



Be Right™

# SAFETY DATA SHEET

Issue Date 22-Jun-2016

Revision Date 16-Nov-2016

Version 2

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## 1. IDENTIFICATION

### Product identifier

**Product Name** PAN Indicator Solution 0.1%

### Other means of identification

**Product Code(s)** 2122432

**Safety data sheet number** M00388

### Recommended use of the chemical and restrictions on use

**Recommended Use** Laboratory reagent. Determination of manganese.

**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)

Serious eye damage/eye irritation	Category 1
Reproductive toxicity	Category 1B

#### **Hazards not otherwise classified (HNOC)**

Not applicable

#### **Label elements**

**Signal word - Danger**



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**Hazard statements**

H318 - Causes serious eye damage  
H360 - May damage fertility or the unborn child

**Precautionary statements**

P201 - Obtain special instructions before use  
P202 - Do not handle until all safety precautions have been read and understood  
P281 - Use personal protective equipment as required  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P310 - Immediately call a POISON CENTER or doctor/physician  
P308 + P313 - IF exposed or concerned: Get medical advice/attention  
P405 - Store locked up  
P501 - Dispose of contents/ container to an approved waste disposal plant

**Other Information**

May be harmful in contact with skin  
Very toxic to aquatic life with long lasting effects  
Toxic to aquatic life

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Substance**

Not applicable

**Mixture**

Percent ranges are used where confidential product information is applicable.

Chemical Name	CAS No	Percent Range	HMRIC #
N,N-Dimethylformamide	68-12-2	20 - 30%	-
Ammonium acetate	631-61-8	20 - 30%	-
Octylphenol ethoxylate	9036-19-5	7 - 13%	-

## 4. FIRST AID MEASURES

### Description of first aid measures

<b>General advice</b>	In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
<b>Eye contact</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
<b>Skin contact</b>	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If symptoms persist, call a physician.
<b>Inhalation</b>	IF INHALED: Remove person to fresh air and keep comfortable for breathing. If symptoms persist, call a physician.
<b>Ingestion</b>	IF SWALLOWED: Rinse Mouth. If symptoms persist, call a physician.
<b>Self-protection of the first aider</b>	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

Water. Alcohol foam. Dry chemical. Carbon dioxide. Use. Dry chemical. Carbon dioxide (CO<sub>2</sub>). Water spray (fog). Alcohol resistant foam.

**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. Nitric acid. Metal nitrates. Strong oxidizers. Alkali metals. Keep product and empty container away from heat and sources of ignition. Risk of ignition.

### Hazardous combustion products

dimethylamine. Nitrogen oxides. Carbon monoxide. Carbon dioxide (CO<sub>2</sub>).

### 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** Avoid release to the environment. 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. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up** Neutralize spill if necessary. Soak up with inert absorbent material. 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

**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 container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers. Keep away from heat.

**Flammability class** Class IIIB

**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.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
N,N-Dimethylformamide 20 - 30%	TWA: 10 ppm S*	TWA: 10 ppm TWA: 30 mg/m <sup>3</sup> (vacated) TWA: 10 ppm (vacated) TWA: 30 mg/m <sup>3</sup> (vacated) SKN* *	IDLH: 500 ppm TWA: 10 ppm TWA: 30 mg/m <sup>3</sup>

Chemical Name	Alberta OEL	British Columbia	Manitoba OEL	New Brunswick	New Foundland &
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		OEL		OEL	Labrador OEL
N,N-Dimethylformamide 20 - 30%	TWA: 10 ppm TWA: 30 mg/m <sup>3</sup> SKN*	TWA: 10 ppm SKN*	TWA: 10 ppm SKN*	TWA: 10 ppm TWA: 30 mg/m <sup>3</sup> SKN*	TWA: 10 ppm SKN*

Chemical Name	Northwest Territories OEL	Nova Scotia OEL	Nunavut OEL	Ontario TWA	Prince Edward Island OEL
N,N-Dimethylformamide 20 - 30%	TWA: 10 ppm STEL: 15 ppm SKN*	TWA: 10 ppm SKN*	TWA: 10 ppm STEL: 15 ppm SKN*	TWA: 10 ppm SKN*	TWA: 10 ppm

Chemical Name	Quebec OEL	Saskatchewan OEL	Yukon OEL
N,N-Dimethylformamide 20 - 30%	TWA: 10 ppm TWA: 30 mg/m <sup>3</sup> SKN*	TWA: 10 ppm STEL: 15 ppm SKN*	STEL: 20 ppm STEL: 60 mg/m <sup>3</sup> TWA: 10 ppm TWA: 30 mg/m <sup>3</sup> SKN*

**Other Information** Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

**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.

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

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

**General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Take off all contaminated clothing and wash it before reuse. Wash hands thoroughly after handling. Regular cleaning of equipment, work area and clothing is recommended.

**Environmental exposure controls**

Do not allow into any sewer, on the ground or into any body of water. Local authorities should be advised if significant spillages cannot be contained.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

**Physical state** Liquid

**Gas Under Pressure** Not classified according to GHS criteria

**Appearance** aqueous solution **Color** Dark red to orange

**Odor** Ammonia **Odor threshold** No data available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Molecular weight	No data available	
pH	8.0	
Melting point/freezing point	No data available	
Boiling point / boiling range	101 °C / 214 °F	
Evaporation rate	0.25 (water = 1)	
Vapor pressure	No data available	
Vapor density (air = 1)	No data available	
Specific gravity (water = 1 / air = 1)	1.044	
Partition Coefficient (n-octanol/water)	Not applicable	
Soil Organic Carbon-Water Partition Coefficient	Not applicable	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
Dynamic viscosity	No data available	
Kinematic viscosity	No data available	

**Solubility(ies)**

**Water solubility**

<u>Water solubility classification</u>	<u>Water solubility</u>	<u>Water Solubility Temperature</u>
Soluble	> 1000 mg/L	25 °C / 77 °F

**Solubility in other solvents**

<u>Chemical Name</u>	<u>Solubility classification</u>	<u>Solubility</u>	<u>Solubility Temperature</u>
Acid	Soluble	> 1000 mg/L	25 °C / 77 °F

**Other Information**

<b>Metal Corrosivity</b>	Not classified as corrosive to metal according to GHS criteria
<b>Steel Corrosion Rate</b>	No data available
<b>Aluminum Corrosion Rate</b>	No data available
<b>Bulk density</b>	Not applicable
<b>Explosive properties</b>	Not classified according to GHS criteria.
<b>Explosion data</b>	Can burn in fire, releasing toxic vapors.
<b>Upper explosion limit</b>	No data available
<b>Lower explosion limit</b>	No data available
<b>Flammable properties</b>	Can burn in fire, releasing toxic vapors.

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#### Flammability Limit in Air

**Upper flammability limit:** No data available

**Lower flammability limit:** No data available

**Flash point** > 94 °C / 201 °F

**Method** CC (closed cup)

**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

Heat. Heating to decomposition. Heat, flames and sparks. Contact with heat, sparks, open flames or other ignition sources.

#### Incompatible materials

Nitric acid. Metal nitrates. Halogens. Alkali metals. Oxidizers.

#### Hazardous Decomposition Products

Nitrogen oxides. Carbon dioxide. Carbon monoxide.

#### Explosive properties

Not classified according to GHS criteria. Can burn in fire, releasing toxic vapors.

**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

<b>Product Information</b>	Corrosive to eyes. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. May be harmful in contact with skin.
<b>Inhalation</b>	No known effect based on information supplied.
<b>Eye contact</b>	Corrosive to the eyes and may cause severe damage including blindness.
<b>Skin contact</b>	May be harmful in contact with skin.
<b>Ingestion</b>	No known effect based on information supplied.
<b>Aggravated Medical Conditions</b>	Eye disorders.
<b>Toxicologically synergistic products</b>	Exposure to and/or consumption of alcohol may increase toxic effects of this product.
<b>Toxicokinetics, metabolism and distribution</b>	No information available.

### 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)	5,951.00 mg/kg
ATEmix (dermal)	4,073.00 mg/kg
ATEmix (inhalation-dust/mist)	5.60 mg/L
ATEmix (inhalation-vapor)	41.00 mg/L

### Ingredient Acute Toxicity Data

#### Oral Exposure Route

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
N,N-Dimethylformamide (20 - 30%) CAS#: 68-12-2	Rat LD <sub>50</sub>	2800 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Octylphenol ethoxylate (7 - 13%) CAS#: 9036-19-5	Rat LD <sub>50</sub>	1700 mg/kg	None reported	None reported	No information available
Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Octylphenol ethoxylate (7 - 13%) CAS#: 9036-19-5	Rat LD <sub>50</sub>	4190 mg/kg	None reported	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)



**Dermal Exposure Route**

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
N,N-Dimethylformamide (20 - 30%) CAS#: 68-12-2	Rat LD <sub>50</sub>	1100 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Octylphenol ethoxylate (7 - 13%) CAS#: 9036-19-5	Rabbit LD <sub>50</sub>	> 3000 mg/kg	None reported	None reported	Vendor SDS

**Inhalation (Dust/Mist) Exposure Route**

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
N,N-Dimethylformamide (20 - 30%) CAS#: 68-12-2	Rat LC <sub>50</sub>	> 5.9 mg/L	4 hours	None reported	IUCLID (The International Uniform Chemical Information Database)

**Inhalation (Vapor) Exposure Route**

**Inhalation (Gas) Exposure Route**

No data available

**Product Skin Corrosion/Irritation Data**

Test data reported below.

Test method	Species	Reported dose	Exposure time	Results
Standard Draize Test	Human	None reported	24 hours	Mild skin irritant

**Ingredient Skin Corrosion/Irritation Data**

Toxicological data for ingredients is not indicative of likely harm.

Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
N,N-Dimethylformamide (20 - 30%) CAS#: 68-12-2	Standard Draize Test	Human	1000 mg	None reported	Mild skin irritant	RTECS (Registry of Toxic Effects of Chemical Substances)
Octylphenol ethoxylate (7 - 13%) CAS#: 9036-19-5	Existing human experience	Human	None reported	None reported	Not corrosive or irritating to skin	Vendor SDS

**Product Serious Eye Damage/Eye Irritation Data**

No data available.

Species

**Ingredient Eye Damage/Eye Irritation Data**

Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data

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N,N-Dimethylformamide (20 - 30%) CAS#: 68-12-2	Rinse Test	Rabbit	100 mg	None reported	Corrosive to eyes	RTECS (Registry of Toxic Effects of Chemical Substances)
Octylphenol ethoxylate (7 - 13%) CAS#: 9036-19-5	Standard Draize Test	Rabbit	100 mg	None reported	Corrosive to eyes	RTECS (Registry of Toxic Effects of Chemical Substances)

**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.

Chemical Name	Test method	Species	Results	Key literature references and sources for data
N,N-Dimethylformamide (20 - 30%) CAS#: 68-12-2	OECD Test No. 406: Skin Sensitization	Guinea pig	Not confirmed to be a skin sensitizer	IUCLID (The International Uniform Chemical Information Database)

**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**

**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

Chemical Name	CAS No	ACGIH	IARC	NTP	OSHA
N,N-Dimethylformamide	68-12-2	-	Group 2A	-	X
Ammonium acetate	631-61-8	-	-	-	-
Octylphenol ethoxylate	9036-19-5	-	-	-	-

**Legend**

<b>ACGIH (American Conference of Governmental Industrial Hygienists)</b>	Does not apply
<b>IARC (International Agency for Research on Cancer)</b>	Not classifiable as a human carcinogen Group 2A - Probably Carcinogenic to Humans
<b>NTP (National Toxicology Program)</b>	Does not apply
<b>OSHA (Occupational Safety and Health Administration of the US Department of Labor)</b>	X - Present

**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**

Toxicological data for ingredients is not indicative of likely harm.

Chemical Name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
N,N-Dimethylformamide (20 - 30%) CAS#: 68-12-2	Mutation in microorganisms	<i>Salmonella typhimurium</i>	None reported	None reported	Negative test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)
Octylphenol ethoxylate (7 - 13%) CAS#: 9036-19-5	DNA inhibition	Human lymphocyte	5 mg/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)
Chemical Name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Octylphenol ethoxylate (7 - 13%) CAS#: 9036-19-5	DNA inhibition	Mouse cells - not specified	10 mg/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)

**Oral Exposure Route** No data available

**Dermal Exposure Route** No data available

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Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

**Ingredient Germ Cell Mutagenicity *in vivo* Data**

Oral Exposure Route Toxicological data for ingredients is not indicative of likely harm.

Chemical Name	Test	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Octylphenol ethoxylate (7 - 13%) CAS#: 9036-19-5	None reported	Rat	10200 mg/kg	None reported	Positive test result for mutagenicity	Vendor SDS

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

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 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

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
N,N-Dimethylformamide (20 - 30%) CAS#: 68-12-2	Mouse TD <sub>Lo</sub>	50 mg/L	6 hours	<b>Paternal Effects</b> Spermatogenesis (including genetic material, sperm morphology, motility, and count)	RTECS (Registry of Toxic Effects of Chemical Substances)

Inhalation (Gas) Exposure Route No data available

**12. ECOLOGICAL INFORMATION**

Ecotoxicity Very toxic to aquatic life with long lasting effects.

**Product Ecological Data**

Aquatic toxicity

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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**

**Fish**

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
N,N-Dimethylformamide (20 - 30%) CAS#: 68-12-2	96 hours	<i>Lepomis macrochirus</i>	LC <sub>50</sub>	7100 mg/L	PEEN (Pan European Ecological Network)
Octylphenol ethoxylate (7 - 13%) CAS#: 9036-19-5	96 hours	<i>Lepomis macrochirus</i>	LC <sub>50</sub>	> 10 mg/L	Vendor SDS
Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Ammonium acetate (20 - 30%) CAS#: 631-61-8	48 hours	<i>Cyprinus carpio</i>	LC <sub>50</sub>	56 mg/L	Vendor SDS
Octylphenol ethoxylate (7 - 13%) CAS#: 9036-19-5	96 hours	<i>Pimephales promelas</i>	LC <sub>50</sub>	>= 4 mg/L	No information available
Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Octylphenol ethoxylate (7 - 13%) CAS#: 9036-19-5	7 days	<i>Oncorhynchus mykiss</i>	NOEC	0.004 mg/L	EPA (United States Environmental Protection Agency)

**Crustacea**

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
N,N-Dimethylformamide (20 - 30%) CAS#: 68-12-2	48 Hours	<i>Daphnia magna</i>	EC <sub>50</sub>	7500 mg/L	PEEN (Pan European Ecological Network)
Octylphenol ethoxylate (7 - 13%) CAS#: 9036-19-5	48 Hours	<i>Daphnia magna</i>	EC <sub>50</sub>	>= 18 mg/L	ERMA (New Zealand's Environmental Risk Management Authority)

**Algae**

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
N,N-Dimethylformamide	96 hours	<i>Scenedesmus subspicatus</i>	EC <sub>50</sub>	> 500 mg/L	PEEN (Pan European Ecological Network)

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de (20 - 30%) CAS#: 68-12-2					Network)
Octylphenol ethoxylate (7 - 13%) CAS#: 9036-19-5	96 hours	<i>Selenastrum sp.</i>	EC <sub>50</sub>	0.21 mg/L	Vendor SDS

**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**

Has the potential to bioaccumulate according to GHS criteria.

**Product Bioaccumulation Data** Test data reported below.

**Ingredient Bioaccumulation Data** No data available

**Additional information**

**Product Information**

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

**Ingredient Information**

Chemical Name	Partition Coefficient (n-octanol/water)	Method
N,N-Dimethylformamide (20 - 30%) CAS#: 68-12-2	log K <sub>ow</sub> = 0.75	No information available

**Mobility**

If available, see ingredient data below.

**Product Information**

**Soil Organic Carbon-Water Partition Coefficient** Not applicable

**Ingredient Information** No data available

### Additional information

#### Water solubility

#### Product Information

Water solubility classification	Water solubility	Water Solubility Temperature
Soluble	> 1000 mg/L	25 °C / 77 °F

#### Ingredient Information

Chemical Name	Water solubility classification	Water solubility	Water solubility temperature °C	Water solubility temperature °F
N,N-Dimethylformamide CAS#: 68-12-2	Soluble	> 1000 mg/L	25 °C	77 °F
Ammonium acetate CAS#: 631-61-8	Soluble	> 1000 mg/L	25 °C	77 °F
Octylphenol ethoxylate CAS#: 9036-19-5	Soluble	> 1000 mg/L	25 °C	77 °F

#### Other adverse effects

Contains a substance with an endocrine-disrupting potential.

Chemical Name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disrupters - Evaluated Substances	Endocrine disrupting potential
N,N-Dimethylformamide (20 - 30%) CAS#: 68-12-2	Group III Chemical	-	-
Octylphenol ethoxylate (7 - 13%) CAS#: 9036-19-5	Group III Chemical	-	-

## 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

Dispose of material in an E.P.A. approved hazardous waste facility.

## 14. TRANSPORT INFORMATION

#### DOT

Not regulated

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**TDG** Not regulated  
**IATA** Not regulated  
**IMDG** Not regulated  
**Marine pollutant** This material meets the definition of a marine pollutant

#### **Additional information**

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a 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

**PICCS-** Philippines Inventory of Chemicals and Chemical Substances

**TCSI-** Taiwan Chemical Substances Inventory

**AICS-** Australian Inventory of Chemical Substances

**NZIoC-** New Zealand Inventory of Chemicals

#### **US Federal Regulations**

##### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

<b>Chemical Name</b>	<b>SARA 313 - Threshold Values %</b>
N,N-Dimethylformamide (CAS #: 68-12-2)	1.0
Ammonium acetate (CAS #: 631-61-8)	1.0

##### **SARA 311/312 Hazard Categories**

**Acute health hazard** Yes  
**Chronic Health Hazard** Yes  
**Fire hazard** No  
**Sudden release of pressure hazard** No  
**Reactive Hazard** No

##### **CWA (Clean Water Act)**



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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)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Ammonium acetate 631-61-8	5000 lb	-	-	X

**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

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
N,N-Dimethylformamide 68-12-2	100 lb	-	RQ 100 lb final RQ RQ 45.4 kg final RQ
Ammonium acetate 631-61-8	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

**US State Regulations**

**California Proposition 65**

This product does not contain any Proposition 65 chemicals

**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
N,N-Dimethylformamide 68-12-2	X	X	X
Ammonium acetate 631-61-8	X	X	X

**U.S. EPA Label Information**

**EPA Pesticide Registration Number** Not applicable

**16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION**

**NFPA and HMIS Classifications**

<b>NFPA</b>	<b>Health hazards - 3</b>	<b>Flammability - 1</b>	<b>Instability - 0</b>	<b>Physical and Chemical Properties -</b>
<b>HMIS</b>	<b>Health hazards - 3</b>	<b>Flammability - 1</b>	<b>Physical hazards - 0</b>	<b>Personal protection - X</b> - See section 8 for more information

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

*NIOSH IDLH*  
*ACGIH*  
*NDF*

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

**Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

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TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
MAC	Maximum Allowable Concentration	Ceiling	Ceiling Limit Value
X	Listed	Vacated	These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.
SKN*	Skin designation	SKN+	Skin sensitization
RSP+	Respiratory sensitization	**	Hazard Designation
C	Carcinogen	R	Reproductive toxicant
M	mutagen		

**Prepared By** Hach Product Compliance Department

**Issue Date** 22-Jun-2016

**Revision Date** 16-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.

**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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**End of Safety Data Sheet**