

The following list contains the Material Safety Data Sheets you requested. Please scroll down to view the requested MSDS(s).

<u>Product</u>	<u>MSDS</u>	<u>Distributor</u>	<u>Format</u>	<u>Language</u>	<u>Quantity</u>
146900	98199	Hach Company	OSHA	English	1
146900	98299	Hach Company	OSHA	English	1
146900	98799	Hach Company	OSHA	English	1
146900	2408932	Hach Company	OSHA	English	1

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Total Enclosures: 4

World Headquarters  
Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

MSDS No: M00029

# MATERIAL SAFETY DATA SHEET

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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Dissolved Oxygen 1 Reagent  
**Catalog Number:** 98199

Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

Emergency Telephone Numbers:  
(Medical and Transportation)  
(303) 623-5716 24 Hour Service  
(515)232-2533 8am - 4pm CST

**MSDS Number:** M00029

**Chemical Name:** Sulfuric acid, manganese(2+) salt (1:1)

**CAS No.:** 7785-87-7

**Chemical Formula:** MnSO<sub>4</sub>

**Chemical Family:** Inorganic Salt

**Hazard:** May cause irritation. Cumulative poison. Experimental mutagen. Experimental teratogen.

**Date of MSDS Preparation:**

**Day:** 06

**Month:** August

**Year:** 2012

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## 2. COMPOSITION / INFORMATION ON INGREDIENTS

### Manganous Sulfate

**CAS No.:** 7785-87-7

**TSCA CAS Number:** 7785-87-7

**Percent Range:** 100.0

**Percent Range Units:** weight / weight

**LD50:** None reported

**LC50:** None reported

**TLV:** 0.2 mg/m<sup>3</sup> (Mn)

**PEL:** Ceiling: 5 mg/m<sup>3</sup> (Mn)

**Hazard:** May cause irritation. Cumulative poison. Experimental mutagen. Experimental teratogen.

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## 3. HAZARDS IDENTIFICATION

### **Emergency Overview:**

**Appearance:** Pink powder

**Odor:** Not determined

HARMFUL IF INHALED MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION

### **HMIS:**

**Health:** 1

**Flammability:** 0

**Reactivity:** 0

**Protective Equipment:** X - See protective equipment, Section 8.

### **NFPA:**

**Health:** 1

**Flammability:** 0

**Reactivity:** 0

**Symbol:** Not applicable

**Potential Health Effects:**

**Eye Contact:** May cause irritation  
**Skin Contact:** May cause irritation  
**Skin Absorption:** No effects anticipated  
**Target Organs:** Not applicable  
**Ingestion:** Very large doses may cause: gastrointestinal irritation nausea  
**Target Organs:** None reported  
**Inhalation:** May cause: respiratory tract irritation pneumonitis  
**Target Organs:** Lungs  
**Medical Conditions Aggravated:** Pre-existing: Respiratory conditions Central nervous system diseases Liver conditions  
**Chronic Effects:** Chronic inhalation of manganese (or Mn compounds) may cause psychiatric disorders characterized by irritability, difficulty walking, speech disturbances, and compulsive behavior. If the conditions persist, manganese poisoning may cause a mask-like facial expression, symptoms similar to Parkinson's disease, and cirrhosis of the liver.  
**Cancer / Reproductive Toxicity Information:**  
O.S.H.A. Listed: No  
IARC Listed: No  
NTP Listed: No  
**Additional Cancer / Reproductive Toxicity Information:** Contains: an experimental mutagen. an experimental teratogen.  
**Toxicologically Synergistic Products:** None reported

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#### 4. FIRST AID

**Eye Contact:** Immediately flush eyes with water for 15 minutes. Call physician.  
**Skin Contact (First Aid):** Wash skin with plenty of water. Call physician if irritation develops.  
**Ingestion (First Aid):** Give 1-2 glasses of water. Induce vomiting using syrup of ipecac or by sticking finger down throat. Never give anything by mouth to an unconscious person. Call physician immediately.  
**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. Call physician.

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#### 5. FIRE FIGHTING MEASURES

**Flammable Properties:** During a fire, corrosive and toxic gases may be generated by thermal decomposition.  
**Flash Point:** Not applicable  
**Method:** Not applicable  
**Flammability Limits:**  
**Lower Explosion Limits:** Not applicable  
**Upper Explosion Limits:** Not applicable  
**Autoignition Temperature:** Not determined  
**Hazardous Combustion Products:** This material will not burn.  
**Fire / Explosion Hazards:** None reported  
**Static Discharge:** None reported.  
**Mechanical Impact:** None reported  
**Extinguishing Media:** Use media appropriate to surrounding fire conditions  
**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear. Evacuate area and fight fire from a safe distance.

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#### 6. ACCIDENTAL RELEASE MEASURES

**Spill Response Notice:**  
Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.  
**Containment Technique:** Stop spilled material from being released to the environment.  
**Clean-up Technique:** Scoop up spilled material into a large beaker and dissolve with water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a soap solution.  
**Evacuation Procedure:** Evacuate local area (15 foot radius or as directed by your facility's emergency response plan) when: a pound or more of loose powder is spilled. If conditions warrant, increase the size of the evacuation.  
**Special Instructions (for accidental release):** Product is regulated as a hazardous air pollutant in the U.S.  
**304 EHS RQ (40 CFR 355):** Not applicable

*D.O.T. Emergency Response Guide Number:* Not applicable

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## 7. HANDLING / STORAGE

**Handling:** Avoid contact with eyes skin Do not breathe dust. Wash thoroughly after handling. Use with adequate ventilation. Maintain general industrial hygiene practices when using this product.

**Storage:** Store at 10 - 30°C. Keep away from: oxidizers powdered metals

**Flammability Class:** Not applicable

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## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Have an eyewash station nearby. Have a safety shower nearby. Maintain adequate ventilation to keep vapor level below TWA for chemicals in this product. Maintain general industrial hygiene practices when using this product.

**Personal Protective Equipment:**

**Eye Protection:** safety glasses with top and side shields

**Skin Protection:** disposable latex gloves

**Inhalation Protection:** adequate ventilation

**Precautionary Measures:** Avoid contact with: eyes skin Do not breathe: dust Wash thoroughly after handling. Use with adequate ventilation. Keep away from: oxidizers powdered metals

**TLV:** 0.2 mg/m<sup>3</sup> (Mn)

**PEL:** Ceiling: 5 mg/m<sup>3</sup> (Mn)

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## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** Pink powder

**Physical State:** Solid

**Molecular Weight:** 151.01

**Odor:** Not determined

**pH:** 3.7 (5% sol'n)

**Vapor Pressure:** Not applicable

**Vapor Density (air = 1):** Not applicable

**Boiling Point:** 850 °C

**Melting Point:** > 400°C (> 752°F)

**Specific Gravity/ Relative Density (water = 1; air =1):** 3.25

**Evaporation Rate (water = 1):** Not applicable

**Volatile Organic Compounds Content:** Not applicable

**Partition Coefficient (n-octanol / water):** Not applicable

**Solubility:**

**Water:** Soluble

**Acid:** Not determined

**Other:** Insoluble in alcohol

**Metal Corrosivity:**

**Steel:** Not determined

**Aluminum:** 0.002 in/yr (0.051 mm/yr)

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## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.

**Conditions to Avoid:** Extreme temperatures Heating to decomposition.

**Reactivity / Incompatibility:** Incompatible with: oxidizers powdered metals

**Hazardous Decomposition:** Heating to decomposition releases toxic and/or corrosive fumes of: sulfur oxides manganese oxides

**Hazardous Polymerization:** Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**

**LD50:** None reported

**LC50:** None reported

**Dermal Toxicity Data:** None reported  
**Skin and Eye Irritation Data:** None reported  
**Mutation Data:** Oral mouse sperm morphology @ 513 mg/kg/5D (Continuous); Hamster ovary cytogenetic analysis @ 180 mg/l; Hamster ovary sister chromatid exchange @ 5 mg/l; more data reported in RTECS.  
**Reproductive Effects Data:** Oral mouse TDLo = 513 mg/kg (Paternal effects - spermatogenesis).  
**Ingredient Toxicological Data:** --  
Not applicable

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## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** Mytilus edulis (mussel)48 hr EC50 = 30 mg/L - abnormal embryo; Fucus spiralis 20 days 5 mg/L intermittent 42% decrease in growth rate.  
Do not release into the environment.  
**Ingredient Ecological Information:** --  
Not applicable

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## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** Not applicable  
**Special Instructions (Disposal):** Dilute to 3 to 5 times the volume with cold water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the material to the drain. Flush system with plenty of water.  
**Empty Containers:** Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.  
**NOTICE (Disposal):** These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

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## 14. TRANSPORT INFORMATION

### **D.O.T.:**

**D.O.T. Proper Shipping Name:** Environmentally hazardous substances, solid, n.o.s.  
(Manganese sulfate)  
**DOT Hazard Class:** 9  
**DOT Subsidiary Risk:** NA  
**DOT ID Number:** UN3077  
**DOT Packing Group:** III

### **I.C.A.O.:**

**I.C.A.O. Proper Shipping Name:** Environmentally Hazardous Substance, Solid, nos  
(Manganese sulfate)  
**ICAO Hazard Class:** 9  
**ICAO Subsidiary Risk:** NA  
**ICAO ID Number:** UN3077  
**ICAO Packing Group:** III

### **I.M.O.:**

**I.M.O. Proper Shipping Name:** Environmentally Hazardous Substance, Solid, nos  
(Manganese sulfate)  
**I.M.O. Hazard Class:** 9  
**I.M.O. Subsidiary Risk:** NA  
**I.M.O. ID Number:** UN3077  
**I.M.O. Packing Group:** III

**Additional Information:** There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply. ALSO NOTE: If the National Competent Authority declares this product an environmental hazard by Special Provision 909 (IMDG) and Special Provision A97 (IATA) the classification may be UN3077 or UN3082.

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## 15. REGULATORY INFORMATION

**U.S. Federal Regulations:**

**O.S.H.A.:** This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

**E.P.A.:**

**S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370):** Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard

**S.A.R.A. Title III Section 313 (40 CFR 372):** This product contains a chemical(s) subject to the reporting requirements of Section 313 of Title III of SARA.

Manganese compounds

**302 (EHS) TPQ (40 CFR 355):** Not applicable

**304 CERCLA RQ (40 CFR 302.4):** Manganese Compounds 1 lb.

**304 EHS RQ (40 CFR 355):** Not applicable

**Clean Water Act (40 CFR 116.4):** Not applicable

**RCRA:** Contains no RCRA regulated substances.

**C.P.S.C.:** Not applicable

**State Regulations:**

**California Prop. 65:** No Prop. 65 listed chemicals are present in this product.

**Identification of Prop. 65 Ingredient(s):** None

**California Perchlorate Rule CCR Title 22 Chap 33:** Not applicable

**Trade Secret Registry:** Not applicable

**National Inventories:**

**U.S. Inventory Status:** TSCA Listed: Yes

**TSCA CAS Number:** 7785-87-7

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## 16. OTHER INFORMATION

**Intended Use:** Laboratory Use

**References:** 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Association, 1991. Cassaret and Doull's Toxicology, 3rd Ed. New York: Macmillan Publishing Co., Inc., 1986. List of Dangerous Substances Classified in Annex I of the EEC Directive (67/548) - Classification, Packaging and Labeling of Dangerous Substances, Amended July 1992. Technical Judgment. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Vendor Information.

**Revision Summary:** Substantial revision to comply with EU Reg 1272/2008, Reg 1907/2006 and UN GHS (ST/SG/AC.10/36/Add.3).

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### Legend:

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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World Headquarters  
Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

MSDS No: M00028

# MATERIAL SAFETY DATA SHEET

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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Dissolved Oxygen 2 Reagent  
**Catalog Number:** 98299

Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

Emergency Telephone Numbers:  
(Medical and Transportation)  
(303) 623-5716 24 Hour Service  
(515)232-2533 8am - 4pm CST

**MSDS Number:** M00028  
**Chemical Name:** Not applicable  
**CAS No.:** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Not applicable  
**Hazard:** Toxic. Causes severe burns.  
**Date of MSDS Preparation:**  
**Day:** 29  
**Month:** September  
**Year:** 2009

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## 2. COMPOSITION / INFORMATION ON INGREDIENTS

### Potassium Iodide

**CAS No.:** 7681-11-0  
**TSCA CAS Number:** 7681-11-0  
**Percent Range:** 30.0 - 40.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral Mouse LD50 = 1862 mg/kg  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** Causes irritation.

### Lithium Hydroxide

**CAS No.:** 1310-65-2  
**TSCA CAS Number:** 1310-65-2  
**Percent Range:** 55.0 - 65.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat LD50 = 225 mg/kg  
**LC50:** Inhalation rat LC50 = 980 mg/m<sup>3</sup>/4H  
**TLV:** 3mg/m<sup>3</sup> Respirable Particles; 10 mg/m<sup>3</sup> Inhalable particles  
**PEL:** 5 mg/m<sup>3</sup> Respirable Fraction; 15 mg/m<sup>3</sup> Total Dust  
**Hazard:** Toxic. Causes severe burns. Harmful if swallowed

### Sodium Azide

**CAS No.:** 26628-22-8  
**TSCA CAS Number:** 26628-22-8

**Percent Range:** 1.0 - 5.0

**Percent Range Units:** weight / weight

**LD50:** Oral rat LD<sub>50</sub> = 27 mg/kg; Oral mouse LD<sub>50</sub> = 27 mg/kg.

**LC50:** None reported

**TLV:** C: 0.29 mg/m<sup>3</sup> as Sodium azide; C 0.11 ppm as Hydrazoic acid vapor

**PEL:** Not established

**Hazard:** Highly toxic. May cause irritation. Cumulative poison. Experimental mutagen. Explosive. Contact with acid may generate toxic fumes.

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### 3. HAZARDS IDENTIFICATION

**Emergency Overview:**

**Appearance:** White crystals

**Odor:** None

CAUSES SEVERE BURNS HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN

**HMIS:**

**Health:** 3

**Flammability:** 1

**Reactivity:** 1

**Protective Equipment:** X - See protective equipment, Section 8.

**NFPA:**

**Health:** 3

**Flammability:** 1

**Reactivity:** 1

**Symbol:** Not applicable

**Potential Health Effects:**

**Eye Contact:** Causes severe burns

**Skin Contact:** Causes severe burns

**Skin Absorption:** Toxic. Effects similar to those of ingestion

**Target Organs:** Central nervous system

**Ingestion:** Toxic Causes: severe burns hypotension May cause iodism, which symptoms include skin rash, conjunctivitis, runny nose, sneezing, bronchitis, headache, fever and irritation of mucous membranes. May cause: abdominal pain dizziness nausea vomiting respiratory stimulation convulsions followed by respiratory depression central nervous system effects kidney damage liver damage spleen damage lung damage coma death

**Target Organs:** Central nervous system Bone marrow Kidneys Liver Spleen Lungs

**Inhalation:** Causes: severe burns May cause: coughing shortness of breath bronchitis headache dizziness weakness respiratory stimulation convulsions followed by respiratory depression death

**Target Organs:** None reported

**Medical Conditions Aggravated:** Sodium azide produces a larger blood pressure drop in persons with high blood pressure than in persons with normal blood pressure. Pre-existing: Eye conditions Skin conditions Respiratory conditions Kidney conditions Liver conditions

**Chronic Effects:** Lithium compounds have been implicated in development of aplastic anemia. Signs of lithium poisoning include dehydration, extreme weight loss, fine tremor of hands, nausea, vomiting and diarrhea, Chronic overexposure may cause headache central nervous system effects kidney damage liver damage

**Cancer / Reproductive Toxicity Information:**

This product does NOT contain any OSHA listed carcinogens.

This product does NOT contain any IARC listed chemicals.



This product does NOT contain any NTP listed chemicals.

**Additional Cancer / Reproductive Toxicity Information:** Contains: an experimental mutagen. an experimental teratogen.

**Toxicologically Synergistic Products:** None reported

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#### 4. FIRST AID

**Eye Contact:** Immediately flush eyes with water for 15 minutes. Call physician.

**Skin Contact (First Aid):** Wash skin with plenty of water for 15 minutes. Remove contaminated clothing. Call physician immediately.

**Ingestion (First Aid):** Do not induce vomiting. Give 1-2 glasses of water. Never give anything by mouth to an unconscious person. Call physician immediately.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. Call physician.

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#### 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Does not burn, but may melt in a fire, releasing toxic fumes. During a fire, corrosive and toxic gases may be generated by thermal decomposition.

**Flash Point:** Not applicable

**Method:** Not applicable

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Autoignition Temperature:** Not determined

**Hazardous Combustion Products:** None reported

**Fire / Explosion Hazards:** Contact with metals gives off hydrogen gas which is flammable. Closed containers may explode if heated.

**Static Discharge:** None reported.

**Mechanical Impact:** None reported

**Extinguishing Media:** Carbon dioxide. Dry chemical. Water.

**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear. Evacuate area and fight fire from a safe distance.

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#### 6. ACCIDENTAL RELEASE MEASURES

**Spill Response Notice:**

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance.

**Containment Technique:** Stop spilled material from being released to the environment.

**Clean-up Technique:** Avoid contact with spilled material. Sweep up material. Dispose of material in an E.P.A. approved hazardous waste facility. Decontaminate the area of the spill with a weak acid solution.

**Evacuation Procedure:** Evacuate general area (50 foot radius or as directed by your facility's emergency response plan) when: a pound or more of loose powder is spilled. If conditions warrant, increase the size of the evacuation.

**Special Instructions (for accidental release):** Mixture contains a component which is regulated as hazardous waste.

**304 EHS RQ (40 CFR 355):** Sodium Azide - RQ 1000 lbs.

**D.O.T. Emergency Response Guide Number:** 154

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#### 7. HANDLING / STORAGE

**Handling:** Avoid contact with eyes skin clothing Do not breathe dust. Wash thoroughly after handling. Use with adequate ventilation. Maintain general industrial hygiene practices when using this product.

**Storage:** Store in a cool, dry place. Keep away from: metals acids / acid fumes.

**Flammability Class:** Not applicable

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## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Have an eyewash station nearby. Have a safety shower nearby. Use a fume hood to avoid exposure to dust, mist or vapor. Maintain general industrial hygiene practices when using this product.

**Personal Protective Equipment:**

**Eye Protection:** chemical splash goggles

**Skin Protection:** disposable latex gloves lab coat

**Inhalation Protection:** laboratory fume hood

**Precautionary Measures:** Avoid contact with: eyes skin clothing Do not breathe: dust Wash thoroughly after handling. Keep away from: metals acids/acid fumes

**TLV:** Not established

**PEL:** Not established

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## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** White crystals

**Physical State:** Solid

**Molecular Weight:** Not applicable

**Odor:** None

**pH:** 12.6 (5% sol'n)

**Vapor Pressure:** Not applicable

**Vapor Density (air = 1):** Not applicable

**Boiling Point:** Not applicable

**Melting Point:** 110°C (230°F)

**Specific Gravity (water = 1):** 1.94

**Evaporation Rate (water = 1):** Not applicable

**Volatile Organic Compounds Content:** Not applicable

**Partition Coefficient (n-octanol / water):** Not applicable

**Solubility:**

**Water:** Soluble

**Acid:** Not determined

**Other:** Not determined

**Metal Corrosivity:**

**Steel:** Not determined

**Aluminum:** 0.248 in/yr (6.30 mm/yr)

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## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.

**Conditions to Avoid:** Excess moisture Extreme temperatures

**Reactivity / Incompatibility:** May react violently in contact with: acids oxidizers

**Hazardous Decomposition:** Heating to decomposition releases toxic and/or corrosive fumes of: iodine iodine compounds potassium oxide nitrogen oxides sodium oxides Contact with metals may release flammable hydrogen gas.

**Hazardous Polymerization:** Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**

**LD50:** Oral rat LD<sub>50</sub> = 350 mg/kg

**LC50:** None reported

**Dermal Toxicity Data:** None reported

**Skin and Eye Irritation Data:** None reported

**Mutation Data:** Sodium Azide: DNA inhibition in human fibroblasts @ 50 mg/l; other data reported in RTECS.

**Reproductive Effects Data:** None reported

**Ingredient Toxicological Data:** Lithium Hydroxide: Oral rat LD<sub>50</sub> = 225 mg/kg. Sodium Azide: Oral rat LD<sub>50</sub> = 27 mg/kg; Dermal rabbit LD<sub>50</sub> = 20 mg/kg.

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## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --

No ecological data available for this product.

**Ingredient Ecological Information:** --

No ecological data available for the ingredients of this product.

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## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** D002

**Special Instructions (Disposal):** Never put unreacted azides down the drain! Dispose of material in an E.P.A. approved hazardous waste facility.

**Empty Containers:** Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

**NOTICE (Disposal):** These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

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## 14. TRANSPORT INFORMATION

**D.O.T.:**

**D.O.T. Proper Shipping Name:** Lithium Hydroxide Mixture

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**DOT Hazard Class:** 8

**DOT Subsidiary Risk:** NA

**DOT ID Number:** UN2680

**DOT Packing Group:** II

**I.C.A.O.:**

**I.C.A.O. Proper Shipping Name:** Lithium Hydroxide Mixture

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**ICAO Hazard Class:** 8

**ICAO Subsidiary Risk:** NA

**ICAO ID Number:** UN2680

**ICAO Packing Group:** II

**I.M.O.:**

**I.M.O. Proper Shipping Name:** Lithium Hydroxide Mixture

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**I.M.O. Hazard Class:** 8

**I.M.O. Subsidiary Risk:** NA

**I.M.O. ID Number:** UN2680

**I.M.O. Packing Group:** II

**Additional Information:** There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given

above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

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## 15. REGULATORY INFORMATION

### *U.S. Federal Regulations:*

**O.S.H.A.:** This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

### *E.P.A.:*

**S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370):** Immediate (Acute) Health Hazard  
Delayed (Chronic) Health Hazard

**S.A.R.A. Title III Section 313 (40 CFR 372):** This product contains a chemical(s) subject to the reporting requirements of Section 313 of Title III of SARA.

Sodium azide

**302 (EHS) TPQ (40 CFR 355):** Sodium Azide 500 lbs.

**304 CERCLA RQ (40 CFR 302.4):** Sodium azide 1000 lbs.

**304 EHS RQ (40 CFR 355):** Sodium Azide - RQ 1000 lbs.

**Clean Water Act (40 CFR 116.4):** Not applicable

**RCRA:** Contains RCRA regulated substances. See Section 13, EPA Waste ID Number.

**C.P.S.C.:** The label for this product bears the signal word "POISON" because the concentration of Lithium Hydroxide in the product is greater than/ equal to 10%

### *State Regulations:*

**California Prop. 65:** No Prop. 65 listed chemicals are present in this product.

**Identification of Prop. 65 Ingredient(s):** None

**California Perchlorate Rule CCR Title 22 Chap 33:** Not applicable

**Trade Secret Registry:** Not applicable

### *National Inventories:*

**U.S. Inventory Status:** All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710).

**TSCA CAS Number:** Not applicable

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## 16. OTHER INFORMATION

**Intended Use:** Determination of dissolved oxygen

**References:** 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Association, 1991. List of Dangerous Substances Classified in Annex I of the EEC Directive (67/548) - Classification, Packaging and Labeling of Dangerous Substances, Amended July 1992. Outside Testing. Technical Judgment.

**Revision Summary:** Updates in Section(s) 2,

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### Legend:

NA - Not Applicable                      w/w - weight/weight

ND - Not Determined                    w/v - weight/volume

NV - Not Available                        v/v - volume/volume

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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World Headquarters  
Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

MSDS No: M00007

## MATERIAL SAFETY DATA SHEET

---

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Dissolved Oxygen 3 Powder Pillows  
**Catalog Number:** 98799

Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

Emergency Telephone Numbers:  
(Medical and Transportation)  
(303) 623-5716 24 Hour Service  
(515)232-2533 8am - 4pm CST

**MSDS Number:** M00007  
**Chemical Name:** Sulfamic Acid  
**CAS No.:** 5329-14-6  
**Chemical Formula:** H<sub>3</sub>NO<sub>3</sub>S  
**Chemical Family:** Inorganic Acid  
**Hazard:** Causes eye burns.  
**Date of MSDS Preparation:**  
**Day:** 25  
**Month:** 06  
**Year:** 2010

---

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

**Other component**

**CAS No.:** Not applicable  
**TSCA CAS Number:** Not applicable  
**Percent Range:** < 1.0  
**Percent Range Units:** weight / weight  
**LD50:** Not applicable  
**LC50:** Not applicable  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** Any ingredient(s) of this product listed as "Other component(s)" is not considered a health hazard to the user of this product.

**Sulfamic Acid**

**CAS No.:** 5329-14-6  
**TSCA CAS Number:** 5329-14-6  
**Percent Range:** > 99.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat LD50 = 3160 mg/kg.  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** Causes eye burns.

---

### 3. HAZARDS IDENTIFICATION

**Emergency Overview:**  
**Appearance:** White crystals

**Odor:** None

CAUSES EYE BURNS CAUSES SKIN AND RESPIRATORY TRACT IRRITATION

**HMIS:**

**Health:** 2

**Flammability:** 1

**Reactivity:** 1

**Protective Equipment:** X - See protective equipment, Section 8.

**NFPA:**

**Health:** 2

**Flammability:** 1

**Reactivity:** 1

**Symbol:** Not applicable

**Potential Health Effects:**

**Eye Contact:** Causes eye burns.

**Skin Contact:** Causes severe irritation

**Skin Absorption:** None reported

**Target Organs:** None reported

**Ingestion:** May cause: irritation of the mouth and esophagus gastrointestinal irritation

**Target Organs:** None reported

**Inhalation:** May cause: irritation of nose and throat

**Target Organs:** None reported

**Medical Conditions Aggravated:** Pre-existing: Eye conditions Skin conditions Respiratory conditions

**Chronic Effects:** None reported

**Cancer / Reproductive Toxicity Information:**

O.S.H.A. Listed: No

IARC Listed: No

NTP Listed: No

**Additional Cancer / Reproductive Toxicity Information:** Not applicable

**Toxicologically Synergistic Products:** None reported

---

#### 4. FIRST AID

**Eye Contact:** Immediately flush eyes with water for 15 minutes. Call physician.

**Skin Contact (First Aid):** Wash skin with plenty of water for 15 minutes. Call physician immediately.

**Ingestion (First Aid):** Do not induce vomiting. Give 1-2 glasses of water. Call physician immediately. Never give anything by mouth to an unconscious person.

**Inhalation:** Remove to fresh air.

---

#### 5. FIRE FIGHTING MEASURES

**Flammable Properties:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition.

**Flash Point:** Not applicable

**Method:** Not applicable

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Autoignition Temperature:** Not applicable

**Hazardous Combustion Products:** Toxic fumes of: ammonia nitrogen oxides. sulfur oxides.

**Fire / Explosion Hazards:** May react violently with: chlorine / chlorine compounds metal nitrates metal nitrites nitric acid

**Static Discharge:** None reported.

**Mechanical Impact:** None reported

**Extinguishing Media:** Dry chemical. Water.

**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

---

#### 6. ACCIDENTAL RELEASE MEASURES

**Spill Response Notice:**

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance.

**Containment Technique:** Stop spilled material from being released to the environment. Cover spilled solid material with sand or other inert material.

**Clean-up Technique:** Scoop up spilled material into a large beaker and dissolve with water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a soap solution.

**Evacuation Procedure:** Evacuate local area (15 foot radius or as directed by your facility's emergency response plan) when: a pound or more of loose powder is spilled. If conditions warrant, increase the size of the evacuation.

**Special Instructions (for accidental release):** Product is regulated as RCRA hazardous waste in the U.S.

**304 EHS RQ (40 CFR 355):** Not applicable

**D.O.T. Emergency Response Guide Number:** 154

---

## 7. HANDLING / STORAGE

**Handling:** Avoid contact with eyes skin Do not breathe dust. Maintain general industrial hygiene practices when using this product.

**Storage:** Store away from: oxidizers alkalis chlorine/chlorinated metals Protect from: heat moisture

**Flammability Class:** Not applicable

---

## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Have an eyewash station nearby. Maintain general industrial hygiene practices when using this product.

**Personal Protective Equipment:**

**Eye Protection:** safety glasses with top and side shields

**Skin Protection:** disposable latex gloves lab coat

**Inhalation Protection:** adequate ventilation

**Precautionary Measures:** Avoid contact with: eyes skin Do not breathe: dust Wash thoroughly after handling. Keep away from: alkalis metals Protect from: heat moisture

**TLV:** Not established

**PEL:** Not established

---

## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** White crystals

**Physical State:** Solid

**Molecular Weight:** 97.10

**Odor:** None

**pH:** 1% soln = 1.18

**Vapor Pressure:** Not applicable

**Vapor Density (air = 1):** Not applicable

**Boiling Point:** Not applicable

**Melting Point:** Product decomposes at 205 °C; 401 °F

**Specific Gravity/ Relative Density (water = 1; air =1):** 2.15

**Evaporation Rate (water = 1):** Not applicable

**Volatile Organic Compounds Content:** Not applicable

**Partition Coefficient (n-octanol / water):** None reported

**Solubility:**

**Water:** 1:2 ratio @ 80 ° C (176 °F)

**Acid:** Soluble

**Other:** Slightly soluble in alcohol, methanol.

**Metal Corrosivity:**

**Steel:** 0.814 in/yr

**Aluminum:** 0.212 in/yr

---

## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.



**Conditions to Avoid:** Heating to decomposition. Excess moisture

**Reactivity / Incompatibility:** May react violently in contact with: chlorates metal nitrates metal nitrites nitric acid

Incompatible with: alkalis oxidizers

**Hazardous Decomposition:** Heating to decomposition releases toxic and/or corrosive fumes of: ammonia nitrogen oxides sulfur oxides

**Hazardous Polymerization:** Will not occur.

---

## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**

**LD50:** Oral rat LD50 = 3160 mg/kg.

**LC50:** None reported

**Dermal Toxicity Data:** None reported

**Skin and Eye Irritation Data:** Skin Human 4%/5 days intermittent MILD, Skin rabbit 500 mg/24H SEVERE, Eye rabbit 20mg MODERATE, Eye rabbit 250µg/24H SEVERE.

**Mutation Data:** None reported

**Reproductive Effects Data:** None reported

**Ingredient Toxicological Data:** --

Not applicable

---

## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --

No ecological data available for this product.

**Ingredient Ecological Information:** --

Not applicable

---

## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** None

**Special Instructions (Disposal):** Dilute to 3 to 5 times the volume with cold water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the reacted material to the drain.

**Empty Containers:** Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

**NOTICE (Disposal):** These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

---

## 14. TRANSPORT INFORMATION

**D.O.T.:**

**D.O.T. Proper Shipping Name:** Sulphamic Acid

--

**DOT Hazard Class:** 8

**DOT Subsidiary Risk:** NA

**DOT ID Number:** UN2967

**DOT Packing Group:** III

**I.C.A.O.:**

**I.C.A.O. Proper Shipping Name:** Sulphamic Acid

--

**ICAO Hazard Class:** 8

**ICAO Subsidiary Risk:** NA

**ICAO ID Number:** UN2967

**ICAO Packing Group:** III

**I.M.O.:**

**I.M.O. Proper Shipping Name:** Sulphamic Acid

--

**I.M.O. Hazard Class:** 8

**I.M.O. Subsidiary Risk:** NA

**I.M.O. ID Number:** UN2967

**I.M.O. Packing Group:** III

**Additional Information:** There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

---

## 15. REGULATORY INFORMATION

### **U.S. Federal Regulations:**

**O.S.H.A.:** This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

### **E.P.A.:**

**S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370):** Immediate (Acute) Health Hazard

**S.A.R.A. Title III Section 313 (40 CFR 372):** This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

--

**302 (EHS) TPQ (40 CFR 355):** Not applicable

**304 CERCLA RQ (40 CFR 302.4):** Not applicable

**304 EHS RQ (40 CFR 355):** Not applicable

**Clean Water Act (40 CFR 116.4):** Not applicable

**RCRA:** Contains no RCRA regulated substances.

**C.P.S.C.:** Not applicable

### **State Regulations:**

**California Prop. 65:** No Prop. 65 listed chemicals are present in this product.

**Identification of Prop. 65 Ingredient(s):** Not applicable

**California Perchlorate Rule CCR Title 22 Chap 33:**

**Trade Secret Registry:** Not applicable

### **National Inventories:**

**U.S. Inventory Status:** TSCA Listed: Yes

**TSCA CAS Number:** 5329-14-6

---

## 16. OTHER INFORMATION

**Intended Use:** Laboratory Use

**References:** Vendor Information. NIOSH Registry of Toxic Effects of Chemical Substances, 1985-86. Cincinnati: U.S. Department of Health and Human Services, April, 1987. Gosselin, R. E. et al. Clinical Toxicology of Commercial Products, 5th Ed. Baltimore: The Williams and Wilkins Co., 1984. Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Association, 1991. Outside Testing. Technical Judgment. The Merck Index, 11th Ed. Rahway, New Jersey: Merck and Co., Inc., 1989. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992.

**Revision Summary:** Updates in Section(s) 14,

---

### **Legend:**

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

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World Headquarters  
Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

MSDS No: M00371

# MATERIAL SAFETY DATA SHEET

---

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Sodium Thiosulfate Standard Solution, Stabilized, 0.0109 N  
**Catalog Number:** 2408932

Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

Emergency Telephone Numbers:  
(Medical and Transportation)  
(303) 623-5716 24 Hour Service  
(515)232-2533 8am - 4pm CST

**MSDS Number:** M00371  
**Chemical Name:** Not applicable  
**CAS No.:** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Not applicable  
**Hazard:** May cause irritation.  
**Date of MSDS Preparation:**  
**Day:** 31  
**Month:** March  
**Year:** 2012

---

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

### Propylene Glycol

**CAS No.:** 57-55-6  
**TSCA CAS Number:** 57-55-6  
**Percent Range:** 20.0 - 30.0  
**Percent Range Units:** volume / volume  
**LD50:** Oral rat LD50 = 20 g/kg  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** No effects anticipated.

### Demineralized Water

**CAS No.:** 7732-18-5  
**TSCA CAS Number:** 7732-18-5  
**Percent Range:** 70.0 - 80.0  
**Percent Range Units:** volume / volume  
**LD50:** None reported  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** No effects anticipated.

### Sodium Thiosulfate

**CAS No.:** 7772-98-7  
**TSCA CAS Number:** 7772-98-7  
**Percent Range:** < 1.0  
**Percent Range Units:** weight / volume  
**LD50:** Oral rat LD50 > 5 000 mg/kg.  
**LC50:** None reported

*TLV:* Not established  
*PEL:* Not established  
*Hazard:* May cause irritation.

#### **Sodium Sulfate**

*CAS No.:* 7757-82-6  
*TSCA CAS Number:* 7757-82-6  
*Percent Range:* 1.0 - 5.0  
*Percent Range Units:* weight / volume  
*LD50:* Oral mouse LD50 = 5989 mg/kg  
*LC50:* None reported  
*TLV:* Not established  
*PEL:* Not established  
*Hazard:* May cause irritation.

---

### **3. HAZARDS IDENTIFICATION**

#### *Emergency Overview:*

*Appearance:* Clear, colorless liquid  
*Odor:* Sweet  
MAY CAUSE EYE AND SKIN IRRITATION

#### *HMIS:*

*Health:* 1  
*Flammability:* 0  
*Reactivity:* 0  
*Protective Equipment:* X - See protective equipment, Section 8.

#### *NFPA:*

*Health:* 1  
*Flammability:* 0  
*Reactivity:* 0  
*Symbol:* Not applicable

#### *Potential Health Effects:*

*Eye Contact:* May cause irritation  
*Skin Contact:* May cause irritation  
*Skin Absorption:* No effects anticipated  
*Target Organs:* Not applicable  
*Ingestion:* Very large doses may cause: central nervous system depression kidney damage rapid pulse and respirations  
*Target Organs:* None reported  
*Inhalation:* No effects anticipated  
*Target Organs:* Not applicable  
*Medical Conditions Aggravated:* None reported  
*Chronic Effects:* None reported  
*Cancer / Reproductive Toxicity Information:*  
This product does NOT contain any OSHA listed carcinogens.  
This product does NOT contain any IARC listed chemicals.  
This product does NOT contain any NTP listed chemicals.  
*Additional Cancer / Reproductive Toxicity Information:* None reported  
*Toxicologically Synergistic Products:* None reported

---

### **4. FIRST AID**

*Eye Contact:* Immediately flush eyes with water for 15 minutes. Call physician.  
*Skin Contact (First Aid):* Wash skin with soap and plenty of water. Call physician if irritation develops.  
*Ingestion (First Aid):* Give large quantities of water. Call physician immediately.  
*Inhalation:* Remove to fresh air.

---

### **5. FIRE FIGHTING MEASURES**

*Flammable Properties:* During a fire, this product decomposes to form toxic gases.

**Flash Point:** > 100°C (212°F)

**Method:** Open cup

**Flammability Limits:**

**Lower Explosion Limits:** Not determined

**Upper Explosion Limits:** Not determined

**Autoignition Temperature:** Not determined

**Hazardous Combustion Products:** Toxic fumes of: sodium oxides carbon monoxide, carbon dioxide.

**Fire / Explosion Hazards:** None reported

**Static Discharge:** None reported.

**Mechanical Impact:** None reported

**Extinguishing Media:** Use media appropriate to surrounding fire conditions

**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

---

## 6. ACCIDENTAL RELEASE MEASURES

**Spill Response Notice:**

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

**Containment Technique:** Absorb spilled liquid with non-reactive sorbent material. Stop spilled material from being released to the environment.

**Clean-up Technique:** Absorb spilled liquid with non-reactive sorbent material. Sweep up material. Place material in a plastic bag. Mark bag 'Non-hazardous trash', and dispose of as normal refuse. Decontaminate the area of the spill with a soap solution.

**Evacuation Procedure:** Evacuate as needed to perform spill clean-up. If conditions warrant, increase the size of the evacuation.

**Special Instructions (for accidental release):** Not applicable

**304 EHS RQ (40 CFR 355):** Not applicable

**D.O.T. Emergency Response Guide Number:** None

---

## 7. HANDLING / STORAGE

**Handling:** Avoid contact with eyes skin Do not breathe mist or vapors. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

**Storage:** Protect from: oxidizers

**Flammability Class:** Not applicable

---

## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Maintain general industrial hygiene practices when using this product.

**Personal Protective Equipment:**

**Eye Protection:** safety glasses with top and side shields

**Skin Protection:** disposable latex gloves lab coat

**Inhalation Protection:** adequate ventilation

**Precautionary Measures:** Avoid contact with: eyes skin Do not breathe: mist/vapor Wash thoroughly after handling.

**TLV:** Not established

**PEL:** Not established

---

## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** Clear, colorless liquid

**Physical State:** Liquid

**Molecular Weight:** Not applicable

**Odor:** Sweet

**pH:** 9.9

**Vapor Pressure:** Not determined

**Vapor Density (air = 1):** Not determined

**Boiling Point:** 99°C (210°F)

**Melting Point:** -5°C (23°F)  
**Specific Gravity/ Relative Density (water = 1; air =1):** 1.05  
**Evaporation Rate (water = 1):** 0.91  
**Volatile Organic Compounds Content:** Not applicable  
**Partition Coefficient (n-octanol / water):** Not applicable  
**Solubility:**  
**Water:** Soluble  
**Acid:** Soluble  
**Other:** Not determined  
**Metal Corrosivity:**  
**Steel:** 0.006 in/yr  
**Aluminum:** 0.003 in/yr

---

## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.  
**Conditions to Avoid:** Heat Evaporation  
**Reactivity / Incompatibility:** Incompatible with: oxidizers  
**Hazardous Decomposition:** Toxic fumes of: sodium oxides carbon monoxide carbon dioxide  
**Hazardous Polymerization:** Will not occur.

---

## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**  
**LD50:** None reported  
**LC50:** None reported  
**Dermal Toxicity Data:** None reported  
**Skin and Eye Irritation Data:** None reported  
**Mutation Data:** None reported  
**Reproductive Effects Data:** None reported  
**Ingredient Toxicological Data:** Propylene Glycol: Oral rat LD50 = 20 g/kg, Sodium Sulfate: Oral mouse LD50 = 5989 mg/kg, Sodium Thiosulfate: Oral rat LD50 > 8 g/kg

---

## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --  
No ecological data available for this product. Mobility in soil: No data available  
**Ingredient Ecological Information:** --  
No ecological data available for the ingredients of this product.

---

## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** None  
**Special Instructions (Disposal):** Dilute to 3 to 5 times the volume with cold water. Adjust to a pH between 6 and 9 with an acid, such as sulfuric or citric. Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system.  
**Empty Containers:** Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.  
**NOTICE (Disposal):** These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

---

## 14. TRANSPORT INFORMATION

**D.O.T.:**  
**D.O.T. Proper Shipping Name:** Not Currently Regulated  
--  
**DOT Hazard Class:** NA  
**DOT Subsidiary Risk:** NA  
**DOT ID Number:** NA  
**DOT Packing Group:** NA  
**I.C.A.O.:**

**I.C.A.O. Proper Shipping Name:** Not Currently Regulated

--

**ICAO Hazard Class:** NA

**ICAO Subsidiary Risk:** NA

**ICAO ID Number:** NA

**ICAO Packing Group:** NA

**I.M.O.:**

**I.M.O. Proper Shipping Name:** Not Currently Regulated

--

**I.M.O. Hazard Class:** NA

**I.M.O. Subsidiary Risk:** NA

**I.M.O. ID Number:** NA

**I.M.O. Packing Group:** NA

**Additional Information:** There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

---

## 15. REGULATORY INFORMATION

**U.S. Federal Regulations:**

**O.S.H.A.:** This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

**E.P.A.:**

**S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370):** Immediate (Acute) Health Hazard

**S.A.R.A. Title III Section 313 (40 CFR 372):** This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

--

**302 (EHS) TPQ (40 CFR 355):** Not applicable

**304 CERCLA RQ (40 CFR 302.4):** Not applicable

**304 EHS RQ (40 CFR 355):** Not applicable

**Clean Water Act (40 CFR 116.4):** Not applicable

**RCRA:** Contains no RCRA regulated substances.

**C.P.S.C.:** Not applicable

**State Regulations:**

**California Prop. 65:** No Prop. 65 listed chemicals are present in this product.

**Identification of Prop. 65 Ingredient(s):** None

**California Perchlorate Rule CCR Title 22 Chap 33:** Not applicable

**Trade Secret Registry:** Not applicable

**National Inventories:**

**U.S. Inventory Status:** All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710).

**TSCA CAS Number:** Not applicable

---

## 16. OTHER INFORMATION

**Intended Use:** Laboratory Reagent Titrant solution

**References:** 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Technical Judgment. In-house information. Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Association, 1991.

**Revision Summary:** Substantial revision to comply with EU Reg 1272/2008, Reg 1907/2006 and UN GHS (ST/SG/AC.10/36/Add.3).

---

### Legend:

NA - Not Applicable

ND - Not Determined

NV - Not Available

w/w - weight/weight

w/v - weight/volume

v/v - volume/volume

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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