:

Safety glasses

##### Skin and body protection:

Wear suitable protective clothing

##### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

- Physical state : Liquid
- Color : No data available
- Odor : No data available
- Odor threshold : No data available
- pH : No data available
- Melting point : Not applicable
- Freezing point : No data available
- Boiling point : No data available
- Flash point : No data available
- Relative evaporation rate (butyl acetate=1) : No data available
- Flammability (solid, gas) : Not applicable.
- Vapor pressure : No data available
- Relative vapor density at 20 °C : No data available
- Relative density : No data available
- Solubility : No data available
- Log Pow : No data available
- Auto-ignition temperature : No data available
- Decomposition temperature : No data available

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Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Hazardous decomposition products.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

#### aluminium sulfate, octadecahydrate (7784-31-8)

LD50 oral rat	> 9000 mg/kg (Rat, Literature study, Oral)
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Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Symptoms/effects after eye contact	: Eye irritation.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
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#### aluminium sulfate, octadecahydrate (7784-31-8)

LC50 fish 1	214.6 - 228.5 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value, Anhydrous form)
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### 12.2. Persistence and degradability

aluminium sulfate, octadecahydrate (7784-31-8)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

### 12.3. Bioaccumulative potential

aluminium sulfate, octadecahydrate (7784-31-8)	
BCF fish 1	76 - 190 (OECD 305: Bioconcentration: Flow-Through Fish Test, 60 day(s), Salmo salar, Flow-through system, Fresh water, Experimental value, Anhydrous form)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

### 12.4. Mobility in soil

aluminium sulfate, octadecahydrate (7784-31-8)	
Ecology - soil	No (test)data on mobility of the substance available.

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods : Waste treatment methods.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

Not applicable

### Transportation of Dangerous Goods

Not applicable

### Transport by sea

Not applicable

### Air transport

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

No additional information available

### 15.2. International regulations

#### CANADA

aluminium sulfate, octadecahydrate (7784-31-8)	
Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)	

### EU-Regulations

### National regulations

No additional information available

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15.3. US State regulations

SECTION 16: Other information

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Revision date : 05/11/2017

Full text of H-phrases:

H319	Causes serious eye irritation
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SDS US (GHS HazCom 2012)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*



# Precipitating Agent

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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 12/20/2016

Revision date: 05/11/2017

Version: 7.1

### SECTION 1: Identification

#### 1.1. Identification

Product form	: Mixture
Product name	: Precipitating Agent
CAS-No.	: 1310-58-3
Product code	: 335P
Formula	: KOH
Synonyms	: caustic potash / caustic potash liquor, 2% ≤ conc < 5%, aqueous solutions / caustic potash, in aqueous solution; potassium-lye / caustic potash, solid / lye, 2% ≤ conc < 5%, aqueous solutions / potash liquor, 2% ≤ conc < 5%, aqueous solutions / potash lye, 2% ≤ conc < 5% / potassa, 2% ≤ conc < 5%, aqueous solutions / potassium hydrate, 2% ≤ conc < 5%, aqueous solutions / potassium hydroxide, in aqueous solution / potassium hydroxide, solid / potassium hydroxide, electrolytic, lye, 2% ≤ conc < 5%, aqueous solutions
BIG No	: 20747

#### 1.2. Recommended use and restrictions on use

Use of the substance/mixture	: Chemical intermediate Laboratory chemical
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#### 1.3. Supplier

Geno Technology, Inc./ G-Biosciences  
9800 Page Avenue  
Saint Louis, 63132-1429 - United States  
T 800-628-7730 - F 314-991-1504  
[technical@GBiosciences.com](mailto:technical@GBiosciences.com) - [www.GBiosciences.com](http://www.GBiosciences.com)

#### 1.4. Emergency telephone number

Emergency number	: Chemtrec <b>1-800-424-9300</b> (USA/Canada), <b>+1-703-527-3887</b> (Intl)
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### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Acute toxicity (oral) Category 4	H302 Harmful if swallowed
Skin corrosion/irritation Category 1	H314 Causes severe skin burns and eye damage
Full text of H statements : see section 16	

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US)



Signal word (GHS US)	: Danger
Hazard statements (GHS US)	: H302 - Harmful if swallowed H314 - Causes severe skin burns and eye damage
Precautionary statements (GHS US)	: P260 - Do not breathe dust/fume/gas/mist/vapors/spray. P264 - Wash hands, forearms and face thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P310 - Immediately call a poison center or doctor P321 - Specific treatment (see supplemental first aid instruction on this label) P330 - Rinse mouth.



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P363 - Wash contaminated clothing before reuse.  
P405 - Store locked up.  
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

This mixture does not contain any substances to be mentioned according to the criteria of section 3.2 of HazCom 2012

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

- First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.
- First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
- First-aid measures after skin contact : Wash immediately with lots of water (15 minutes)/shower. Do not apply (chemical) neutralizing agents. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.
- First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist.
- First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Do not give activated charcoal. Call Poison Information Centre ([www.big.be/antigif.htm](http://www.big.be/antigif.htm)). Immediately consult a doctor/medical service. Take the container/vomit to the doctor/hospital. Ingestion of large quantities: immediately to hospital. Do not give chemical antidote.

### 4.2. Most important symptoms and effects (acute and delayed)

- Potential Adverse human health effects and symptoms : Causes severe skin burns. Causes serious eye damage.
- Symptoms/effects after inhalation : EXPOSURE TO HIGH CONCENTRATIONS: Dry/sore throat. Respiratory difficulties. Possible inflammation of the respiratory tract. Possible laryngeal spasm/oedema. Risk of pneumonia. FOLLOWING SYMPTOMS MAY APPEAR LATER: Risk of lung oedema.
- Symptoms/effects after skin contact : Caustic burns/corrosion of the skin.
- Symptoms/effects after eye contact : Corrosion of the eye tissue.
- Symptoms/effects after ingestion : Abdominal pain. Difficulty in swallowing. Burns to the gastric/intestinal mucosa. Possible esophageal perforation. FOLLOWING SYMPTOMS MAY APPEAR LATER: Bleeding of the gastrointestinal tract. Blood in vomit. Blood in stool.

### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Adapt extinguishing media to the environment for surrounding fires.

### 5.2. Specific hazards arising from the chemical

- Fire hazard : DIRECT FIRE HAZARD: Non combustible. INDIRECT FIRE HAZARD: Reactions involving a fire hazard: see "Reactivity Hazard".
- Explosion hazard : INDIRECT EXPLOSION HAZARD: Reactions with explosion hazards: see "Reactivity Hazard".

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### 5.3. Special protective equipment and precautions for fire-fighters

- |                                |   |
|--------------------------------|---|
| Precautionary measures fire    | : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.                |
| Firefighting instructions      | : Cool tanks/drums with water spray/remove them into safety. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it. |
| Protection during firefighting | : Heat/fire exposure: compressed air/oxygen apparatus.  |

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

- |                      |   |
|----------------------|---|
| Protective equipment | : Gloves. Face-shield. Corrosion-proof suit. Large spills/in enclosed spaces: compressed air apparatus. Large spills/in enclosed spaces: gas-tight suit.  |
| Emergency procedures | : Mark the danger area. No naked flames. Wash contaminated clothes. Large spills/in confined spaces: consider evacuation. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation. |

#### 6.1.2. For emergency responders

- |                      |   |
|----------------------|---|
| Protective equipment | : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection". |
|----------------------|---|

### 6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

### 6.3. Methods and material for containment and cleaning up

- |                         |  |
|-------------------------|--|
| For containment         | : Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Hazardous reaction: measure explosive gas-air mixture. Reaction: dilute combustible gas/vapour with water curtain. Take account of toxic/corrosive precipitation water. Heat exposure: dilute toxic gas/vapour with water spray.  |
| Methods for cleaning up | : Damaged/cooled tanks must be emptied. Take up liquid spill into absorbent material, e.g.: sand/earth or powdered limestone. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Neutralize small quantities of the liquid spill with sodium bisulfite. Wash away neutralized product with plentiful water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling. |
| Other information       | : Dispose of materials or solid residues at an authorized site.  |

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- |                               |   |
|-------------------------------|---|
| Precautions for safe handling | : Keep away from naked flames/heat. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Use corrosionproof equipment. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Keep container tightly closed. |
| Hygiene measures              | : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.  |

### 7.2. Conditions for safe storage, including any incompatibilities

- |                              |   |
|------------------------------|---|
| Storage conditions           | : Store locked up. Store in a well-ventilated place. Keep cool.   |
| Storage temperature          | : 20 °C   |
| Heat-ignition                | : KEEP SUBSTANCE AWAY FROM: heat sources.   |
| Information on mixed storage | : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. halogens. organic materials.  |
| Storage area                 | : Keep container in a well-ventilated place. Keep locked up. Provide for a tub to collect spills. Unauthorized persons are not admitted. Meet the legal requirements. |
| Special rules on packaging   | : SPECIAL REQUIREMENTS: closing. corrosion-proof. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.              |
| Packaging materials          | : SUITABLE MATERIAL: iron. glass. synthetic material. MATERIAL TO AVOID: lead. aluminium. copper. tin. zinc. bronze.  |

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### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Precipitating Agent (1310-58-3)

No additional information available

#### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

#### 8.3. Individual protection measures/Personal protective equipment

##### Materials for protective clothing:

GIVE EXCELLENT RESISTANCE: butyl rubber. natural rubber. neoprene. nitrile rubber. PVC. GIVE GOOD RESISTANCE: chloroprene rubber. chlorosulfonated polyethylene. tetrafluoroethylene. polyethylene/ethylenevinylalcohol. GIVE POOR RESISTANCE: leather. natural fibres. PVA

##### Hand protection:

Gloves

##### Eye protection:

Face shield

##### Skin and body protection:

Corrosion-proof clothing

##### Respiratory protection:

High gas/vapour concentration: full face mask

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Color	: Colourless to light yellow
Odor	: Odourless
Odor threshold	: No data available
pH	: 14 (5 %)
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: Not applicable
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: 1.02 - 1.04
Specific gravity / density	: 1016 - 1042 kg/m <sup>3</sup>
Molecular mass	: 56.11 g/mol
Solubility	: Soluble in water. Water: complete
Log Pow	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available

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Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

SADT	: Not applicable
VOC content	: 0 %
Other properties	: Physical properties depending on the concentration. Basic reaction.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Reacts with many compounds e.g.: with (some) acids.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Hazardous decomposition products.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

ATE US (oral)	500 mg/kg body weight
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Skin corrosion/irritation	: Causes severe skin burns and eye damage. pH: 14 (5 %)
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Serious eye damage/irritation	: Eye damage, category 1, implicit pH: 14 (5 %)
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Respiratory or skin sensitization	: Not classified
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Germ cell mutagenicity	: Not classified
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Carcinogenicity	: Not classified
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Reproductive toxicity	: Not classified
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Specific target organ toxicity – single exposure	: Not classified
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Specific target organ toxicity – repeated exposure	: Not classified
--	------------------

Aspiration hazard	: Not classified
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Viscosity, kinematic	: No data available
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Potential Adverse human health effects and symptoms	: Causes severe skin burns. Causes serious eye damage.
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Symptoms/effects after inhalation	: EXPOSURE TO HIGH CONCENTRATIONS: Dry/sore throat. Respiratory difficulties. Possible inflammation of the respiratory tract. Possible laryngeal spasm/oedema. Risk of pneumonia. FOLLOWING SYMPTOMS MAY APPEAR LATER: Risk of lung oedema.
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Symptoms/effects after skin contact	: Caustic burns/corrosion of the skin.
-------------------------------------	--

Symptoms/effects after eye contact	: Corrosion of the eye tissue.
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Symptoms/effects after ingestion	: Abdominal pain. Difficulty in swallowing. Burns to the gastric/intestinal mucosa. Possible esophageal perforation. FOLLOWING SYMPTOMS MAY APPEAR LATER: Bleeding of the gastrointestinal tract. Blood in vomit. Blood in stool.
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### SECTION 12: Ecological information

#### 12.1. Toxicity

- Ecology - general : Before neutralisation, the product may represent a danger to aquatic organisms.
- Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
- Ecology - water : Slightly harmful to aquatic organisms. Slightly harmful to fishes. Groundwater pollutant. Mild water pollutant (surface water). Insufficient data available on ecotoxicity. pH shift.

#### Precipitating Agent (1310-58-3)

LC50 fish 1	100 - 1000 mg/l (96 h, Pisces)
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#### 12.2. Persistence and degradability

#### Precipitating Agent (1310-58-3)

Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

#### 12.3. Bioaccumulative potential

#### Precipitating Agent (1310-58-3)

Bioaccumulative potential	Not bioaccumulative.
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#### 12.4. Mobility in soil

#### Precipitating Agent (1310-58-3)

Ecology - soil	No (test)data on mobility of the components available.
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#### 12.5. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Disposal methods

- Waste treatment methods : Waste treatment methods.
- Product/Packaging disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove for physico-chemical/biological treatment.
- Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

### SECTION 14: Transport information

#### Department of Transportation (DOT)

In accordance with DOT

- Transport document description : UN1814 Potassium hydroxide, solution, 8, III
- UN-No.(DOT) : UN1814
- Proper Shipping Name (DOT) : Potassium hydroxide, solution
- Class (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136
- Packing group (DOT) : III - Minor Danger
- Hazard labels (DOT) : 8 - Corrosive



- DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
- DOT Packaging Bulk (49 CFR 173.xxx) : 241

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DOT Special Provisions (49 CFR 172.102)	: IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 154
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 60 L
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
DOT Vessel Stowage Other	: 52 - Stow "separated from" acids
Emergency Response Guide (ERG) Number	: 154
Other information	: No supplementary information available.

### Transportation of Dangerous Goods

Not applicable

### Transport by sea

Transport document description (IMDG)	: UN 1814 POTASSIUM HYDROXIDE SOLUTION, 8, III
UN-No. (IMDG)	: 1814
Proper Shipping Name (IMDG)	: POTASSIUM HYDROXIDE SOLUTION
Class (IMDG)	: 8 - Corrosive substances
Packing group (IMDG)	: III - substances presenting low danger
Limited quantities (IMDG)	: 5 L
EmS-No. (1)	: F-A
EmS-No. (2)	: S-B

### Air transport

Transport document description (IATA)	: UN 1814 Potassium hydroxide solution, 8, III
UN-No. (IATA)	: 1814
Proper Shipping Name (IATA)	: Potassium hydroxide solution
Class (IATA)	: 8 - Corrosives
Packing group (IATA)	: III - Minor Danger

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### Precipitating Agent (1310-58-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Not subject to reporting requirements of the United States SARA Section 313

CERCLA RQ	1000 lb
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### 15.2. International regulations

#### CANADA

#### Precipitating Agent (1310-58-3)

Listed on the Canadian DSL (Domestic Substances List)

### EU-Regulations

#### National regulations

No additional information available

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### 15.3. US State regulations

## SECTION 16: Other information

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Revision date : 05/11/2017

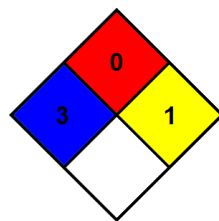
Full text of H-phrases:

H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.



SDS US (GHS HazCom 2012)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*