

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>
5440002	2297255	Hach Company	ROWGHS	English	1
5440002	2263511	Hach Company	ROWGHS	English	1
5440002	2263411	Hach Company	ROWGHS	English	1
5440002	203832	Hach Company	ROWGHS	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: M01127

# SAFETY DATA SHEET

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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** DPD Compound for Free and Total Chlorine Analyzers

**Catalog Number:** 2297255

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:** M01127

**Chemical Name:** Confidential

**CAS Number:** Confidential

**Additional CAS No. (for hydrated forms):** Not applicable

**Chemical Formula:** Confidential

**Chemical Family:** Confidential

**Intended Use:** Laboratory Use

HMIRC Registry Number 8081 Granted: 12/02/24

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## 2. HAZARDS IDENTIFICATION

**GHS Classification:**

**Hazard categories:** Acute Toxicity: Acute Tox. 4-Orl Serious Eye Damage/Eye Irritation:Eye Irrit. 2 Hazardous to the Aquatic Environment: Aquatic Chronic 3

**GHS Label Elements:**

WARNING



**Hazard statements:** Harmful if swallowed. Causes serious eye irritation. Harmful to aquatic life with long lasting effects.

**Precautionary statements:** Wear protective gloves / protective clothing / eye protection / face protection. Do not eat, drink or smoke when using this product. Handle environmental release according to local, state, federal, provincial requirements. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. IF IN EYES: 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.

**HMIS:**

**Health:** 2

**Flammability:** 1

**Reactivity:** 0

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

**NFPA:**

**Health:** 2

**Flammability:** 1

**Reactivity:** 0

**Symbol:** Not applicable

**WHMIS Hazard Classification:** Class D, Division 2, Subdivision B - Toxic material (other toxic effects)

**WHMIS Symbols:** Other Toxic Effects

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### 3. COMPOSITION / INFORMATION ON INGREDIENTS

**Hazardous Components according to GHS:**

**Salt of N,N-Diethyl-p-Phenylenediamine**

**CAS Number:** Confidential

**Chemical Formula:** Confidential

**GHS Classification:** Acute Tox. 4, H302; Eye Irrit. 2, H319; Aquatic Chrn. 3, H412

**Percent Range (Trade Secret):** 100.0

**Percent Range Units:** weight / weight

**PEL:** 15 mg/m<sup>3</sup> as inhalable dust; 5 mg/m<sup>3</sup> as respirable dust

**TLV:** 10 mg/m<sup>3</sup> as inhalable dust; 3 mg/m<sup>3</sup> as respirable dust

HMIRC Registry Number 8081 Granted: 12/02/24

**WHMIS Symbols:** Other Toxic Effects

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### 4. FIRST AID MEASURES

**General Information:** In the event of exposure, show this Material Safety Data Sheet and label (where possible) to a doctor.

**Advice to doctor:** Treat symptomatically.

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

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

**Inhalation:** Remove to fresh air.

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

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### 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Dusts at sufficient concentrations can form explosive mixtures with air. Can burn in fire, releasing toxic vapors.

**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.

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

**Extinguishing Media NOT To Be Used:** Not applicable

**Fire / Explosion Hazards:** May react violently with: strong oxidizers

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

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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:** 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: any quantity is spilled. If conditions warrant, increase the size of the evacuation.

**DOT Emergency Response Guide Number:** Not applicable

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### 7. HANDLING AND STORAGE

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

**Storage:** Store between 10° and 25°C. Protect from: light moisture Keep away from: oxidizers

**Flammability Class:** Not applicable

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### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**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 In the EU, the selected gloves must satisfy the specifications of EU Directive 89/686/EEC and standard EN 374 derived from it. lab coat

**Inhalation Protection:** adequate ventilation

**Precautionary Measures:** Avoid contact with: eyes skin clothing Do not breathe: dust Wash thoroughly after handling.

Use with adequate ventilation. Keep away from: oxidizers

**TLV:** 10 mg/m<sup>3</sup> as inhalable dust; 3 mg/m<sup>3</sup> as respirable dust

**PEL:** 15 mg/m<sup>3</sup> as inhalable dust; 5 mg/m<sup>3</sup> as respirable dust

**For Occupational Exposure Limits (OEL) for ingredients, see section 3 - Composition/Information on Ingredients.:**

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** White powder

**Physical State:** Solid

**Molecular Weight:** Confidential

**Odor:** None

**Odor Threshold:** Not applicable

**pH:** 1.99 (5% sol'n)

**Metal Corrosivity:**

**Corrosivity Classification:** Not classified as corrosive to metals according to GHS criteria.

**Steel:** Not determined

**Aluminum:** Not determined

**Specific Gravity/ Relative Density (water = 1; air =1):** 1.226

**Viscosity:** Not applicable

**Solubility:**

**Water:** Completely soluble

**Acid:** Not determined

**Other:** Not determined

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

**Coefficient of Water / Oil:** Not applicable

**Melting Point:** 180°C (356°F)

**Decomposition Temperature:** Not available

**Boiling Point:** Not applicable

**Vapor Pressure:** Not applicable

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

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

**Volatile Organic Compounds Content:** Not applicable

**Flammable Properties:** Dusts at sufficient concentrations can form explosive mixtures with air. Can burn in fire, releasing toxic vapors.

**Flash Point:** Not applicable

**Method:** Not applicable

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Autoignition Temperature:** Not applicable

**Explosive Properties:**

Not applicable Not classified according to GHS criteria.

**Oxidizing Properties:**

Not classified according to GHS criteria.

**Reactivity Properties:**

Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.

**Gas under Pressure:**

Not classified according to GHS criteria.

Not classified as gas under pressure according to GHS.

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## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.  
**Mechanical Impact:** None reported  
**Static Discharge:** None reported.  
**Reactivity / Incompatibility:** Incompatible with: oxidizers  
**Hazardous Decomposition:** Toxic fumes of: nitrogen oxides  
**Conditions to Avoid:** Extreme temperatures Excess moisture Exposure to light.

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## 11. TOXICOLOGICAL INFORMATION

**Toxicokinetics, Metabolism and Distribution:** No information available  
**Toxicologically Synergistic Products:** None reported  
**Acute Toxicity:** Route Data Given Below  
Oral rat (female) LD50 = 695 mg/kg; oral rat (male and female) LD50 = 970 mg/kg.  
**Specific Target Organ Toxicity - Single Exposure (STOT-SE):** Based on classification principles, the classification criteria are not met.  
**Specific Target Organ Toxicity - Repeat Exposure (STOT-RE):** Based on classification principles, the classification criteria are not met.  
**Skin Corrosion/Irritation:** Based on classification principles, the classification criteria are not met.  
**Eye Damage:** Test data follows.  
Reversible conjunctivitis was reported in animal studies.  
**Sensitization:** Based on classification principles, the classification criteria are not met.  
**CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction):** No germ cell mutagenicity, carcinogenicity or reproductive toxicity data found.  
IARC Listed: No  
NTP Listed: No  
O.S.H.A. Listed: No  
**Symptoms/Effects:**  
**Ingestion:** DPD LD50 studies revealed decreased locomotor activity, depressed respiration, muscle spasms, loss of righting reflex and death. Autopsies revealed ulcerated stomach, enteritis, gas and congested lungs.  
**Inhalation:** May cause: respiratory tract irritation  
**Skin Absorption:** No effects anticipated  
**Chronic Effects:** DPD may cause allergic skin reactions in some people causing severe skin rashes and itching. Not determined  
**Medical Conditions Aggravated:** Allergy or sensitivity to salts of N,N-Diethyl-p-phenylenediamine

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## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** Daphnia magna EC50 at 48 hrs: 10.8: NOEC 12.5 mg/L at 24 hrs, 3.1 mg/L at 48 hrs;  
Ready Biodegradability To 60% in 21 days  
Mobility in soil: No data available  
When compounds is added to Indicator Solution, aquatic hazard endpoint is not reached. No aquatic classification when used as directed.  
**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 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. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

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## 14. TRANSPORT INFORMATION

**D.O.T.:**

**D.O.T. Proper Shipping Name:** Not Currently Regulated

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**Hazard Class:** NA  
**Subsidiary Risk:** NA  
**ID Number:** NA  
**Packing Group:** NA

**T.D.G.:**

**Proper Shipping Name:** Not Currently Regulated

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**Hazard Class:** NA  
**Subsidiary Risk:** NA  
**UN Number/PIN:** NA  
**Packing Group:** NA

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

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

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**Hazard Class:** NA  
**Subsidiary Risk:** NA  
**ID Number:** NA  
**Packing Group:** NA

**I.M.O.:**

**Proper Shipping Name:** Not Currently Regulated

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**Hazard Class:** NA  
**Subsidiary Risk:** NA  
**ID Number:** NA  
**Packing Group:** NA

**Marine Pollutant:**

**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 does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

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**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.

**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:** This product is registered as a trade secret in the state of Massachusetts. This product is registered as a trade secret in the state of Illinois. This product complies with Pennsylvania Trade Secret Regulations. New Jersey Trade Secret Registry Number 80100131-5002 (DPD Salt) New York Trade Secret Registry Number 478 (DPD Salt) This product is registered as a trade secret in the state of New York.

**National Inventories:**

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

**CAS Number:** Confidential

**Canadian Inventory Status:** DSL Listed: Yes

**EEC Inventory Status:** EINECS / ELINCS Listed: No

*Australian Inventory (AICS) Status:* Exempt. Annual Report Required.  
*New Zealand Inventory (NZIoC) Status:* Listed  
*Korean Inventory (KECI) Status:* Not listed - exempt. Quantity < 100 kg per annum.  
*Japan (ENCS) Inventory Status:* Not Listed - Exempt.  
*China (PRC) Inventory (MEP) Status:* All components either listed or exempt.

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## 16. OTHER INFORMATION

**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. IARC Monographs on the Evaluation of the Carcinogenic Risks to Humans. World Health Organization (Volumes 1-42) Supplement 7. France: 1987. In-house information. 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. Sixth Annual Report on Carcinogens, 1991. U.S. Department of Health and Human Services. Rockville, MD: Technical Resources, Inc. 1991. Technical Judgment. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992.

**Complete Text of H phrases referred to in Section 3:** H302 Harmful if swallowed. H319 Causes serious eye irritation. H412 Harmful to aquatic life with long lasting effects.

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

**Date of MSDS Preparation:**

**Day:** 29

**Month:** April

**Year:** 2014

**MSDS Prepared:** MSDS prepared by Product Compliance Department extension 3350

**CCOHS Evaluation Note:** It is offered under the interim policy that was established by Health Canada permitting use of GHS-formatted safety data sheets in Canada prior to revision of CPR to GHS. This product has been classified and labeled in accordance with the requirements of 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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Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

MSDS No: M00470

# SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Total Chlorine Buffer Solution  
**Catalog Number:** 2263511

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:** M00470  
**Chemical Name:** Not applicable  
**CAS Number:** Not applicable  
**Additional CAS No. (for hydrated forms):** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Not applicable  
**Intended Use:** Buffer

## 2. HAZARDS IDENTIFICATION

**GHS Classification:**

**Hazard categories:** Corrosive to Metals: Met. Corr. 1 . Skin Corrosion/Irritation: Skin Corr. 1A Hazardous to the Aquatic Environment: Aquatic Chronic 3

**GHS Label Elements:**

DANGER



**Hazard statements:** May be corrosive to metals. . Causes severe skin burns and eye damage. Harmful to aquatic life with long lasting effects.

**Precautionary statements:** Keep only in original container. Do not breathe dust/fume/gas/mist/vapours/spray. Handle environmental release according to local, state, federal, provincial requirements. Wear protective gloves / protective clothing / eye protection / face protection. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove victim/person to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. Absorb spillage to prevent material damage. Store in a well-ventilated place, locked up. Wash contaminated clothing before reuse.

**HMIS:**

**Health:** 3

**Flammability:** 0

**Reactivity:** 0

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

**NFPA:**

**Health:** 3

**Flammability:** 0

**Reactivity:** 0

**Symbol:** Not applicable



**WHMIS Hazard Classification:** Class E - Corrosive material Class D, Division 2, Subdivision A - Very toxic materials (other toxic effects)

**WHMIS Symbols:** Corrosive Other Toxic Effects

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### 3. COMPOSITION / INFORMATION ON INGREDIENTS

*Hazardous Components according to GHS:*

**Potassium Iodide**

**CAS Number:** 7681-11-0

**Chemical Formula:** KI

**GHS Classification:** Acute Tox 5 -Orl, H303; Skin Irr. 2, H315; Eye Irr. 2A, H319

**Percent Range (Trade Secret):** < 10.0

**Percent Range Units:** weight / weight

**PEL:** 15 mg/m<sup>3</sup> as total dust; 5 mg/m<sup>3</sup> as respirable dust

**TLV:** 10 mg/m<sup>3</sup> as inhalable dust; 3 mg/m<sup>3</sup> as respirable dust

**WHMIS Symbols:** Other Toxic Effects

**Sodium Hydroxide**

**CAS Number:** 1310-73-2

**Chemical Formula:** NaOH

**GHS Classification:** Met. Corr.1, H290; Skin Corr. 1A, H314; Aquatic Acute 3, H402

**Percent Range (Trade Secret):** 1.0 - 5.0

**Percent Range Units:** weight / weight

**PEL:** 2 mg/m<sup>3</sup>

**TLV:** Not established

**WHMIS Symbols:** Acute PoisonCorrosive

**Decyl (sulfophenoxy) benzenesulfonic Acid, Disodium Salt**

**CAS Number:** 36445-71-3

**Chemical Formula:** C<sub>22</sub>H<sub>28</sub>Na<sub>2</sub>O<sub>7</sub>S<sub>2</sub>

**GHS Classification:** Acute Tox. Orl. 4, H302; Acute Tox. Derm. 4, H312; Skin Irrit. 2, H315; Eye Dam. 1, H318; STOT Single 3, H335, H336; Aquatic Chronic 2, H411

**Percent Range (Trade Secret):** < 0.5

**Percent Range Units:** weight / weight

**PEL:** Not established

**TLV:** Not established

**WHMIS Symbols:** Not applicable

**Oxybis(decylbenzenesulfonic Acid), Disodium Salt**

**CAS Number:** 70146-13-3

**Chemical Formula:** C<sub>32</sub>H<sub>48</sub>Na<sub>2</sub>O<sub>7</sub>S<sub>2</sub>

**GHS Classification:** Eye Dam. 1, H318; Aquatic Chronic 1, H410

**Percent Range (Trade Secret):** < 0.1

**Percent Range Units:** weight / weight

**PEL:** Not established

**TLV:** Not established

**WHMIS Symbols:** Not applicable

**EDTA Tetrasodium Salt**

**CAS Number:** 64-02-8

**Chemical Formula:** C<sub>10</sub>H<sub>12</sub>N<sub>2</sub>Na<sub>4</sub>O<sub>8</sub> 2H<sub>2</sub>O

**GHS Classification:** Acute Tox. 4-Orl, H302; Eye Dam. 1, H318

**Percent Range (Trade Secret):** < 0.2

**Percent Range Units:** weight / weight

**PEL:** 15 mg/m<sup>3</sup> as total dust; 5 mg/m<sup>3</sup> as respirable dust

**TLV:** 10 mg/m<sup>3</sup> as inhalable dust; 3 mg/m<sup>3</sup> as respirable dust

**WHMIS Symbols:** Other Toxic Effects  
**Hazardous Components according to GHS:** No

**Demineralized Water**

**CAS Number:** 7732-18-5  
**Chemical Formula:** H<sub>2</sub>O  
**GHS Classification:** Not a dangerous substance according to GHS.  
**Percent Range (Trade Secret):** 60.0 - 70.0  
**Percent Range Units:** weight / weight  
**PEL:** Not established  
**TLV:** Not established

**WHMIS Symbols:** Not applicable

**Sodium Citrate**

**CAS Number:** 68-04-2  
**Chemical Formula:** C<sub>6</sub>H<sub>5</sub>O<sub>7</sub>Na<sub>3</sub> · 2H<sub>2</sub>O  
**GHS Classification:** Not applicable  
**Percent Range (Trade Secret):** 15.0 - 25.0  
**Percent Range Units:** weight / weight  
**PEL:** 15 mg/m<sup>3</sup> as inhalable dust; 5 mg/m<sup>3</sup> as respirable dust  
**TLV:** 10 mg/m<sup>3</sup> as inhalable dust; 3 mg/m<sup>3</sup> as respirable dust

**WHMIS Symbols:** Not applicable

**Sodium Sulfate**

**CAS Number:** 7757-82-6  
**Chemical Formula:** Na<sub>2</sub>SO<sub>4</sub>  
**GHS Classification:** Aquatic Acute 3, H402  
**Percent Range (Trade Secret):** < 0.1  
**Percent Range Units:** weight / weight  
**PEL:** 15 mg/m<sup>3</sup> as inhalable dust; 5 mg/m<sup>3</sup> as respirable dust  
**TLV:** 10 mg/m<sup>3</sup> as inhalable dust; 3 mg/m<sup>3</sup> as respirable dust

**WHMIS Symbols:** Not applicable

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#### 4. FIRST AID MEASURES

**General Information:** In the event of exposure, show this Material Safety Data Sheet and label (where possible) to a doctor.

**Advice to doctor:** Treat symptomatically.

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

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

**Inhalation:** Remove to fresh air.

**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.

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#### 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Can burn in fire, releasing toxic vapors.

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

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

**Extinguishing Media NOT To Be Used:** Not applicable

**Fire / Explosion Hazards:** None reported

**Hazardous Combustion Products:** Toxic fumes of: iodine compounds carbon monoxide, carbon dioxide.

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

**Clean-up Technique:** If permitted by regulation, Cover spilled material with a dry acid, such as citric or boric. Scoop up slurry into a large beaker. Dilute with a large excess of water. Adjust to a pH between 6 and 9 with an acid, such as sulfuric or citric. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a weak acid solution. Otherwise, Pick up spill for disposal and place in a closed container. Dispose of in accordance with local, state and federal regulations or laws.

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

**DOT Emergency Response Guide Number:** 154

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## 7. HANDLING AND STORAGE

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

**Storage:** Keep away from: acids Protect from: heat

**Flammability Class:** Not applicable

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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

**Personal Protective Equipment:**

**Eye Protection:** chemical splash goggles

**Skin Protection:** disposable latex gloves In the EU, the selected gloves must satisfy the specifications of EU Directive 89/686/EEC and standard EN 374 derived from it. lab coat

**Inhalation Protection:** adequate ventilation

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

**TLV:** Not established

**PEL:** Not established

**For Occupational Exposure Limits (OEL) for ingredients, see section 3 - Composition/Information on Ingredients.:**

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Clear, colorless liquid

**Physical State:** Liquid

**Molecular Weight:** Not applicable

**Odor:** None

**Odor Threshold:** Odorless

**pH:** 11.9

**Metal Corrosivity:**

**Corrosivity Classification:** Classified as corrosive to metals.

**Steel:** 0.010 in/yr

**Aluminum:** 29.71 in/yr

**Specific Gravity/ Relative Density (water = 1; air =1):** 1.246

**Viscosity:** Not applicable

**Solubility:**

**Water:** Miscible

**Acid:** Miscible

**Other:** Not determined

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

**Coefficient of Water / Oil:** Not applicable

**Melting Point:** Not available

**Decomposition Temperature:** Not applicable

**Boiling Point:** 106°C; 223°F

**Vapor Pressure:** Not available

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

**Evaporation Rate (water = 1):** 0.605

**Volatile Organic Compounds Content:** Not available

**Flammable Properties:** Can burn in fire, releasing toxic vapors.

**Flash Point:** Not applicable

**Method:** Not applicable

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Autoignition Temperature:** Not available

**Explosive Properties:**

Not classified according to GHS criteria.

**Oxidizing Properties:**

Not classified according to GHS criteria.

**Reactivity Properties:**

Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.

**Gas under Pressure:**

Not classified according to GHS criteria.

Not applicable

---

## 10. STABILITY AND REACTIVITY

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

**Mechanical Impact:** None reported

**Static Discharge:** None reported.

**Reactivity / Incompatibility:** Incompatible with: acids oxidizers

**Hazardous Decomposition:** Heating to decomposition releases toxic and/or corrosive fumes of: sodium oxides iodine compounds

**Conditions to Avoid:** Heat

---

## 11. TOXICOLOGICAL INFORMATION

**Toxicokinetics, Metabolism and Distribution:** No information available for mixture.

**Toxicologically Synergistic Products:** None reported

**Acute Toxicity:** Acute Toxicity Estimate (ATE) - Calculated from Ingredient Toxicity Data

**Specific Target Organ Toxicity - Single Exposure (STOT-SE):** Based on classification principles, the classification criteria are not met.

**Specific Target Organ Toxicity - Repeat Exposure (STOT-RE):** Based on classification principles, the classification criteria are not met.

**Skin Corrosion/Irritation:** Corrosive to skin.

**Eye Damage:** Corrosive to eyes.

**Sensitization:** Based on classification principles, the classification criteria are not met.

**CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction):** No germ cell mutagenicity, carcinogenicity or reproductive toxicity data found.

This product does NOT contain any IARC listed chemicals.

This product does NOT contain any NTP listed chemicals.

This product does NOT contain any OSHA listed carcinogens.

**Symptoms/Effects:**

**Ingestion:** Can cause: burns of the mouth and esophagus nausea vomiting abdominal pain Toxic

**Inhalation:** May cause: respiratory tract irritation

**Skin Absorption:** None Reported

**Chronic Effects:** Iodines overdose, 'iodism', may cause skin rash, runny nose, headaches, fever and bronchitis.

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

---

## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:**

No ecological data available for this product.

**Ingredient Ecological Information:**

## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** D002

**Special Instructions (Disposal):** Work in an approved fume hood. 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. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

---

## 14. TRANSPORT INFORMATION

**D.O.T.:**

**D.O.T. Proper Shipping Name:** Sodium Hydroxide Solution

--

**Hazard Class:** 8

**Subsidiary Risk:** NA

**ID Number:** UN1824

**Packing Group:** II

**T.D.G.:**

**Proper Shipping Name:** Sodium Hydroxide Solution

--

**Hazard Class:** 8

**Subsidiary Risk:** NA

**UN Number/PIN:** 1824

**Packing Group:** II

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

**I.C.A.O. Proper Shipping Name:** Sodium Hydroxide Solution

--

**Hazard Class:** 8

**Subsidiary Risk:** NA

**ID Number:** UN1824

**Packing Group:** II

**I.M.O.:**

**Proper Shipping Name:** Sodium Hydroxide Solution

--

**Hazard Class:** 8

**Subsidiary Risk:** NA

**ID Number:** UN1824

**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.

---

## 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):** Sodium Hydroxide 1000 lbs.

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

**Clean Water Act (40 CFR 116.4):** Sodium Hydroxide - RQ = 1000 lbs. (454 kgs.)

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

**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).

**CAS Number:** Not applicable

**Canadian Inventory Status:** All ingredients of this product are DSL Listed.

**EEC Inventory Status:** All ingredients used to make this product are listed on EINECS / ELINCS.

**Australian Inventory (AICS) Status:** Not determined

**New Zealand Inventory (NZIoC) Status:** Not determined

**Korean Inventory (KECI) Status:** Not determined

**Japan (ENCs) Inventory Status:** Not determined

**China (PRC) Inventory (MEP) Status:** Not determined

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## 16. OTHER INFORMATION

**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. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. Technical Judgment. In-house information. Gosselin, R. E. et al. Clinical Toxicology of Commercial Products, 5th Ed. Baltimore: The Williams and Wilkins Co., 1984.

**Complete Text of H phrases referred to in Section 3:** H290 May be corrosive to metals. H314 Causes severe skin burns and eye damage. H412 Harmful to aquatic life with long lasting effects.

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

**Date of MSDS Preparation:**

**Day:** 30

**Month:** May

**Year:** 2015

**MSDS Prepared:** MSDS prepared by Product Compliance Department extension 3350

**CCOHS Evaluation Note:** This product has been classified and labeled in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3). It is offered under exemption from WHMIS labeling as specified in the Controlled Products Regulation (CPR) Section 17. It is offered under the interim policy that was established by Health Canada permitting use of GHS-formatted safety data sheets in Canada prior to revision of CPR to GHS. This SDS has been prepared in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3).

---

**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: M00469

# SAFETY DATA SHEET

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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Total Chlorine Indicator  
**Catalog Number:** 2263411

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:** M00469  
**Chemical Name:** Not applicable  
**CAS Number:** Not applicable  
**Additional CAS No. (for hydrated forms):** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Not applicable  
**Intended Use:** Laboratory Use Total chlorine analyzer reagent

---

## 2. HAZARDS IDENTIFICATION

**GHS Classification:**

**Hazard categories:** Corrosive to Metals: Met. Corr. 1 Skin Corrosion/Irritation: Skin Irrit. 2 Serious Eye Damage/Eye Irritation: Eye Dam. 1

**GHS Label Elements:**

DANGER



**Hazard statements:** May be corrosive to metals. Causes skin irritation. Causes serious eye damage.

**Precautionary statements:** 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. Immediately call a POISON CENTER or doctor/physician. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. Absorb spillage to prevent material damage.

**HMIS:**

**Health:** 3

**Flammability:** 0

**Reactivity:** 0

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

**NFPA:**

**Health:** 3

**Flammability:** 0

**Reactivity:** 0

**Symbol:** Not applicable

**WHMIS Hazard Classification:** Class E - Corrosive material Class D, Division 2, Subdivision A - Very toxic materials (other toxic effects)

**WHMIS Symbols:** Corrosive Other Toxic Effects

---

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

#### *Hazardous Components according to GHS:*

##### Sulfuric Acid

*CAS Number:* 7664-93-9

*Chemical Formula:* H<sub>2</sub>SO<sub>4</sub>

*GHS Classification:* Met. Corr. 1 H290; Skin Corr. 1A, H314; Aquatic Acute 3, H402

*Percent Range (Trade Secret):* 5.0 - 15.0

*Percent Range Units:* weight / volume

*PEL:* 1 mg/m<sup>3</sup>

*TLV:* 1 mg/m<sup>3</sup>

*WHMIS Symbols:* Acute Poison Corrosive

#### *Hazardous Components according to GHS: No*

##### Demineralized Water

*CAS Number:* 7732-18-5

*Chemical Formula:* H<sub>2</sub>O

*GHS Classification:* Not a dangerous substance according to GHS.

*Percent Range (Trade Secret):* 85.0 - 95.0

*Percent Range Units:* volume / volume

*PEL:* Not established

*TLV:* Not established

*WHMIS Symbols:* Not applicable

---

### 4. FIRST AID MEASURES

*General Information:* In the event of exposure, show this Material Safety Data Sheet and label (where possible) to a doctor.

*Advice to doctor:* Treat symptomatically.

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

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

*Inhalation:* Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen. Call physician.

*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.

---

### 5. FIRE FIGHTING MEASURES

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

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

*Extinguishing Media:* Dry chemical.

*Extinguishing Media NOT To Be Used:* Not applicable

*Fire / Explosion Hazards:* May react violently with: oxidizers reducers

*Hazardous Combustion Products:* May emit toxic and corrosive fumes.

---

### 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:* If permitted by regulation, Cover spilled material with an alkali, such as soda ash or sodium bicarbonate. Scoop up slurry into a large beaker. Dilute with a large excess of 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. Otherwise, Pick up spill for disposal and place in a closed container. Dispose of in accordance with local, state and federal regulations or laws.  
**Evacuation Procedure:** Evacuate general area (50 foot radius or as directed by your facility's emergency response plan) when: any quantity is spilled. If conditions warrant, increase the size of the evacuation.  
**DOT Emergency Response Guide Number:** 154

---

## 7. HANDLING AND STORAGE

**Handling:** Avoid contact with eyes. Do not breathe mist or vapors. Use with adequate ventilation. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.  
**Storage:** Store away from: reducers alkalies. Protect from: heat. Store between 10° and 25°C.  
**Flammability Class:** Not applicable

---

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering Controls:** Use general ventilation to minimize exposure to mist, vapor or dust. Maintain general industrial hygiene practices when using this product.  
**Personal Protective Equipment:**  
**Eye Protection:** chemical splash goggles  
**Skin Protection:** lab coat disposable latex gloves. In the EU, the selected gloves must satisfy the specifications of EU Directive 89/686/EEC and standard EN 374 derived from it.  
**Inhalation Protection:** adequate ventilation  
**Precautionary Measures:** Avoid contact with: eyes skin. Do not breathe: mist/vapor. Use with adequate ventilation. Wash thoroughly after handling. Protect from: heat. Keep away from: oxidizers reducers  
**TLV:** Not established  
**PEL:** Not established  
**For Occupational Exposure Limits (OEL) for ingredients, see section 3 - Composition/Information on Ingredients.:**

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Clear, colorless liquid  
**Physical State:** Liquid  
**Molecular Weight:** Not applicable  
**Odor:** None  
**Odor Threshold:** Not established  
**pH:** < 0.5  
**Metal Corrosivity:**  
**Corrosivity Classification:** Classified as corrosive to metals.  
**Steel:** 0.7725  
**Aluminum:** 0.290  
**Specific Gravity/ Relative Density (water = 1; air = 1):** 1.056  
**Viscosity:** Not applicable  
**Solubility:**  
**Water:** Soluble  
**Acid:** Soluble  
**Other:** Not determined  
**Partition Coefficient (n-octanol / water):** Not applicable  
**Coefficient of Water / Oil:** Not applicable  
**Melting Point:** Not determined  
**Decomposition Temperature:** Not applicable  
**Boiling Point:** 100°C (212°F)  
**Vapor Pressure:** Not determined  
**Vapor Density (air = 1):** Not determined  
**Evaporation Rate (water = 1):** 0.811  
**Volatile Organic Compounds Content:** None  
**Flammable Properties:** During a fire, this product decomposes to form toxic gases.  
**Flash Point:** Not applicable  
**Method:** Not applicable  
**Flammability Limits:**  
**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Autoignition Temperature:** Not applicable

**Explosive Properties:**

Not classified according to GHS criteria.

**Oxidizing Properties:**

Not classified according to GHS criteria.

**Reactivity Properties:**

Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.

**Gas under Pressure:**

Not classified according to GHS criteria.

---

## 10. STABILITY AND REACTIVITY

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

**Mechanical Impact:** None reported

**Static Discharge:** None reported.

**Reactivity / Incompatibility:** Incompatible with: reducers alkalies oxidizers

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

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

---

## 11. TOXICOLOGICAL INFORMATION

**Toxicokinetics, Metabolism and Distribution:** No information available for mixture.

**Toxicologically Synergistic Products:** None reported

**Acute Toxicity:** Acute Toxicity Estimate (ATE) - Calculated from Ingredient Toxicity Data

ATE Oral rat LD50 = 19 455 mg/kg.

ATE Inhalation rat LC50 = 790 mg/L.

**Specific Target Organ Toxicity - Single Exposure (STOT-SE):** Based on classification principles, the classification criteria are not met.

**Specific Target Organ Toxicity - Repeat Exposure (STOT-RE):** Based on classification principles, the classification criteria are not met.

**Skin Corrosion/Irritation:** Irritating to skin.

Skin testing of a 14% sulfuric acid solution results: Very slight erythema after 3 minute, 1 hour and 4 hour exposure. Not corrosive, not irritating

**Eye Damage:** Corrosive to eyes.

**Sensitization:** Based on classification principles, the classification criteria are not met.

**CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction):** Based on classification principles, the classification criteria are not met.

An ingredient of this mixture is: IARC Group 1: Recognized Carcinogen

Sulfuric Acid - The IARC evaluation was based on exposure to the mist or vapor of concentrated sulfuric acid generated during chemical processes.

This product does NOT contain any NTP listed chemicals.

This product does NOT contain any OSHA listed carcinogens.

**Symptoms/Effects:**

**Ingestion:** Causes: burns of the mouth and esophagus May cause: circulatory disturbances diarrhea nausea vomiting rapid pulse and respirations

**Inhalation:** May cause: irritation of nose and throat teeth erosion mouth soreness difficult breathing

**Skin Absorption:** Not applicable

**Chronic Effects:** Chronic overexposure may cause erosion of the teeth chronic irritation or inflammation of the lungs cancer

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

---

## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --

No ecological data available for this product.

**Ingredient Ecological Information:** Sulfuric Acid: The 48-Hour TLm in flounder is 100-300 ppm.

---

## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** D002

**Special Instructions (Disposal):** Work in an approved fume hood. Dilute material with excess water making a weaker than 5% solution. 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. 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. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

---

## 14. TRANSPORT INFORMATION

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

**D.O.T. Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, N.O.S.  
(<15% Sulphuric Acid in Solution)

**Hazard Class:** 8

**Subsidiary Risk:** NA

**ID Number:** UN3264

**Packing Group:** III

### **T.D.G.:**

**Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, N.O.S.  
(<15% Sulphuric Acid in Solution)

**Hazard Class:** 8

**Subsidiary Risk:** NA

**UN Number/PIN:** 3264

**Packing Group:** III

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

**I.C.A.O. Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, N.O.S.  
(<15% Sulphuric Acid in Solution)

**Hazard Class:** 8

**Subsidiary Risk:** NA

**ID Number:** UN3264

**Packing Group:** III

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

**Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, N.O.S.  
(<15% Sulphuric Acid in Solution)

**Hazard Class:** 8

**Subsidiary Risk:** NA

**ID Number:** UN3264

**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 Delayed (Chronic) 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):** Sulfuric Acid 1000 lbs.

**304 CERCLA RQ (40 CFR 302.4):** Sulfuric Acid 1000 lbs.

**304 EHS RQ (40 CFR 355):** Sulfuric Acid - RQ 1000 lbs.

**Clean Water Act (40 CFR 116.4):** Sulfuric acid - RQ 1000 lbs.

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

**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).

**CAS Number:** Not applicable

**Canadian Inventory Status:** All ingredients of this product are DSL Listed.

**EEC Inventory Status:** All ingredients used to make this product are listed on EINECS / ELINCS.

**Australian Inventory (AICS) Status:** All ingredients are listed.

**New Zealand Inventory (NZIoC) Status:** All components either listed or exempt.

**Korean Inventory (KECI) Status:** All components of this product are either listed, listed as the anhydrous compound or exempt.

**Japan (ENCs) Inventory Status:** All components either listed or exempt.

**China (PRC) Inventory (MEP) Status:** All components either listed or exempt.

---

## 16. OTHER INFORMATION

**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. In-house information. Technical Judgment. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. IARC Monographs on the Evaluation of the Carcinogenic Risks to Humans. World Health Organization (Volumes 1-42) Supplement 7. France: 1987.

**Complete Text of H phrases referred to in Section 3:** H290 May be corrosive to metals. H315 Causes skin irritation. H319 Causes serious eye irritation.

**Revision Summary:** . . . Substantial revision to comply with EU Reg 1272/2008, Reg 1907/2006 and UN GHS (ST/SG/AC.10/36/Add.3). Updates in Section(s) 2,

**Date of MSDS Preparation:**

**Day:** 03

**Month:** July

**Year:** 2014

**MSDS Prepared:** MSDS prepared by Product Compliance Department extension 3350

**CCOHS Evaluation Note:** This product has been classified and labeled in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3). It is offered under exemption from WHMIS labeling as specified in the Controlled Products Regulation (CPR) Section 17. It is offered under the interim policy that was established by Health Canada permitting use of GHS-formatted safety data sheets in Canada prior to revision of CPR to GHS. This SDS has been prepared in accordance with the requirements of 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.**

**HACH COMPANY ©2015**

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

MSDS No: M00471

# SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Sulfuric Acid Solution 19.2 N  
**Catalog Number:** 203832

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:** M00471  
**Chemical Name:** Not applicable  
**CAS Number:** Not applicable  
**Additional CAS No. (for hydrated forms):** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Not applicable  
**Intended Use:** Standard solution Laboratory Use

## 2. HAZARDS IDENTIFICATION

**GHS Classification:**

**Hazard categories:** Corrosive to Metals: Met. Corr. 1 Skin Corrosion/Irritation: Skin Corr. 1A Serious Eye Damage/Eye Irritation: Eye Dam. 1 .

**GHS Label Elements:**

DANGER



**Hazard statements:** Causes serious eye damage. . Causes severe skin burns and eye damage. May be corrosive to metals.

**Precautionary statements:** Keep only in original container. Wear eye protection. 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. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage. Do not breathe dust/fume/gas/mist/vapours/spray. Handle environmental release according to local, state, federal, provincial requirements. Wear protective gloves / protective clothing / eye protection / face protection. IF INHALED: Remove victim/person to fresh air and keep at rest in a position comfortable for breathing. Dispose of contents/container according to state, local, federal or national regulations.

**HMIS:**

**Health:** 3

**Flammability:** 0

**Reactivity:** 2

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

**NFPA:**

**Health:** 3

**Flammability:** 0

**Reactivity:** 2

**Symbol:** Water Reactive

**WHMIS Hazard Classification:** Class D, Division 1, Subdivision A - Very toxic materials (immediate effects) Class E - Corrosive material Class D, Division 2, Subdivision A - Very toxic materials (other toxic effects)

**WHMIS Symbols:** Acute Poison Corrosive

---

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

**Hazardous Components according to GHS:**

**Sulfuric Acid**

**CAS Number:** 7664-93-9

**Chemical Formula:** H<sub>2</sub>SO<sub>4</sub>

**GHS Classification:** Met. Corr. 1 H290; Skin Corr. 1A, H314; Aquatic Acute 3, H402

**Percent Range (Trade Secret):** 40.0 - 50.0

**Percent Range Units:** weight / weight

**PEL:** 1 mg/m<sup>3</sup>

**TLV:** 1 mg/m<sup>3</sup>

**WHMIS Symbols:** Acute Poison Corrosive

**Hazardous Components according to GHS:** No

**Demineralized Water**

**CAS Number:** 7732-18-5

**Chemical Formula:** H<sub>2</sub>O

**GHS Classification:** Not a dangerous substance according to GHS.

**Percent Range (Trade Secret):** 50.0 - 60.0

**Percent Range Units:** weight / weight

**PEL:** Not established

**TLV:** Not established

**WHMIS Symbols:** Not applicable

---

### 4. FIRST AID MEASURES

**General Information:** In the event of exposure, show this Material Safety Data Sheet and label (where possible) to a doctor.

**Advice to doctor:** Treat symptomatically.

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

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

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen. Call physician.

**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.

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### 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Not Flammable, but reacts with most metals to form flammable hydrogen gas. During a fire, corrosive and toxic gases may be generated by thermal decomposition.

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

**Extinguishing Media:** Dry chemical. Do NOT use water.

**Extinguishing Media NOT To Be Used:** Not applicable Do NOT use water.

**Fire / Explosion Hazards:** May react violently with: strong acids strong bases alkali metals metal nitrates oxidizers reducers

**Hazardous Combustion Products:** May emit toxic and corrosive fumes.

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

**Clean-up Technique:** If permitted by regulation, Cover spilled material with an alkali, such as soda ash or sodium bicarbonate. Scoop up slurry into a large beaker. Dilute with a large excess of water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Otherwise, Dispose of in accordance with local, state and federal regulations or laws. 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 any quantity is spilled. If conditions warrant, increase the size of the evacuation.

**DOT Emergency Response Guide Number:** 137

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## 7. HANDLING AND STORAGE

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

**Storage:** Store away from: alkalis oxidizers reducers metals Keep container tightly closed when not in use.

**Flammability Class:** Not applicable

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**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:** neoprene latex gloves lab coat

**Inhalation Protection:** laboratory fume hood

**Precautionary Measures:** Avoid contact with: eyes skin clothing Do not breathe: mist/vapor Wash thoroughly after handling. Use with adequate ventilation. Protect from: heat

**TLV:** Not established

**PEL:** Not established

**For Occupational Exposure Limits (OEL) for ingredients, see section 3 - Composition/Information on Ingredients.:**

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Clear, colorless liquid

**Physical State:** Liquid

**Molecular Weight:** Not applicable

**Odor:** Acidic

**Odor Threshold:** Not determined

**pH:** <0.5

**Metal Corrosivity:**

**Corrosivity Classification:** Classified as corrosive to metals.

**Steel:** 0.70 in/yr

**Aluminum:** 0.50 in/yr

**Specific Gravity/ Relative Density (water = 1; air =1):** 1.535

**Viscosity:** Not determined

**Solubility:**

**Water:** Soluble

**Acid:** Soluble

**Other:** Not determined

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

**Coefficient of Water / Oil:** Not applicable

**Melting Point:** Not determined

**Decomposition Temperature:** Not available

**Boiling Point:** Not determined

**Vapor Pressure:** Not determined

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

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

**Volatile Organic Compounds Content:** Not applicable

**Flammable Properties:** Not Flammable, but reacts with most metals to form flammable hydrogen gas. 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 applicable

**Explosive Properties:**

Not classified according to GHS criteria.

**Oxidizing Properties:**

Not classified according to GHS criteria.

**Reactivity Properties:**

Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.

**Gas under Pressure:**

Not classified according to GHS criteria.

Not applicable

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## 10. STABILITY AND REACTIVITY

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

**Mechanical Impact:** None reported

**Static Discharge:** None reported.

**Reactivity / Incompatibility:** May react violently in contact with: alkalis oxidizers reducers Incompatible with: metals

**Hazardous Decomposition:** Contact with metals may release flammable hydrogen gas. Heating to decomposition releases toxic and/or corrosive fumes of: sulfur oxides

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

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## 11. TOXICOLOGICAL INFORMATION

**Toxicokinetics, Metabolism and Distribution:** No information available for mixture.

**Toxicologically Synergistic Products:** None reported

**Acute Toxicity:** Based on classification principles, the classification criteria are not met.

**Specific Target Organ Toxicity - Single Exposure (STOT-SE):** Based on classification principles, the classification criteria are not met.

**Specific Target Organ Toxicity - Repeat Exposure (STOT-RE):** Based on classification principles, the classification criteria are not met.

**Skin Corrosion/Irritation:** Corrosive to skin.

>= 10% judged corrosive

**Eye Damage:** Corrosive to eyes.

>= 10% evidence of corrosive to eyes

**Sensitization:** Based on classification principles, the classification criteria are not met.

**CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction):** No germ cell mutagenicity, carcinogenicity or reproductive toxicity data found. Based on classification principles, the classification criteria are not met.

An ingredient of this mixture is: IARC Group 1: Recognized Carcinogen

Sulfuric Acid - The IARC evaluation was based on exposure to the mist or vapor of concentrated sulfuric acid generated during chemical processes.

This product does NOT contain any NTP listed chemicals.

This product does NOT contain any OSHA listed carcinogens.

**Symptoms/Effects:**

**Ingestion:** Causes: severe burns May cause: nausea Very large doses may cause: ulceration of the digestive tract

**Inhalation:** Causes: severe burns May cause: teeth erosion mouth soreness difficult breathing

**Skin Absorption:** None Reported

**Chronic Effects:** Chronic overexposure may cause chronic irritation or inflammation of the lungs erosion of the teeth cancer destruction of any tissue contacted

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

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## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --



No ecological data available for this product. Mobility in soil: No data available

**Ingredient Ecological Information:** The 48-hour TLM in flounder is 100-300 ppm; *Lepomis macrochirus* 96 hr LC50 = 16-28 mg/L; LC50 24 h = 82 mg/L; *Crangon crangon* 48 hr EC50 = 70-80 mg/L;

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### 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** D002

**Special Instructions (Disposal):** Work in an approved fume hood. Dilute material with excess water making a weaker than 5% solution. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. If permitted by regulation, 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. Otherwise, Check with local municipal and state authorities and waste contractors for pertinent local information regarding the proper disposal of chemicals.

**Empty Containers:** Working in a well-ventilated area, Rinse three times with an appropriate solvent. Collect rinsate and dispose of according to local, state or federal regulations. In the US, rinsate from empty containers is classified as hazardous waste and should be disposed of at an E.P. A. approved facility. Rinsate from empty containers may contain sufficient product to require disposal as hazardous waste. 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. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

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### 14. TRANSPORT INFORMATION

**D.O.T.:**

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

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**Hazard Class:** 8

**Subsidiary Risk:** NA

**ID Number:** UN1830

**Packing Group:** II

**T.D.G.:**

**Proper Shipping Name:** Sulphuric Acid

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**Hazard Class:** 8

**Subsidiary Risk:** NA

**UN Number/PIN:** 1830

**Packing Group:** II

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

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

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**Hazard Class:** 8

**Subsidiary Risk:** NA

**ID Number:** UN1830

**Packing Group:** II

**I.M.O.:**

**Proper Shipping Name:** Sulphuric Acid

--

**Hazard Class:** 8

**Subsidiary Risk:** NA

**ID Number:** UN1830

**Packing Group:** II

**Marine Pollutant:**

**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 Reactive

**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.

Sulfuric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size.)

**302 (EHS) TPQ (40 CFR 355):** Sulfuric Acid 1000 lbs.

**304 CERCLA RQ (40 CFR 302.4):** Sulfuric Acid 1000 lbs.

**304 EHS RQ (40 CFR 355):** Sulfuric Acid - RQ 1000 lbs.

**Clean Water Act (40 CFR 116.4):** Sulfuric acid - RQ 1000 lbs.

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

**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).

**CAS Number:** Not applicable

**Canadian Inventory Status:** All ingredients of this product are DSL Listed.

**EEC Inventory Status:** All ingredients used to make this product are listed on EINECS / ELINCS.

**Australian Inventory (AICS) Status:** All ingredients are listed.

**New Zealand Inventory (NZIoC) Status:** All components either listed or exempt.

**Korean Inventory (KECI) Status:** All components of this product are either listed, listed as the anhydrous compound or exempt.

**Japan (ENCS) Inventory Status:** All components either listed or exempt.

**China (PRC) Inventory (MEP) Status:** All components either listed or exempt.

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## 16. OTHER INFORMATION

**References:** TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. In-house information. Technical Judgment. Sax, N. Irving and Richard J. Lewis, Sr., revised by. Hawley's Condensed Chemical Dictionary, Eleventh Ed. New York: Van Nostrand Reinhold Co., 1987. NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards. Cincinnati: Department of Health and Human Services, 1981. IARC Monographs on the Evaluation of the Carcinogenic Risks to Humans. World Health Organization (Volumes 1-42) Supplement 7. France: 1987. NIOSH Registry of Toxic Effects of Chemical Substances, 1985-86. Cincinnati: U.S. Department of Health and Human Services, April, 1987.

**Complete Text of H phrases referred to in Section 3:** H290 May be corrosive to metals. H314 Causes severe skin burns and eye damage.

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

**Date of MSDS Preparation:**

**Day:** 24

**Month:** September

**Year:** 2015

**MSDS Prepared:** MSDS prepared by Product Compliance Department extension 3350

**CCOHS Evaluation Note:** It is offered under exemption from WHMIS labeling as specified in the Controlled Products Regulation (CPR) Section 17.

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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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