SAFETY DATA SHEET

Issue Date 09-Aug-2016  Revision Date 07-Nov-2016  Version 8  Page 1 / 16

1. IDENTIFICATION

Product identifier
Product Name DPD Free Chlorine Reagent

Other means of identification
Product Code(s) 1407799

Safety data sheet number M00109

HMIRC # HMIRA Registry Number 9835 Filed 2016-04-11

Recommended use of the chemical and restrictions on use
Recommended Use Laboratory Use. Determination of Free Chlorine.
Uses advised against None.
Restrictions on use None.

Details of the supplier of the safety data sheet

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

Emergency telephone number
(303) 623-5716 - 24 Hour Service (515)232-2533 - 8am - 4pm CST

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Skin corrosion/irritation</th>
<th>Category 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 2A</td>
</tr>
</tbody>
</table>

Hazards not otherwise classified (HNOC)
Not applicable

Label elements

Signal word - Warning
Hazard statements
H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse

Other Information
Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance
Not applicable

Mixture

Chemical Family Mixture.

Percent ranges are used where confidential product information is applicable.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Percent Range</th>
<th>HMRIC #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium phosphate dibasic</td>
<td>7558-79-4</td>
<td>30 - 40%</td>
<td>-</td>
</tr>
<tr>
<td>Salt of N,N-Diethyl-p-Phenylenediamine</td>
<td>-</td>
<td>1 - 5%</td>
<td>-</td>
</tr>
<tr>
<td>Disodium EDTA</td>
<td>139-33-3</td>
<td>1 - 5%</td>
<td>-</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

Description of first aid measures

General advice
IF IN EYES: Flush eyes for at least 15 minutes. May cause skin irritation.

Eye contact
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.

Skin contact
For minor skin contact, avoid spreading material on unaffected skin. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Remove and isolate contaminated clothing and shoes. Call a POISON CENTER or doctor if you feel unwell. If skin irritation persists, call a physician.

Inhalation
IF INHALED: Remove person to fresh air and keep comfortable for breathing. If symptoms persist, call a physician.

Ingestion
IF SWALLOWED: Rinse Mouth. If symptoms persist, call a physician.

Self-protection of the first aider
Use personal protective equipment as required. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Most important symptoms and effects, both acute and delayed

Symptoms
See Section 11: TOXICOLOGICAL INFORMATION.

Indication of any immediate medical attention and special treatment needed

Note to physicians
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media
Caution: Use of water spray when fighting fire may be inefficient.

Flammable properties
Can burn in fire, releasing toxic vapors.

Specific hazards arising from the chemical
May react violently with oxidizers.

Hazardous combustion products

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

U.S. 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.
EC Notice
Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

WHMIS Notice
Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

Personal precautions, protective equipment and emergency procedures

Personal precautions
Evacuate personnel to safe areas. Do not touch or walk through spilled material. Ventilate affected area. Use personal protective equipment as required.

For emergency responders
Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions
See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover with plastic sheet to prevent spreading.

Methods for cleaning up
Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Dispose of in accordance with local, state and federal regulations or laws.

Emergency Response Guide Number
Not applicable

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7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling
Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Do not breathe dust/fume/gas/mist/vapors/spray.

Conditions for safe storage, including any incompatibilities

Storage Conditions
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

Flammability class
Not applicable

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Legend
See section 16 for terms and abbreviations

Appropriate engineering controls

Engineering Controls
Showers
Eyewash stations
Ventilation systems

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**
Wear tight sealing safety goggles and/or face protection shield. Avoid contact with eyes.

**Skin and body protection**
Wear protective gloves and protective clothing.

**Respiratory protection**
In case of insufficient ventilation, wear suitable respiratory equipment.

**General Hygiene Considerations**
Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wear suitable gloves and eye/face protection. Wash face, hands and any exposed skin thoroughly after handling. Regular cleaning of equipment, work area and clothing is recommended. Handle in accordance with good industrial hygiene and safety practice. Avoid prolonged or repeated contact with skin. Take off all contaminated clothing and wash it before reuse. Do not eat, drink or smoke when using this product. Keep away from food, drink and animal feeding stuffs.

**Environmental exposure controls**
Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
<td></td>
</tr>
<tr>
<td>Gas Under Pressure</td>
<td>Not classified according to GHS criteria</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>powder</td>
<td>Color</td>
</tr>
<tr>
<td></td>
<td></td>
<td>White to light pink</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
<td>Odor threshold</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No data available</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>6.3</td>
<td></td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Vapor density (air = 1)</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Specific gravity (water = 1 / air = 1)</td>
<td>1.76</td>
<td></td>
</tr>
<tr>
<td>Partition Coefficient (n-octanol/water)</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Soil Organic Carbon-Water Partition Coefficient</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>110 °C / 230 °F</td>
<td></td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>Not applicable</td>
<td></td>
</tr>
</tbody>
</table>
Kinematic viscosity

Not applicable

Solubility(ies)

Water solubility

<table>
<thead>
<tr>
<th>Water solubility classification</th>
<th>Water solubility</th>
<th>Water Solubility Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soluble</td>
<td>&gt; 1000 mg/L</td>
<td>25 °C / 77 °F</td>
</tr>
</tbody>
</table>

Solubility in other solvents

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Solubility classification</th>
<th>Solubility</th>
<th>Solubility Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid</td>
<td>Soluble</td>
<td>&gt; 1000 mg/L</td>
<td>25 °C / 77 °F</td>
</tr>
</tbody>
</table>

Other Information

Metal Corrosivity

Not classified as corrosive to metal according to GHS criteria

Steel Corrosion Rate

Not applicable

Aluminum Corrosion Rate

Not applicable

Volatile Organic Compounds (VOC) Content

Not applicable.

Bulk density

No data available

Explosive properties

Not classified according to GHS criteria.

Explosion data

No data available

Upper explosion limit

No data available

Lower explosion limit

No data available

Flammable properties

Can burn in fire, releasing toxic vapors.

Flammability Limit In Air

Upper flammability limit:

No data available

Lower flammability limit:

No data available

Flash point

Not applicable

Method

No information available

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.

10. STABILITY AND REACTIVITY

Reactivity properties

Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria
Chemical stability
Stable under recommended storage conditions.

Special dangers of the product
None reported

Possibility of Hazardous Reactions
None under normal processing.

Hazardous polymerization
Hazardous polymerization does not occur.

Conditions to avoid
Extremes of temperature and direct sunlight. Incompatible materials.

Incompatible materials

Hazardous Decomposition Products

Explosive properties
Not classified according to GHS criteria.

Upper explosion limit
No data available

Lower explosion limit
No data available

Autoignition temperature
No data available

Sensitivity to Static Discharge
None reported

Sensitivity to Mechanical Impact
None reported

11. TOXICOLOGICAL INFORMATION

NIOSH (RTECS) Number
None reported

Information on Likely Routes of Exposure

<table>
<thead>
<tr>
<th>Product Information</th>
<th>Causes skin irritation. Causes serious eye irritation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>No known effect based on information supplied.</td>
</tr>
<tr>
<td>Eye contact</td>
<td>Contact with eyes may cause irritation. Severely irritating to eyes.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Ingestion may cause irritation to mucous membranes.</td>
</tr>
<tr>
<td>Aggravated Medical Conditions</td>
<td>Skin disorders. Eye disorders.</td>
</tr>
<tr>
<td>Toxicologically synergistic products</td>
<td>None known.</td>
</tr>
<tr>
<td>Toxicokinetics, metabolism and distribution</td>
<td>See ingredients information below.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Toxicokinetics, metabolism and distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium phosphate dibasic</td>
<td>Phosphates are widely utilized by cells for metabolism of proteins, fats and carbohydrates.</td>
</tr>
</tbody>
</table>
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| (30 - 40%) | CAS#: 7558-79-4 |
| Disodium EDTA | EDTA and related compounds are poorly absorbed by the digestive system. |
| (1 - 5%) | CAS#: 139-33-3 |

**Product Acute Toxicity Data**

**Oral Exposure Route**
No data available

**Dermal Exposure Route**
No data available

**Inhalation (Dust/Mist) Exposure Route**
No data available

**Inhalation (Vapor) Exposure Route**
No data available

**Inhalation (Gas) Exposure Route**
No data available

The following values are calculated based on chapter 3.1 of the GHS document:

| ATEmix (oral) | 19,881.00 mg/kg |

**Ingredient Acute Toxicity Data**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Toxicological effects</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt of N,N-Diethyl-p-Phenyl enediamine (1 - 5%)</td>
<td>Rat LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>695 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>No information available</td>
</tr>
<tr>
<td>Disodium EDTA (1 - 5%)</td>
<td>Rat LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>2000 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>Sodium phosphate dibasic (30 - 40%)</td>
<td>Rat LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>17000 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>Salt of N,N-Diethyl-p-Phenyl enediamine (1 - 5%)</td>
<td>Rat LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>970 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>No information available</td>
</tr>
<tr>
<td>Disodium EDTA (1 - 5%)</td>
<td>Rabbit LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>2300 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
</tbody>
</table>

**Dermal Exposure Route**
No data available

**Inhalation (Dust/Mist) Exposure Route**
No data available

**Inhalation (Vapor) Exposure Route**
No data available

**Inhalation (Gas) Exposure Route**
No data available

**Product Skin Corrosion/Irritation Data**
No data available.
### Ingredient Skin Corrosion/Irritation Data
If available, see data below

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Test method</th>
<th>Species</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Results</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium phosphate dibasic (30 - 40%) CAS#: 7558-79-4</td>
<td>Standard Draize Test</td>
<td>Rabbit</td>
<td>500 mg</td>
<td>24 hours</td>
<td>Skin irritant</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>Disodium EDTA (1 - 5%) CAS#: 139-33-3</td>
<td>Standard Draize Test</td>
<td>Rabbit</td>
<td>500 mg</td>
<td>20 hours</td>
<td>Not corrosive or irritating to skin</td>
<td>ECHA (The European Chemicals Agency)</td>
</tr>
</tbody>
</table>

### Product Serious Eye Damage/Eye Irritation Data
No data available.

### Ingredient Eye Damage/Eye Irritation Data
If available, see data below

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Test method</th>
<th>Species</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Results</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium phosphate dibasic (30 - 40%) CAS#: 7558-79-4</td>
<td>Standard Draize Test</td>
<td>Rabbit</td>
<td>500 mg</td>
<td>24 hours</td>
<td>Eye irritant</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>Disodium EDTA (1 - 5%) CAS#: 139-33-3</td>
<td>Standard Draize Test</td>
<td>Rabbit</td>
<td>50 mg</td>
<td>None reported</td>
<td>Mild eye irritant</td>
<td>ECHA (The European Chemicals Agency)</td>
</tr>
</tbody>
</table>

### Sensitization Information

#### Product Sensitization Data

- **Skin Sensitization Exposure Route**: No data available.
- **Respiratory Sensitization Exposure Route**: No data available.

#### Ingredient Sensitization Data

- **Skin Sensitization Exposure Route**: No data available.
- **Respiratory Sensitization Exposure Route**: No data available.

### Chronic Toxicity Information

#### Product Repeat Dose Toxicity Data

- **Oral Exposure Route**: No data available.
- **Dermal Exposure Route**: No data available.
- **Inhalation (Dust/Mist) Exposure Route**: No data available.
- **Inhalation (Vapor) Exposure Route**: No data available.
- **Inhalation (Gas) Exposure Route**: No data available.

#### Ingredient Repeat Dose Toxicity Data
Product Code(s) 1407799
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Oral Exposure Route
No data available

Dermal Exposure Route
No data available

Inhalation (Dust/Mist) Exposure Route
No data available

Inhalation (Vapor) Exposure Route
No data available

Inhalation (Gas) Exposure Route
No data available

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium phosphate dibasic</td>
<td>7558-79-4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Salt of N,N-Diethyl-p-Phenylene diamine</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Disodium EDTA</td>
<td>139-33-3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Legend

ACGIH (American Conference of Governmental Industrial Hygienists) Does not apply
IARC (International Agency for Research on Cancer) Does not apply
NTP (National Toxicology Program) Does not apply
OSHA (Occupational Safety and Health Administration of the US Department of Labor) Does not apply

Product Carcinogenicity Data
No data available

Oral Exposure Route
No data available

Dermal Exposure Route
No data available

Inhalation (Dust/Mist) Exposure Route
No data available

Inhalation (Vapor) Exposure Route
No data available

Inhalation (Gas) Exposure Route
No data available

Ingredient Carcinogenicity Data

Oral Exposure Route
No data available

Dermal Exposure Route
No data available

Inhalation (Dust/Mist) Exposure Route
No data available

Inhalation (Vapor) Exposure Route
No data available

Inhalation (Gas) Exposure Route
No data available

Product Germ Cell Mutagenicity invitro Data
No data available.

Ingredient Germ Cell Mutagenicity invitro Data
If available, see data below

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Test</th>
<th>Cell Strain</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Results</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium EDTA</td>
<td>Cytogenetic</td>
<td>Hamster lung</td>
<td>200 mg/L</td>
<td>None</td>
<td>Positive test result for RTECS (Registry)</td>
<td></td>
</tr>
<tr>
<td>(1 - 5%) CAS#: 139-33-3</td>
<td>analysis</td>
<td>reported</td>
<td>mutagenicity of Toxic Effects of Chemical Substances</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>----------</td>
<td>----------</td>
<td>---------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral Exposure Route</td>
<td>No data available</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal Exposure Route</td>
<td>No data available</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalation (Dust/Mist) Exposure Route</td>
<td>No data available</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalation (Vapor) Exposure Route</td>
<td>No data available</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalation (Gas) Exposure Route</td>
<td>No data available</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Ingredient Germ Cell Mutagenicity/invivoData**

| Oral Exposure Route | No data available |          |                                                   |
| Dermal Exposure Route | No data available |          |                                                   |
| Inhalation (Dust/Mist) Exposure Route | No data available |          |                                                   |
| Inhalation (Vapor) Exposure Route | No data available |          |                                                   |
| Inhalation (Gas) Exposure Route | No data available |          |                                                   |
| Oral Exposure Route | No data available |          |                                                   |

**Ingredient Reproductive Toxicity Data**

| Oral Exposure Route | No data available |          |                                                   |
| Dermal Exposure Route | No data available |          |                                                   |
| Inhalation (Dust/Mist) Exposure Route | No data available |          |                                                   |
| Inhalation (Vapor) Exposure Route | No data available |          |                                                   |
| Inhalation (Gas) Exposure Route | No data available |          |                                                   |

### 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Based on the classification principles, not classified as hazardous to the environment.

**Product Ecological Data**

**Aquatic toxicity**

**Fish**

No data available

**Crustacea**

No data available

**Algae**

No data available
Terrestrial toxicity

Soil No data available
Vertebrates No data available
Invertebrates No data available

Ingredient Ecological Data

Aquatic toxicity

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Exposure time</th>
<th>Species</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium EDTA (1 - 5%) CAS#: 139-33-3</td>
<td>96 hours</td>
<td><em>Lepomis macrochirus</em></td>
<td>LC$_{50}$</td>
<td>159 mg/L</td>
<td>Vendor SDS</td>
</tr>
</tbody>
</table>

Crustacea No data available

Algae If available, see ingredient data below

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Exposure time</th>
<th>Species</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium EDTA (1 - 5%) CAS#: 139-33-3</td>
<td>72 Hours</td>
<td>None reported</td>
<td>EC$_{50}$</td>
<td>10 mg/L</td>
<td>Vendor SDS</td>
</tr>
</tbody>
</table>

Terrestrial toxicity

Soil No data available
Vertebrates No data available
Invertebrates No data available

Other Information

Persistence and degradability
None known.

Product Biodegradability Data
No data available.

Ingredient Biodegradability Data
No data available

Bioaccumulation
None known.

Product Bioaccumulation Data
No data available.

Ingredient Bioaccumulation Data
No data available

Additional information
Product Code(s) 1407799  Product Name DPD Free Chlorine Reagent
Issue Date 09-Aug-2016  Revision Date 07-Nov-2016
Version 8  Page 13 / 16

Product Information
No data available

Partition Coefficient (n-octanol/water)
No data available

Ingredient Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Partition Coefficient (n-octanol/water)</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt of N,N-Diethyl-p-Phenylenediamine (1 - 5%)</td>
<td>Partition coefficient</td>
<td>No information available</td>
</tr>
<tr>
<td>CAS#: -</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disodium EDTA (1 - 5%)</td>
<td>log $K_{ow} &lt; 0$</td>
<td>No information available</td>
</tr>
<tr>
<td>CAS#: 139-33-3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mobility
Mobility in soil: Moderate to high mobility. If available, see ingredient data below.

Product Information
No data available

Soil Organic Carbon-Water Partition Coefficient
No data available

Ingredient Information

<table>
<thead>
<tr>
<th>Chemical Name (1 - 5%)</th>
<th>Soil Organic Carbon-Water Partition Coefficient</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium EDTA (1 - 5%)</td>
<td>log $K_{oc} &lt; 0$</td>
<td>No information available</td>
</tr>
<tr>
<td>CAS#: 139-33-3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional information

Water solubility

Product Information

<table>
<thead>
<tr>
<th>Water solubility classification</th>
<th>Water solubility</th>
<th>Water Solubility Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soluble</td>
<td>&gt; 1000 mg/L</td>
<td>25 °C / 77 °F</td>
</tr>
</tbody>
</table>

Ingredient Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Water solubility classification</th>
<th>Water solubility</th>
<th>Water solubility temperature °C</th>
<th>Water solubility temperature °F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium phosphate dibasic</td>
<td>Completely soluble</td>
<td>118000 mg/L</td>
<td>20 °C</td>
<td>68 °F</td>
</tr>
<tr>
<td>CAS#: 7558-79-4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salt of N,N-Diethyl-p-Phenylenediamine</td>
<td>Completely soluble</td>
<td>&gt; 10000 mg/L</td>
<td>25 °C</td>
<td>77 °F</td>
</tr>
<tr>
<td>CAS#: -</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disodium EDTA (1 - 5%)</td>
<td>Completely soluble</td>
<td>100000 mg/L</td>
<td>20 °C</td>
<td>68 °F</td>
</tr>
<tr>
<td>CAS#: 139-33-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other adverse effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Disposal of wastes
Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Contaminated packaging
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. Dispose of empty container as normal trash. 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. Improper disposal or reuse of this container may be dangerous and illegal. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Special instructions for 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. Check with local municipal and state authorities and waste contractors for pertinent local information regarding the proper disposal of chemicals.

14. TRANSPORT INFORMATION

DOT
Not regulated

TDG
Not regulated

IATA
Not regulated

IMDG
Not regulated

Note:
No special precautions necessary.

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

15. REGULATORY INFORMATION

National Inventories
TSCA
Complies

DSL/NDSL
Complies

TSCA- United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL- Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories
EINECS/ELINCS
Complies

ENCs
Complies

IECSC
Complies

KECL
Complies

PICCS
Complies

TCSI
Complies

AICS
Complies

NZIoC
Complies

EINECS/ELINCS- European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCs- Japan Existing and New Chemical Substances
IECSC- China Inventory of Existing Chemical Substances
KECL- Korean Existing and Evaluated Chemical Substances
SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories
- Acute health hazard: Yes
- Chronic Health Hazard: No
- Fire hazard: No
- Sudden release of pressure hazard: No
- Reactive Hazard: No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
<th>CWA - Hazardous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium phosphate dibasic</td>
<td>5000 lb</td>
<td>-</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>7558-79-4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA/SARA RQ</th>
<th>Reportable Quantity (RQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium phosphate dibasic</td>
<td>5000 lb</td>
<td>-</td>
<td>RQ 5000 lb final RQ</td>
</tr>
<tr>
<td>7558-79-4</td>
<td></td>
<td></td>
<td>RQ 2270 kg final RQ</td>
</tr>
</tbody>
</table>

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

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.

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium phosphate dibasic</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>7558-79-4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

U.S. EPA Label Information
16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA and HMIS Classifications

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health hazards</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical and Chemical Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HMIS</td>
<td>Health hazards</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key or legend to abbreviations and acronyms used in the safety data sheet

- **NIOSH IDLH** Immediately Dangerous to Life or Health
- **ACGIH** ACGIH (American Conference of Governmental Industrial Hygienists)
- **NDF** no data

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>TWA</th>
<th>MAC</th>
<th>X</th>
<th>SKN*</th>
<th>RSP+</th>
<th>C</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEL (time-weighted average)</td>
<td>Maximum Allowable Concentration</td>
<td>Listed</td>
<td>Skin designation</td>
<td>Respiratory sensitization</td>
<td>Carcinogen</td>
<td>mutagen</td>
</tr>
</tbody>
</table>

Prepared By
Hach Product Compliance Department

Issue Date 09-Aug-2016

Revision Date 07-Nov-2016

Revision Note None

Disclaimer

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

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End of Safety Data Sheet