

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>
2882200	2105569	Hach Company	OSHA	English	1
2882200	2105669	Hach Company	OSHA	English	1
2882200	2105669	Hach Company	ROWGHS	English	1
2882200	2107169	Hach Company	ROWGHS	English	1
2882200	1406499	Hach Company	ROWGHS	English	1

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Total Enclosures: 5

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

MSDS No: M00109

# MATERIAL SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** DPD Free Chlorine Reagent  
**Catalog Number:** 2105569

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:** M00109  
**Chemical Name:** Not applicable  
**CAS No.:** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Mixture  
**Hazard:** May cause sensitization. May cause irritation.  
**Date of MSDS Preparation:**  
**Day:** 04  
**Month:** March  
**Year:** 2014

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

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

**CAS No.:** Confidential  
**TSCA CAS Number:** Confidential  
**Percent Range:** < 5.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat (female) LD50 = 695 mg/kg; oral rat (male and female) LD50 = 970 mg/kg.  
**LC50:** None reported  
**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  
**Hazard:** May cause sensitization. May cause irritation.

### Carboxylate Salt

**CAS No.:** Confidential  
**TSCA CAS Number:** Confidential  
**Percent Range:** 60.0 - 70.0  
**Percent Range Units:** weight / weight  
**LD50:** None reported  
**LC50:** None reported  
**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  
**Hazard:** May cause irritation. Toxic properties unknown.

### Sodium Phosphate, Dibasic

**CAS No.:** 7558-79-4  
**TSCA CAS Number:** 7558-79-4  
**Percent Range:** 30.0 - 40.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat LD50 = 17 g/kg  
**LC50:** None reported  
**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  
**Hazard:** May cause eye irritation. May cause skin irritation.

**Disodium EDTA**

**CAS No.:** 6381-92-6

**TSCA CAS Number:** 139-33-3

**Percent Range:** < 5.0

**Percent Range Units:** weight / weight

**LD50:** Oral rat LD50 = 2000 mg/kg

**LC50:** None reported

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

**Hazard:** May cause irritation.

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### 3. HAZARDS IDENTIFICATION

**Emergency Overview:**

**Appearance:** White or light pink powder

**Odor:** Odorless

MAY CAUSE EYE AND RESPIRATORY TRACT IRRITATION

MAY CAUSE ALLERGIC SKIN REACTION

**HMIS:**

**Health:** 1

**Flammability:** 1

**Reactivity:** 0

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

**NFPA:**

**Health:** 1

**Flammability:** 1

**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:** None reported

**Ingestion:** DPD Oral rat 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. Very large doses may cause: gastrointestinal irritation diarrhea nausea vomiting irritation of the mouth and esophagus fever lethargy muscular cramps calcium deficiency in the blood kidney damage

**Target Organs:** Kidneys

**Inhalation:** Large doses may cause: irritation of nose and throat

**Target Organs:** None reported

**Medical Conditions Aggravated:** Allergy or sensitivity to salts of N,N-Diethyl-p-phenylenediamine Pre-existing: Eye conditions Skin conditions Respiratory conditions

**Chronic Effects:** DPD may cause allergic skin reactions in some people causing severe skin rashes and itching.

Chronic overexposure may cause low levels of calcium in the blood kidney damage

**Cancer / Reproductive Toxicity Information:**

This product does NOT contain any OSHA listed carcinogens.

This product does NOT contain any IARC listed chemicals. IARC Listed: No

This product does NOT contain any NTP listed chemicals.

**Additional Cancer / Reproductive Toxicity Information:** None reported

**Toxicologically Synergistic Products:** None reported

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### 4. FIRST AID

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

**Skin Contact (First Aid):** Wash skin with soap and plenty of water. Call physician if irritation develops. Remove contaminated clothing, wash before reuse, and do not allow out of workplace.

**Ingestion (First Aid):** Never give anything by mouth to an unconscious person. Call physician immediately. Give large quantities of water or milk. If you feel unwell, contact a physician.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. If you feel unwell, contact a physician.

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## 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Material is not classified as flammable according to GHS criteria. 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 determined

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

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

**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.

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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. Releases of this material may contaminate the environment.

**Clean-up Technique:** Scoop up spilled material into a large beaker and dissolve with water. Decontaminate the area of the spill with a soap solution. If permitted by regulation, Flush reacted material to the drain with a large excess of water. Otherwise, Dispose of in accordance with local, state and federal regulations or laws.

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

**Special Instructions (for accidental release):** Mixture contains a component which is regulated as a water 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, clothing. Use with adequate ventilation. 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, heat. Keep away from: oxidizers

**Flammability Class:** Not applicable

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## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

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

**Skin Protection:** nitrile 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. Use with adequate ventilation. Do not breathe: dust. Wash thoroughly after handling. Protect from: light, moisture, heat. Keep away from: oxidizers

**TLV:** 15 mg/m<sup>3</sup> as inhalable dust; 5 mg/m<sup>3</sup> as respirable dust  
**PEL:** 10 mg/m<sup>3</sup> as inhalable dust; 3 mg/m<sup>3</sup> as respirable dust

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## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** White or light pink powder  
**Physical State:** Solid  
**Molecular Weight:** Not applicable  
**Odor:** Odorless  
**pH:** 6.35 (1% solution)  
**Vapor Pressure:** Not applicable  
**Vapor Density (air = 1):** Not applicable  
**Boiling Point:** Not applicable  
**Melting Point:** Decomposes @ 110 °C (230 °F)  
**Specific Gravity/ Relative Density (water = 1; air =1):** 1.76  
**Evaporation Rate (water = 1):** Not applicable  
**Volatile Organic Compounds Content:** Not applicable  
**Partition Coefficient (n-octanol / water):** Not determined  
**Solubility:**  
**Water:** Soluble  
**Acid:** Soluble  
**Other:** Not determined  
**Metal Corrosivity:**  
**Steel:** Not applicable  
**Aluminum:** Not applicable

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## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.  
**Conditions to Avoid:** Exposure to light. Excess moisture Heating to decomposition. Contact with oxidizers Poor Ventilation  
**Reactivity / Incompatibility:** Incompatible with: oxidizers  
**Hazardous Decomposition:** Heating to decomposition releases toxic and/or corrosive fumes of: carbon dioxide carbon monoxide phosphorus oxides nitrogen oxides  
**Hazardous Polymerization:** Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**  
**LD50:** Acute Toxicity Estimation (ATE): Practically non-toxic.  
**LC50:** Acute Toxicity Estimation (ATE): Practically non-toxic.  
**Dermal Toxicity Data:** Acute Toxicity Estimation (ATE): Practically non-toxic.  
**Skin and Eye Irritation Data:** Sodium Phosphate, Dibasic: Eye - Rabbit - 500 mg/24 hr/Mild irritaiton; Skin - Rabbit - 500 mg/24 hr/Mild Irritation.  
**Mutation Data:** Disodium EDTA: Cytogenetic Analysis - Hamster Lung - 200 mg/L  
**Reproductive Effects Data:** None reported  
**Ingredient Toxicological Data:** Salt of DPD: Oral Rat (female) LD50 = 695 mg/kg; Oral Rat (male) LD50 = 970 mg/kg. Sodium phosphate, dibasic: Oral Rat LD50 = 17 g/kg. EDTA, disodium salt: Oral Rat LD50 = 2000 mg/kg; Oral Rabbit 2300 mg/kg.

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## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --  
No ecological data available for this product. Based on classification principles, not classified as hazardous to the environment.  
**Ingredient Ecological Information:** Salt of N,N-Diethyl-p-Phenylenediamine: 48 hr Daphnia magna EC50 = 10.8 mg/L; 24 hr NOEC = 3.1 mg/L; 48 hr NOEC = 3.1 mg/L; EDTA, disodium salt: 96 hr Bluegill LC50 = 159 mg/L; 72 hr Green algae ErC50 = 10-100 mg/L.  
CEPA categorization for ingredients are as follows:  
EDTA, disodium salt: Not persistent, bioaccumulative or inherently toxic to aquatic organisms.

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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. If permitted by regulation, Open cold water tap completely, slowly pour the 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 in countries other than the US. 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:** Not Currently Regulated

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**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

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**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

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**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.

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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(d)(5)(iv)].

**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.

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

**304 CERCLA RQ (40 CFR 302.4):** 5000 lbs. Sodium Phosphate, Dibasic

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

**Clean Water Act (40 CFR 116.4):** Sodium phosphate, dibasic - RQ 5000 lbs.

**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:** New Jersey Trade Secret Registry Number 80100131-5001 (Carboxylate Salt) New Jersey Trade Secret Registry Number 80100131-5002 (DPD Salt) New York Trade Secret Registry Number 478 (DPD Salt) New York Trade Secret Registry Number 479 (Carboxylate Salt) This product complies with Pennsylvania Trade Secret Regulations. This product is registered as a trade secret in the state of Illinois. 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 New York.

**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:** Laboratory Use Determination of Free Chlorine

**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. Outside Testing. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989.

**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: M00110

# MATERIAL SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** DPD Total Chlorine Reagent  
**Catalog Number:** 2105669

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:** M00110  
**Chemical Name:** Not applicable  
**CAS No.:** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Mixture  
**Hazard:** May cause irritation.  
**Date of MSDS Preparation:**  
**Day:** 08  
**Month:** May  
**Year:** 2014

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

### Potassium Iodide

**CAS No.:** 7681-11-0  
**TSCA CAS Number:** 7681-11-0  
**Percent Range:** 20.0 - 30.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral Human LD50 = 500 - 5000 mg/kg; Oral Rat LD50 = 2779 mg/kg; Oral Mouse LD50 = 1862 mg/kg; Oral Mouse LD50 = 1000 mg/kg  
**LC50:** None reported  
**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 total dust; 5 mg/m<sup>3</sup> as respirable dust  
**Hazard:** Harmful if swallowed Causes eye and skin irritation Experimental teratogen. Experimental mutagen.

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

**CAS No.:** Confidential  
**TSCA CAS Number:** Confidential  
**Percent Range:** 1.0 - 5.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat (female) LD50 = 695 mg/kg; oral rat (male and female) LD50 = 970 mg/kg.  
**LC50:** None reported  
**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  
**Hazard:** May cause sensitization. May cause irritation.

### Carboxylate Salt

**CAS No.:** Confidential  
**TSCA CAS Number:** Confidential  
**Percent Range:** 40.0 - 50.0  
**Percent Range Units:** weight / weight  
**LD50:** None reported



**LC50:** None reported  
**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  
**Hazard:** May cause irritation. Toxic properties unknown.

**Sodium Phosphate, Dibasic**

**CAS No.:** 7558-79-4  
**TSCA CAS Number:** 7558-79-4  
**Percent Range:** 20.0 - 30.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat LD50 = 17 g/kg  
**LC50:** None reported  
**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  
**Hazard:** May cause eye irritation. May cause skin irritation.

**Ethylenediaminetetraacetic Acid, Disodium Salt**

**CAS No.:** 6381-92-6  
**TSCA CAS Number:** 139-33-3  
**Percent Range:** < 1.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat LD50 = 2000 mg/kg  
**LC50:** None reported  
**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 total dust; 5 mg/m<sup>3</sup> as respirable dust  
**Hazard:** May cause irritation.

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### 3. HAZARDS IDENTIFICATION

**Emergency Overview:**

**Appearance:** White or light pink powder  
**Odor:** Odorless  
MAY CAUSE EYE AND RESPIRATORY TRACT IRRITATION  
MAY CAUSE ALLERGIC SKIN REACTION

**HMIS:**

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

**NFPA:**

**Health:** 1  
**Flammability:** 1  
**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:** May cause iodism, which symptoms include skin rash, conjunctivitis, runny nose, sneezing, bronchitis, headache, fever and irritation of mucous membranes. DPD Oral rat 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. Large doses may cause: lethargy loss of strength loss of coordination difficult breathing diarrhea

**Target Organs:** Liver

**Inhalation:** Very large doses may cause: respiratory tract irritation Effects similar to those of ingestion.

**Target Organs:** Liver

**Medical Conditions Aggravated:** Allergy or sensitivity to salts of N,N-Diethyl-p-phenylenediamine Pre-existing: Eye conditions Skin conditions Respiratory conditions Persons with pre-existing respiratory conditions may be more susceptible to the effects of Potassium Iodide exposure.

**Chronic Effects:** Chronic overexposure may cause allergic skin reactions hypothyroidism liver damage DPD may cause allergic skin reactions in some people causing severe skin rashes and itching. Iodines overdose, 'iodism', may cause skin rash, runny nose, headaches, fever and bronchitis.

**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:** Maternal ingestion of potassium iodide during pregnancy may cause congenital goiter and hyperthyroidism in the newborn infant.

**Toxicologically Synergistic Products:** None reported

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#### 4. FIRST AID

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

**Skin Contact (First Aid):** Wash skin with soap and plenty of water. Call physician if irritation develops.

**Ingestion (First Aid):** Never give anything by mouth to an unconscious person. Give large quantities of water. If you feel unwell, contact a physician.

**Inhalation:** Remove to fresh air.

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#### 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Can burn in fire, releasing toxic vapors. Material is not classified as flammable according to GHS criteria. 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 determined

**Hazardous Combustion Products:** Toxic fumes of: carbon monoxide, carbon dioxide. iodine compounds phosphorus oxides potassium oxides sodium monoxide nitrogen oxides.

**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.

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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. Releases of this material may contaminate the environment.

**Clean-up Technique:** Scoop up spilled material into a large beaker and dissolve with water. If permitted by regulation, Flush reacted material to the drain with a large excess of water. Otherwise, Decontaminate the area of the spill with a soap solution. 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 as needed to perform spill clean-up. If conditions warrant, increase the size of the evacuation.

**Special Instructions (for accidental release):** Mixture contains a component which is regulated as a water 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 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 heat moisture

**Flammability Class:** Not applicable

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## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Have an eyewash station nearby. Use general ventilation to minimize exposure to mist, vapor or dust.

**Personal Protective Equipment:**

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

**Skin Protection:** lab coat nitrile 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 clothing Do not breathe: dust Wash thoroughly after handling. Protect from: light heat moisture

**TLV:** Not established

**PEL:** Not established

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## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** White or light pink powder

**Physical State:** Solid

**Molecular Weight:** Not applicable

**Odor:** Odorless

**pH:** 6.35 (1% solution)

**Vapor Pressure:** Not applicable

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

**Boiling Point:** Not applicable

**Melting Point:** 145 °C (293 °F)

**Specific Gravity/ Relative Density (water = 1; air =1):** 1.79

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

**Volatile Organic Compounds Content:** Not applicable

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

**Solubility:**

**Water:** Soluble

**Acid:** Soluble

**Other:** Not determined

**Metal Corrosivity:**

**Steel:** 0.038 in/yr

**Aluminum:** 0.006 in/yr

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## 10. STABILITY / REACTIVITY

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

**Conditions to Avoid:** Exposure to light. Excess moisture Extreme temperatures

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

**Hazardous Decomposition:** Heating to decomposition releases toxic and/or corrosive fumes of: carbon dioxide carbon monoxide iodine compounds phosphorus oxides potassium oxide nitrogen oxides

**Hazardous Polymerization:** Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**

**LD50:** Oral Rat LD50 = 7000 mg/kg (male); Oral Rat (female) LD50 = 4700 mg/kg.

**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:** Salt of DPD: Oral Rat (female) LD50 = 695 mg/kg; Oral Rat (male) LD50 = 970 mg/kg. Potassium iodide: Oral Rat LD50 = 4800 mg/kg; Oral Mouse LD50 = 1862 mg/kg. EDTA, disodium salt: Oral Rat LD50 = 2000 mg/kg.

---

## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --

No ecological data available for this product. Mobility in soil: No data available Do not release into the environment. Do not place in landfill. Recycle appropriately.

**Ingredient Ecological Information:** EDTA, disodium salt: 72 hr Green algae ErC50 = 10-100 mg/L. DPD Salt: 48 hr Daphnia magna EC50 = 10.8 mg/L

CEPA categorization for ingredients are as follows:

Potassium iodide: Persistent and inherently toxic to aquatic organisms (PiT). EDTA, disodium salt: Not persistent, bioaccumulative or inherently toxic to aquatic organisms.

---

## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** Not applicable

**Special Instructions (Disposal):** Dilute to 3 to 5 times the volume with cold water. If permitted by regulation, Open cold water tap completely, slowly pour the material to the drain. Allow cold water to run for 5 minutes to completely flush the system. Otherwise, Check with national, local municipal and state authorities and waste contractors for pertinent local information on the disposal of this article.

**Empty Containers:** 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 in countries other than the US.

**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:** 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):** Sodium Phosphate, Dibasic 5000 lbs.

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

**Clean Water Act (40 CFR 116.4):** Sodium phosphate, dibasic - RQ 5000 lbs.

**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:** Not applicable

**Trade Secret Registry:** New Jersey Trade Secret Registry Number 80100131-5001 (Carboxylate Salt) New Jersey Trade Secret Registry Number 80100131-5002 (DPD Salt) New York Trade Secret Registry Number 478 (DPD Salt) New York Trade Secret Registry Number 479 (Carboxylate Salt) This product complies with Pennsylvania Trade Secret Regulations. This product is registered as a trade secret in the state of Illinois. 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 New York.

**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 Indicator for total chlorine

**References:** CCINFO MSDS/FTSS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. The Merck Index, 11th Ed. Rahway, New Jersey: Merck and Co., Inc., 1989. Outside Testing. Technical Judgment. In-house information. 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.

**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	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: M00110

# SAFETY DATA SHEET

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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** DPD Total Chlorine Reagent  
**Catalog Number:** 2105669

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:** M00110  
**Chemical Name:** Not applicable  
**CAS Number:** Not applicable  
**Additional CAS No. (for hydrated forms):** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Mixture  
**Intended Use:** Laboratory Reagent Indicator for total chlorine  
HMIRC Registry Number 8080 Granted: 12/02/24

---

## 2. HAZARDS IDENTIFICATION

**GHS Classification:**

**Hazard categories:** . Skin Corrosion/Irritation: Skin Irrit. 2 Serious Eye Damage/Eye Irritation: Eye Irrit. 2A

**GHS Label Elements:**

WARNING



**Hazard statements:** . Causes skin irritation. Causes serious eye irritation.

**Precautionary statements:** Wear protective gloves / protective clothing / eye protection / face protection. Call a POISON CENTER or doctor/physician if you feel unwell. Take off contaminated clothing and wash before reuse. Wear eye protection. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. 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:** 1

**Flammability:** 1

**Reactivity:** 0

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

**NFPA:**

**Health:** 1

**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

---

## 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:** 20.0 - 30.0

**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 Phosphate, Dibasic**

**CAS Number:** 7558-79-4

**Chemical Formula:** Na<sub>2</sub>HPO<sub>4</sub>

**GHS Classification:** Skin Irrit 2, H315; Eye Irrit 2, H319

**Percent Range:** 20.0 - 30.0

**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

**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:** 1.0 - 5.0

**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

**Ethylenediaminetetraacetic Acid, Disodium Salt**

**CAS Number:** 139-33-3

**Chemical Formula:** C<sub>10</sub>H<sub>14</sub>N<sub>2</sub>Na<sub>2</sub>O<sub>8</sub>·2H<sub>2</sub>O

**GHS Classification:** Acute Tox. 5-Orl, H303; Eye Irrit. 2A, H319; Aquatic Acute 2, H401

**Percent Range:** < 1.0

**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:** Not applicable

**Hazardous Components according to GHS: No**

**Carboxylate Salt**

**CAS Number:** Confidential

**Chemical Formula:** Confidential

**GHS Classification:** Not hazardous

**Percent Range:** 40.0 - 50.0

**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 8080 Granted: 12/02/24

**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):** Wash skin with soap and plenty of water. Call physician if irritation develops. Remove contaminated clothing.

**Inhalation:** Remove to fresh air.

**Ingestion (First Aid):** Never give anything by mouth to an unconscious person. Give 1-2 glasses of water under medical supervision. Call physician immediately.

---

## 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Can burn in fire, releasing toxic vapors. Material is not classified as flammable according to GHS criteria. 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:** 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: carbon monoxide, carbon dioxide. iodine compounds phosphorus oxides potassium oxides sodium monoxide nitrogen oxides.

---

## 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. Releases of this material may contaminate the environment.

**Clean-up Technique:** Scoop up spilled material into a large beaker and dissolve with water. If permitted by regulation, Flush reacted material to the drain with a large excess of water. Otherwise, Decontaminate the area of the spill with a soap solution. 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 as needed to perform spill clean-up. If conditions warrant, increase the size of the evacuation.

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

---

## 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 heat moisture

**Flammability Class:** Not applicable

---

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering Controls:** Have an eyewash station nearby. Use general ventilation to minimize exposure to mist, vapor or dust.

### **Personal Protective Equipment:**

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

**Skin Protection:** lab coat nitrile 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 clothing. Do not breathe: dust. Wash thoroughly after handling. Protect from: light heat moisture

**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:** White or light pink powder

**Physical State:** Solid

**Molecular Weight:** Not applicable

**Odor:** Odorless

**Odor Threshold:** Not applicable

**pH:** 6.35 (1% solution)

**Metal Corrosivity:**

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

**Steel:** 0.038 in/yr

**Aluminum:** 0.006 in/yr

**Specific Gravity/ Relative Density (water = 1; air =1):** 1.79

**Viscosity:** Not applicable

**Solubility:**

**Water:** Soluble

**Acid:** Soluble

**Other:** Not determined

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

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

**Melting Point:** 145 °C (293 °F)

**Decomposition Temperature:** Not determined

**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:** Can burn in fire, releasing toxic vapors. Material is not classified as flammable according to GHS criteria. 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 determined

**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: oxidizers

**Hazardous Decomposition:** Heating to decomposition releases toxic and/or corrosive fumes of: carbon dioxide carbon monoxide iodine compounds phosphorus oxides potassium oxide nitrogen oxides

**Conditions to Avoid:** Exposure to light. Excess moisture Extreme temperatures

---

## 11. TOXICOLOGICAL INFORMATION

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

**Toxicologically Synergistic Products:** None reported

**Acute Toxicity:** Route Data Given Below Based on classification principles, the classification criteria are not met.

Oral Rat LD50 = 7000 mg/kg (male); Oral Rat (female) LD50 = 4700 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:** Irritating to skin.

May cause mild irritation.

**Eye Damage:** Irritating to eyes.

May cause mild irritation.

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

Potassium iodide may cause allergic skin reactions in already sensitized individuals.

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

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:** May cause iodism, which symptoms include skin rash, conjunctivitis, runny nose, sneezing, bronchitis, headache, fever and irritation of mucous membranes. 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. Large doses may cause: lethargy loss of strength loss of coordination difficult breathing diarrhea

**Inhalation:** Very large doses may cause: respiratory tract irritation Effects similar to those of ingestion.

**Skin Absorption:** No effects anticipated

**Chronic Effects:** Chronic overexposure may cause allergic skin reactions hypothyroidism liver damage DPD may cause allergic skin reactions in some people causing severe skin rashes and itching. Iodines overdose, 'iodism', may cause skin rash, runny nose, headaches, fever and bronchitis.

**Medical Conditions Aggravated:** Allergy or sensitivity to salts of N,N-Diethyl-p-phenylenediamine Pre-existing: Eye conditions Skin conditions Respiratory conditions Persons with pre-existing respiratory conditions may be more susceptible to the effects of Potassium Iodide exposure.

---

## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --

No ecological data available for this product. Mobility in soil: No data available Do not release into the environment. Do not place in landfill. Recycle appropriately.

Method Used for Estimation of Aquatic Toxicity of Mixture Summation Method M-factor (Multiplier) for highly toxic ingredients: 1

**Ingredient Ecological Information:** EDTA, disodium salt: 72 hr Green algae ErC50 = 10-100 mg/L. DPD Salt: 48 hr Daphnia magna EC50 = 10.8 mg/L

CEPA categorization for ingredients are as follows:

Potassium iodide: Persistent and inherently toxic to aquatic organisms (PiT). EDTA, disodium salt: Not persistent, bioaccumulative or inherently toxic to aquatic organisms.

---

## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** Not applicable

**Special Instructions (Disposal):** Dilute to 3 to 5 times the volume with cold water. If permitted by regulation, Open cold water tap completely, slowly pour the material to the drain. Allow cold water to run for 5 minutes to completely flush the system. Otherwise, Check with national, local municipal and state authorities and waste contractors for pertinent local information on the disposal of this article.

**Empty Containers:** 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.

**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:** Not Currently Regulated

--

**Hazard Class:** NA

**Subsidiary Risk:** NA

**ID Number:** NA

**Packing Group:** NA

**T.D.G.:**

**Proper Shipping Name:** Not Currently Regulated

--

**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

--

**Hazard Class:** NA

**Subsidiary Risk:** NA

**ID Number:** NA

**Packing Group:** NA

**I.M.O.:**

**Proper Shipping Name:** Not Currently Regulated

--

**Hazard Class:** NA

**Subsidiary Risk:** NA

**ID Number:** NA

**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):** Sodium Phosphate, Dibasic 5000 lbs.

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

**Clean Water Act (40 CFR 116.4):** Sodium phosphate, dibasic - RQ 5000 lbs.

**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):** Not applicable

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

**Trade Secret Registry:** New Jersey Trade Secret Registry Number 80100131-5001 (Carboxylate Salt) New Jersey Trade Secret Registry Number 80100131-5002 (DPD Salt) New York Trade Secret Registry Number 478 (DPD Salt) New York Trade Secret Registry Number 479 (Carboxylate Salt) This product complies with Pennsylvania Trade Secret Regulations. This product is registered as a trade secret in the state of Illinois. 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 New York.

**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:** DSL Listed: Yes

**EEC Inventory Status:** All ingredients used to make this product are listed on EINECS / ELINCS or are placed on the market in quantities less than 10 kg per year.

**Australian Inventory (AICS) Status:** Exempt. Annual Report Required.

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

**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.

---

## 16. OTHER INFORMATION

**References:** CCINFO MSDS/FTSS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. The Merck Index, 11th Ed. Rahway, New Jersey: Merck and Co., Inc., 1989. Outside Testing. Technical Judgment. In-house information. 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.

**Complete Text of H phrases referred to in Section 3:** . 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).

**Date of MSDS Preparation:**

**Day:** 24

**Month:** February

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

---

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

MSDS No: M00055

# SAFETY DATA SHEET

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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** NitriVer ® 3 Nitrite Reagent  
**Catalog Number:** 2107169

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:** M00055  
**Chemical Name:** Not applicable  
**CAS Number:** Not applicable  
**Additional CAS No. (for hydrated forms):** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Mixture  
**Intended Use:** Laboratory Reagent Determination of nitrite

---

## 2. HAZARDS IDENTIFICATION

**GHS Classification:**

**Hazard categories:** Serious Eye Damage/Eye Irritation:Eye Irrit. 2 Skin Corrosion/Irritation: Skin Irrit. 2 Respiratory or Skin Sensitization: Skin Sens.1 Acute Toxicity: Acute Tox. 4-Orl

**GHS Label Elements:**

WARNING



**Hazard statements:** Harmful if swallowed. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation.

**Precautionary statements:** Wear protective gloves / protective clothing / eye protection / face protection. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Take off contaminated clothing and wash before reuse.

**HMIS:**

**Health:** 1

**Flammability:** 1

**Reactivity:** 0

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

**NFPA:**

**Health:** 1

**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

---

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

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

##### **Potassium Phosphate, Monobasic**

*CAS Number:* 7778-77-0

*Chemical Formula:*  $\text{KH}_2\text{PO}_4$

*GHS Classification:* Acute Tox. 4 - Or1, H302; Eye Irrit. 2, H319

*Percent Range:* 75.0 - 85.0

*Percent Range Units:* weight / weight

*PEL:*  $15 \text{ mg/m}^3$  as total dust;  $5 \text{ mg/m}^3$  as respirable dust

*TLV:*  $10 \text{ mg/m}^3$  as inhalable fraction;  $3 \text{ mg/m}^3$  as respirable fraction

*WHMIS Symbols:* Not applicable

##### **Sodium Sulfanilate**

*CAS Number:* 515-74-2

*Chemical Formula:*  $\text{C}_6\text{H}_6\text{NNaO}_3\text{S}$

*GHS Classification:* Skin Irrit. 2 H315; Eye Irrit. 2 H319; Skin Sens. 1 H317

*Percent Range:* 5.0 - 15.0

*Percent Range Units:* weight / weight

*PEL:*  $15 \text{ mg/m}^3$  as inhalable dust;  $5 \text{ mg/m}^3$  as respirable dust

*TLV:*  $10 \text{ mg/m}^3$  as inhalable dust;  $3 \text{ mg/m}^3$  as respirable dust

*WHMIS Symbols:* Not applicable

##### **Potassium Pyrosulfate**

*CAS Number:* 7790-62-7

*Chemical Formula:*  $\text{K}_2\text{S}_2\text{O}_7$

*GHS Classification:* Acute Tox. 5 -Or1, H303; Eye Irrit. 2A, H319;

*Percent Range:* 5.0 - 15.0

*Percent Range Units:* weight / weight

*PEL:*  $15 \text{ mg/m}^3$  as inhalable dust;  $5 \text{ mg/m}^3$  as respirable dust

*TLV:*  $10 \text{ mg/m}^3$  as inhalable dust;  $3 \text{ mg/m}^3$  as respirable dust

*WHMIS Symbols:* Other Toxic Effects

##### **Chromotropic Acid, Disodium salt**

*CAS Number:* 129-96-4

*Chemical Formula:*  $\text{C}_{10}\text{H}_6\text{O}_8\text{S}_2\text{Na}_2$

*GHS Classification:* Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT Single 3, H335

*Percent Range:* 1-3

*Percent Range Units:* weight / weight

*PEL:*  $15 \text{ mg/m}^3$  as inhalable dust;  $5 \text{ mg/m}^3$  as respirable dust

*TLV:*  $10 \text{ mg/m}^3$  as inhalable dust;  $3 \text{ mg/m}^3$  as respirable dust

*WHMIS Symbols:* Not applicable

##### **1,2-Cyclohexanediaminetetraacetic Acid Trisodium Salt**

*CAS Number:* 36679-96-6

*Chemical Formula:*  $\text{C}_{14}\text{H}_{19}\text{N}_2\text{O}_8\text{Na}_3$

*GHS Classification:* Skin Irrit. 2, H315; Eye Irrit. 2A, H319

*Percent Range:* 1-3

*Percent Range Units:* weight / weight

*PEL:*  $15 \text{ mg/m}^3$  as inhalable dust;  $5 \text{ mg/m}^3$  as respirable dust

*TLV:*  $10 \text{ mg/m}^3$  as inhalable dust;  $3 \text{ mg/m}^3$  as respirable dust

*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 if irritation develops.

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

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

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

---

## 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Material is not classified as flammable according to GHS criteria. 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:** Use media appropriate to surrounding fire conditions

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

**Fire / Explosion Hazards:** None reported

**Hazardous Combustion Products:** None reported

---

## 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. Releases of this material may contaminate the environment.

**Clean-up Technique:** If permitted by regulation, 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 the spilled material to the drain with a large excess of water. 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: any quantity is spilled.

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

---

## 7. HANDLING AND STORAGE

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

**Storage:** Protect from: light heat moisture

**Flammability Class:** Not applicable

---

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**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:** lab coat nitrile gloves

**Inhalation Protection:** adequate ventilation

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

**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.:**

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** White powder

**Physical State:** Solid

**Molecular Weight:** Not applicable

**Odor:** Odorless

**Odor Threshold:** Not applicable

**pH:** of 5% solution = 3.2

**Metal Corrosivity:**

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

**Steel:** 0.057 in/yr

**Aluminum:** 0.00 in/yr

**Specific Gravity/ Relative Density (water = 1; air =1):** 3.12

**Viscosity:** Not applicable

**Solubility:**

**Water:** Soluble

**Acid:** Not determined

**Other:** Not determined

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

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

**Melting Point:** 224 °C (435 °F)

**Decomposition Temperature:** Not determined

**Boiling Point:** Not determined

**Vapor Pressure:** Not applicable

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

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

**Volatile Organic Compounds Content:** Not applicable

**Flammable Properties:** Material is not classified as flammable according to GHS criteria. 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:** None reported

**Hazardous Decomposition:** Toxic fumes of: phosphorus oxides carbon dioxide carbon monoxide sodium oxides

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

---

## 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 Route Data Given Below

Oral Rat/Mouse LD50 = 1973 mg/kg

Dermal Rabbit LD50 > 5859 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:** Irritating to skin.

**Eye Damage:** Irritating to eyes.

**Sensitization:** Skin Sensitizer Contains a sensitizing compound.  
Sodium sulfanilate

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

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:** Harmful May cause: irritation of the mouth and esophagus Very large doses may cause: gastrointestinal disturbances cardiac depression kidney damage

**Inhalation:** No effects anticipated

**Skin Absorption:** Will be absorbed through the skin.

**Chronic Effects:** Chronic overexposure may cause kidney damage heart damage allergic skin reactions irritation

**Medical Conditions Aggravated:** Pre-existing: Eye conditions Kidney conditions Central nervous system diseases Skin conditions

---

## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --

No ecological data available for this product. No bioaccumulation potential Based on classification principles, not classified as hazardous to the environment.

**Ingredient Ecological Information:** Sodium sulfanilate: 96 hr Pimephales promelas LC50 = 100 mg/L; 48 hr Daphnia magna EC50 = 86 mg/L; 72 hr Scenedesmus subspicatus ErC50 = 375 mg/L

CEPA categorization for ingredients are as follows:

Sodium sulfanilate: Not persistent, bioaccumulative or inherently toxic to aquatic organisms

---

## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** Not applicable

**Special Instructions (Disposal):** If permitted by regulation, 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. Otherwise, Check with national, local municipal and state authorities and waste contractors for pertinent local information on the disposal of this article.

**Empty Containers:** Rinse three times with an appropriate solvent. Collect rinsate and dispose of according to local, state or federal regulations.

**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

--

**Hazard Class:** NA

**Subsidiary Risk:** NA

**ID Number:** NA

**Packing Group:** NA

**T.D.G.:**

**Proper Shipping Name:** Not Currently Regulated

--

**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

--

**Hazard Class:** NA

**Subsidiary Risk:** NA

**ID Number:** NA

**Packing Group:** NA

**I.M.O.:**

**Proper Shipping Name:** Not Currently Regulated

--

**Hazard Class:** NA

**Subsidiary Risk:** NA

**ID Number:** NA

**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.

**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:** No

**Trade Secret Registry:** Not applicable

**National Inventories:**

**U.S. Inventory Status:** This product contains a chemical(s) exempt from the TSCA 8(b) Inventory due to a Low Volume Exemption held by Hach Company.

**CAS Number:** Not applicable

1,2-Cyclohexanediaminetetraacetic Acid Trisodium Salt. This chemical may only be used as a chelating reagent for chemical reactions.

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

**EEC Inventory Status:** All ingredients used to make this product are listed on EINECS / ELINCS or are placed on the market in quantities less than 10 kg per year.

**Australian Inventory (AICS) Status:** Some ingredients are not 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. 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. In-house information. 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:** H319 Causes serious eye irritation. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H302 Harmful if swallowed. H335 May cause respiratory 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).

**Date of MSDS Preparation:**

**Day:** 05

**Month:** December

**Year:** 2014

**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. 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). 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: M00110

# SAFETY DATA SHEET

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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** DPD Total Chlorine Reagent  
**Catalog Number:** 1406499

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:** M00110  
**Chemical Name:** Not applicable  
**CAS Number:** Not applicable  
**Additional CAS No. (for hydrated forms):** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Mixture  
**Intended Use:** Laboratory Reagent Indicator for total chlorine  
HMIRC Registry Number 8080 Granted: 12/02/24

---

## 2. HAZARDS IDENTIFICATION

**GHS Classification:**

**Hazard categories:** Skin Corrosion/Irritation: Skin Irrit. 2 Serious Eye Damage/Eye Irritation:Eye Irrit. 2

**GHS Label Elements:**

WARNING



**Hazard statements:** Causes skin irritation. Causes serious eye irritation.

**Precautionary statements:** Wear eye protection. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. 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:** 1

**Flammability:** 1

**Reactivity:** 0

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

**NFPA:**

**Health:** 1

**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

---

## 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:** 20.0 - 30.0

**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 Phosphate, Dibasic**

**CAS Number:** 7558-79-4

**Chemical Formula:** Na<sub>2</sub>HPO<sub>4</sub>

**GHS Classification:** Skin Irrit 2, H315; Eye Irrit 2, H319

**Percent Range:** 20.0 - 30.0

**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

### **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:** 1.0 - 5.0

**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

### **Ethylenediaminetetraacetic Acid, Disodium Salt**

**CAS Number:** 139-33-3

**Chemical Formula:** C<sub>10</sub>H<sub>14</sub>N<sub>2</sub>Na<sub>2</sub>O<sub>8</sub>·2H<sub>2</sub>O

**GHS Classification:** Acute Tox. 5-Orl, H303; Eye Irrit. 2A, H319; Aquatic Acute 2, H401

**Percent Range:** < 1.0

**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:** Not applicable

**Hazardous Components according to GHS:** No

### **Carboxylate Salt**

**CAS Number:** Confidential

**Chemical Formula:** Confidential

**GHS Classification:** Not hazardous

**Percent Range:** 40.0 - 50.0

**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 8080 Granted: 12/02/24

**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):** Wash skin with soap and plenty of water. Call physician if irritation develops. Remove contaminated clothing.

**Inhalation:** Remove to fresh air.

**Ingestion (First Aid):** Never give anything by mouth to an unconscious person. Give 1-2 glasses of water under medical supervision. Call physician immediately.

---

## 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Can burn in fire, releasing toxic vapors. Material is not classified as flammable according to GHS criteria. 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:** 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: carbon monoxide, carbon dioxide. iodine compounds phosphorus oxides potassium oxides sodium monoxide nitrogen oxides.

---

## 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. Releases of this material may contaminate the environment.

**Clean-up Technique:** Scoop up spilled material into a large beaker and dissolve with water. If permitted by regulation, Flush reacted material to the drain with a large excess of water. Otherwise, Decontaminate the area of the spill with a soap solution. 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 as needed to perform spill clean-up. If conditions warrant, increase the size of the evacuation.

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

---

## 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 heat moisture

**Flammability Class:** Not applicable

---

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering Controls:** Have an eyewash station nearby. Use general ventilation to minimize exposure to mist, vapor or dust.

**Personal Protective Equipment:**

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

**Skin Protection:** lab coat nitrile 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 clothing. Do not breathe: dust. Wash thoroughly after handling. Protect from: light heat moisture

**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:** White or light pink powder

**Physical State:** Solid

**Molecular Weight:** Not applicable

**Odor:** Odorless

**Odor Threshold:** Not applicable

**pH:** 6.35 (1% solution)

**Metal Corrosivity:**

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

**Steel:** 0.038 in/yr

**Aluminum:** 0.006 in/yr

**Specific Gravity/ Relative Density (water = 1; air = 1):** 1.79

**Viscosity:** Not applicable

**Solubility:**

**Water:** Soluble

**Acid:** Soluble

**Other:** Not determined

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

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

**Melting Point:** 145 °C (293 °F)

**Decomposition Temperature:** Not determined

**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:** Can burn in fire, releasing toxic vapors. Material is not classified as flammable according to GHS criteria. 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 determined

**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: oxidizers

**Hazardous Decomposition:** Heating to decomposition releases toxic and/or corrosive fumes of: carbon dioxide carbon monoxide iodine compounds phosphorus oxides potassium oxide nitrogen oxides

**Conditions to Avoid:** Exposure to light. Excess moisture Extreme temperatures

---

## 11. TOXICOLOGICAL INFORMATION

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

**Toxicologically Synergistic Products:** None reported

**Acute Toxicity:** Route Data Given Below Based on classification principles, the classification criteria are not met.

Oral Rat LD50 = 7000 mg/kg (male); Oral Rat (female) LD50 = 4700 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:** Irritating to skin.

May cause mild irritation.

**Eye Damage:** Irritating to eyes.

May cause mild irritation.

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

Potassium iodide may cause allergic skin reactions in already sensitized individuals.

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

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:** May cause iodism, which symptoms include skin rash, conjunctivitis, runny nose, sneezing, bronchitis, headache, fever and irritation of mucous membranes. 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. Large doses may cause: lethargy loss of strength loss of coordination difficult breathing diarrhea

**Inhalation:** Very large doses may cause: respiratory tract irritation Effects similar to those of ingestion.

**Skin Absorption:** No effects anticipated

**Chronic Effects:** Chronic overexposure may cause allergic skin reactions hypothyroidism liver damage DPD may cause allergic skin reactions in some people causing severe skin rashes and itching. Iodines overdose, 'iodism', may cause skin rash, runny nose, headaches, fever and bronchitis.

**Medical Conditions Aggravated:** Allergy or sensitivity to salts of N,N-Diethyl-p-phenylenediamine Pre-existing: Eye conditions Skin conditions Respiratory conditions Persons with pre-existing respiratory conditions may be more susceptible to the effects of Potassium Iodide exposure.

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## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --

No ecological data available for this product. Mobility in soil: No data available Do not release into the environment. Do not place in landfill. Recycle appropriately.

Method Used for Estimation of Aquatic Toxicity of Mixture Summation Method M-factor (Multiplier) for highly toxic ingredients: 1

**Ingredient Ecological Information:** EDTA, disodium salt: 72 hr Green algae ErC50 = 10-100 mg/L. DPD Salt: 48 hr Daphnia magna EC50 = 10.8 mg/L

CEPA categorization for ingredients are as follows:

Potassium iodide: Persistent and inherently toxic to aquatic organisms (PiT). EDTA, disodium salt: Not persistent, bioaccumulative or inherently toxic to aquatic organisms.

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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. If permitted by regulation, Open cold water tap completely, slowly pour the material to the drain. Allow cold water to run for 5 minutes to completely flush the system. Otherwise, Check with national, local municipal and state authorities and waste contractors for pertinent local information on the disposal of this article.

**Empty Containers:** 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.

**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

**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

**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):** Sodium Phosphate, Dibasic 5000 lbs.

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

**Clean Water Act (40 CFR 116.4):** Sodium phosphate, dibasic - RQ 5000 lbs.

**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):** Not applicable

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

**Trade Secret Registry:** New Jersey Trade Secret Registry Number 80100131-5001 (Carboxylate Salt) New Jersey Trade Secret Registry Number 80100131-5002 (DPD Salt) New York Trade Secret Registry Number 478 (DPD Salt) New York Trade Secret Registry Number 479 (Carboxylate Salt) This product complies with Pennsylvania Trade Secret Regulations. This product is registered as a trade secret in the state of Illinois. 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 New York.

**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:** DSL Listed: Yes

**EEC Inventory Status:** All ingredients used to make this product are listed on EINECS / ELINCS or are placed on the market in quantities less than 10 kg per year.

**Australian Inventory (AICS) Status:** Exempt. Annual Report Required.

*New Zealand Inventory (NZIoC) Status:* All components either listed or exempt.  
*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:** CCINFO MSDS/FTSS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. The Merck Index, 11th Ed. Rahway, New Jersey: Merck and Co., Inc., 1989. Outside Testing. Technical Judgment. In-house information. 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.

**Complete Text of H phrases referred to in Section 3:** . 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).

**Date of MSDS Preparation:**

**Day:** 08

**Month:** May

**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 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. 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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