



**Be Right™**

# SAFETY DATA SHEET

**Issue Date** 12-May-2021

**Revision Date** 26-Jan-2024

**Version** 2.9

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## 1. IDENTIFICATION

**Product identifier**

**Product Name** BOD Nutrient Buffer Pillows

**Other means of identification**

**Product Code(s)** 1486166

**Safety data sheet number** M00589

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

**Recommended Use** Water Analysis. Determination of biochemical oxygen demand.

**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, +1(970) 669-3050

**Emergency telephone number**

+1(303) 623-5716 - 24 Hour Service

## 2. HAZARDS IDENTIFICATION

**Classification**

**Regulatory Status**

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

**Hazards not otherwise classified (HNOC)**

Not applicable

**Label elements**

**Signal word**

None

**Hazard statements**

The product contains no substances which at their given concentration, are considered to be hazardous to health

**Other Hazards Known**

Causes mild skin irritation

## 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 #
Magnesium sulfate	7487-88-9	1 - 5%	-
Phosphoric acid, disodium salt	7558-79-4	1 - 5%	-
Ammonium chloride	12125-02-9	<1%	-
Iron trichloride	7705-08-0	<0.1%	-

#### 4. FIRST AID MEASURES

##### Description of first aid measures

<b>General advice</b>	No hazards which require special first aid measures. Use first aid treatment according to the nature of the injury.
<b>Inhalation</b>	Remove to fresh air.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
<b>Skin contact</b>	Wash skin with soap and water.
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water.

##### Most important symptoms and effects, both acute and delayed

**Symptoms** See Section 11 for additional Toxicological Information.

##### Indication of any immediate medical attention and special treatment needed

**Note to physicians** Treat symptomatically.

#### 5. FIRE-FIGHTING MEASURES

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Unsuitable Extinguishing Media</b>	Caution: Use of water spray when fighting fire may be inefficient.
<b>Specific hazards arising from the chemical</b>	No information available.
<b>Hazardous combustion products</b>	No information available.
<b>Special protective equipment for fire-fighters</b>	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

#### 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.

#### Personal precautions, protective equipment and emergency procedures

**Personal precautions** Ensure adequate ventilation.

#### 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.

**Methods for cleaning up** Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Take up mechanically, placing in appropriate containers for disposal.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

**Reference to other sections** See section 8 for more information. See section 13 for more information.

## 7. HANDLING AND STORAGE

#### Precautions for safe handling

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice.

#### Conditions for safe storage, including any incompatibilities

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

**Flammability class** Not applicable

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Control parameters

#### Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Ammonium chloride CAS#: 12125-02-9	STEL: 20 mg/m <sup>3</sup> fume TWA: 10 mg/m <sup>3</sup> fume	(vacated) TWA: 10 mg/m <sup>3</sup> (vacated) STEL: 20 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup> fume STEL: 20 mg/m <sup>3</sup> fume
Iron trichloride CAS#: 7705-08-0	TWA: 1 mg/m <sup>3</sup> Fe	(vacated) TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> Fe

#### Appropriate engineering controls

#### **Engineering Controls**

Showers  
Eyewash stations  
Ventilation systems. Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

<b>Respiratory protection</b>	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. Ensure adequate ventilation.
<b>Hand Protection</b>	Wear suitable gloves. Barrier creams may help to protect the exposed areas of skin. Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374-1:2016.
<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles).
<b>Skin and body protection</b>	No special protective equipment required. Avoid contact with eyes, skin and clothing.
<b>General Hygiene Considerations</b>	Handle in accordance with good industrial hygiene and safety practice.
<b>Environmental exposure controls</b>	Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.
<b>Thermal hazards</b>	None under normal processing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical state</b>	Liquid	<b>Color</b>	white
<b>Appearance</b>	Turbid solution aqueous solution	<b>Odor threshold</b>	No data available
<b>Odor</b>	Odorless		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>Molecular weight</b>	No data available	
<b>pH</b>	7.6	@ 20 °C
<b>Melting point / freezing point</b>	~ -4 °C / 24.8 °F	
<b>Initial boiling point and boiling range</b>	~ 101 °C / 213.8 °F	
<b>Evaporation rate</b>	0.72 (water = 1)	
<b>Vapor pressure</b>	17.177 mm Hg / 2.29 kPa at 20 °C / 68 °F	
<b>Relative vapor density</b>	0.62	
<b>Specific gravity - VALUE 1</b>	1.057	
<b>Partition coefficient</b>	Not applicable	
<b>Soil Organic Carbon-Water Partition Coefficient</b>	Not applicable	
<b>Autoignition temperature</b>	No data available	
<b>Decomposition temperature</b>	No data available	
<b>Dynamic viscosity</b>	No data available	
<b>Kinematic viscosity</b>	No data available	

### Solubility(ies)

#### Water solubility

Water solubility classification	Water solubility	Water Solubility Temperature
No information available	No data available	No information available

#### Solubility in other solvents

Chemical Name	Solubility classification	Solubility	Solubility Temperature
Acid	Soluble	> 1000 mg/L	25 °C / 77 °F
Aqueous alkaline solutions	Soluble	> 1000 mg/L	25 °C / 77 °F
Ethyl alcohol	Slightly soluble	> 0.1 mg/L	25 °C / 77 °F

#### Other information

##### Metal Corrosivity

Steel Corrosion Rate No data available  
Aluminum Corrosion Rate No data available

##### Volatile Organic Compounds (VOC) Content

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Magnesium sulfate	7487-88-9	No data available	-
Phosphoric acid, disodium salt	7558-79-4	No data available	-
Ammonium chloride	12125-02-9	No data available	-
Iron trichloride	7705-08-0	No data available	-

##### Explosive properties

Upper explosion limit No data available  
Lower explosion limit No data available

##### Flammable properties

Flash point No data available

##### Flammability Limit in Air

Upper flammability limit: No data available  
Lower flammability limit: No data available

##### Oxidizing properties

No data available.

##### Bulk density

No data available

## 10. STABILITY AND REACTIVITY

##### Reactivity

Not applicable.

##### Chemical stability

Stable under normal conditions.

##### Explosion data

Sensitivity to Mechanical Impact None.

**Sensitivity to Static Discharge** None.

**Possibility of hazardous reactions**

None under normal processing.

**Hazardous polymerization**

None under normal processing.

**Conditions to avoid**

None known based on information supplied.

**Incompatible materials**

Strong oxidizing agents, strong acids, and strong bases.

**Hazardous decomposition products**

None known based on information supplied.

**11. TOXICOLOGICAL INFORMATION**

**Information on likely routes of exposure**

**Product Information**

**Inhalation** No known effect based on information supplied.

**Eye contact** No known effect based on information supplied.

**Skin contact** No known effect based on information supplied.

**Ingestion** No known effect based on information supplied.

**Symptoms** No information available.

**Acute toxicity**

Based on available data, the classification criteria are not met

**Mixture**

No data available.

**Ingredient Acute Toxicity Data**

Test data reported below.

**Oral Exposure Route**

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Ammonium chloride (<1%) CAS#: 12125-02-9	Rat LD <sub>50</sub>	1650 mg/kg	None reported	None reported	IUCLID
Iron trichloride (<0.1%) CAS#: 7705-08-0	Rat LD <sub>50</sub>	450 mg/kg	None reported	None reported	LOLI

**Unknown Acute Toxicity**

0% of the mixture consists of ingredient(s) of unknown toxicity.

**Acute Toxicity Estimations (ATE)**

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

<b>ATEmix (oral)</b>	No information available mg/kg
<b>ATEmix (dermal)</b>	No information available
<b>ATEmix (inhalation-dust/mist)</b>	No information available
<b>ATEmix (inhalation-vapor)</b>	No information available
<b>ATEmix (inhalation-gas)</b>	No information available

**Skin corrosion/irritation**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

**Ingredient Skin Corrosion/Irritation Data**

Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Phosphoric acid, disodium salt (1 - 5%) CAS#: 7558-79-4	Standard Draize Test	Rabbit	500 mg	24 hours	Skin irritant	RTECS
Ammonium chloride (<1%) CAS#: 12125-02-9	Existing human experience	Human	None reported	None reported	Mild skin irritant	RTECS

**Serious eye damage/irritation**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

**Ingredient Eye Damage/Eye Irritation Data**

Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Phosphoric acid, disodium salt (1 - 5%) CAS#: 7558-79-4	Standard Draize Test	Rabbit	500 mg	24 hours	Eye irritant	RTECS

**Respiratory or skin sensitization**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

**Ingredient Sensitization Data**

Test data reported below.

**Skin Sensitization Exposure Route**

Chemical name	Test method	Species	Results	Key literature references and sources for data
Ammonium chloride (<1%) CAS#: 12125-02-9	OECD Test No. 406: Skin Sensitization	Guinea pig	Not confirmed to be a skin sensitizer	OECD 429: Skin Sensitization: Local Lymph Node Assay

**STOT - single exposure**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

**Ingredient Specific Target Organ Toxicity Single Exposure Data**

Test data reported below.

**Oral Exposure Route**

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Ammonium chloride (<1%) CAS#: 12125-02-9	Domestic mammal - Not specified LD <sub>Lo</sub>	1500 mg/kg	None reported	None reported	RTECS
Iron trichloride (<0.1%) CAS#: 7705-08-0	Woman LD <sub>Lo</sub>	4 mg/kg	None reported	<b>Lungs, Thorax, or Respiration</b> Dyspnea <b>Gastrointestinal</b> Nausea or vomiting <b>Nutritional and Gross Metabolic</b> Metabolic acidosis	RTECS

**STOT - repeated exposure**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

**Ingredient Specific Target Organ Toxicity Repeat Exposure Data**

Test data reported below.

**Oral Exposure Route**

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Ammonium chloride (<1%) CAS#: 12125-02-9	Rat TD <sub>Lo</sub>	3500 mg/kg	7 days	No toxicological effects observed	RTECS
Iron trichloride (<0.1%) CAS#: 7705-08-0	Rat TD <sub>Lo</sub>	7728 mg/kg	210 days	<b>Behavioral</b> Fluid intake <b>Biochemical</b> Enzyme inhibition, induction, or change in blood or tissue levels (true cholinesterase) <b>Blood</b> Changes in blood leukocyte count	RTECS

**Carcinogenicity**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

**Ingredient Carcinogenicity Data**

No data available.

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
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Magnesium sulfate	7487-88-9	-	-	-	-
Phosphoric acid, disodium salt	7558-79-4	-	-	-	-
Ammonium chloride	12125-02-9	-	-	-	-
Iron trichloride	7705-08-0	-	-	-	-

**Legend**

<b>ACGIH (American Conference of Governmental Industrial Hygienists)</b>	Does not apply
<b>IARC (International Agency for Research on Cancer)</b>	Does not apply
<b>NTP (National Toxicology Program)</b>	Does not apply
<b>OSHA</b>	Does not apply

**Germ cell mutagenicity**

Based on available data, the classification criteria are not met.

**Mixture invitro Data**

No data available.

**Substance invitro Data**

Test data reported below.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Ammonium chloride (<1%) CAS#: 12125-02-9	OECD 471	<i>Salmonella typhimurium</i>	5 mg/plate	72 hours	Negative	RTECS
Iron trichloride (<0.1%) CAS#: 7705-08-0	DNA inhibition	Human lymphocyte	4800 mmol/L	None reported	Positive test result for mutagenicity	RTECS

**Mixture invivo Data**

No data available.

**Substance invivo Data**

No data available.

**Reproductive toxicity**

Based on available data, the classification criteria are not met.

**Mixture**

No data available.

**Ingredient Reproductive Toxicity Data**

Test data reported below.

**Oral Exposure Route**

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Ammonium chloride (<1%) CAS#: 12125-02-9	Rat NOAEL	1500 mg/kg	16 days	None reported	ECHA

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Based on available data, the classification criteria are not met.

**Unknown aquatic toxicity**

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

**Mixture**

**Aquatic Acute Toxicity**

No data available.

**Aquatic Chronic Toxicity**

No data available.

**Substance**

**Aquatic Acute Toxicity**

Test data reported below.

**Fish**

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Magnesium sulfate (1 - 5%) CAS#: 7487-88-9	96 hours	<i>Gambusia affinis</i>	LC <sub>50</sub>	15500 mg/L	IUCLID
Ammonium chloride (<1%) CAS#: 12125-02-9	96 hours	<i>Oncorhynchus mykiss</i>	LC <sub>50</sub>	42.91 mg/L	ECHA

**Crustacea**

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Ammonium chloride (<1%) CAS#: 12125-02-9	48 Hours	<i>Daphnia magna</i>	LC <sub>50</sub>	161 mg/L	IUCLID

**Algae**

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Magnesium sulfate (1 - 5%) CAS#: 7487-88-9	72 Hours	<i>Scenedesmus subspicatus</i>	EC <sub>50</sub>	2700 mg/L	IUCLID
Iron trichloride (<0.1%) CAS#: 7705-08-0	96 hours	<i>Chlorella vulgaris</i>	EC <sub>50</sub>	1421.3 mg/L	IUCLID

**Aquatic Chronic Toxicity**

No data available.

**Persistence and degradability**

**Mixture**

No data available.

**Bioaccumulation**

There is no data for this product

**Mixture**

No data available.

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**Partition coefficient** Not applicable

**Mobility**

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

**Other adverse effects**  
No information available

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

**Special instructions for disposal** 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  
**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 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

Chemical name	SARA 313 - Threshold Values %
Ammonium chloride (CAS #: 12125-02-9)	1.0

**SARA 311/312 Hazard Categories**

Acute health hazard No  
 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)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Phosphoric acid, disodium salt 7558-79-4	5000 lb	-	-	X
Ammonium chloride 12125-02-9	5000 lb	-	-	X
Iron trichloride 7705-08-0	1000 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)
Phosphoric acid, disodium salt 7558-79-4	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Ammonium chloride 12125-02-9	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Iron trichloride 7705-08-0	1000 lb	-	RQ 1000 lb final RQ RQ 454 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**

This product may contain substances regulated by state right-to-know regulations.

Chemical name	New Jersey	Massachusetts	Pennsylvania
Phosphoric acid, disodium salt 7558-79-4	X	X	X
Ammonium chloride 12125-02-9	X	X	X
Iron trichloride 7705-08-0	X	X	X

**U.S. EPA Label Information**

Chemical name	FIFRA	FDA
Magnesium sulfate	-	21 CFR 184.1443
Phosphoric acid, disodium salt	180.0910	21 CFR 182.1778,21 CFR 182.6290,21 CFR 182.6778,21 CFR 182.8778
Ammonium chloride	180.0920	21 CFR 184.1138
Iron trichloride	180.0920	21 CFR 184.1297

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

**Special Comments**

None

**Additional information**

**Global Automotive Declarable Substance List (GADSL)**

Chemical name	Global Automotive Declarable Substance List Classifications	Global Automotive Declarable Substance List Thresholds
Magnesium sulfate 7487-88-9	Declarable Substance (FI)	1 % 0.1 %

**NFPA and HMIS Classifications**

NFPA	Health hazards - 0	Flammability - 0	Instability - 0	Physical and chemical properties -
HMIS	Health hazards - 0	Flammability - 0	Physical hazards - 0	Personal protection - X -I

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

ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
ATSDR	ATSDR (Agency for Toxic Substances and Disease Registry)
CCRIS	CCRIS (Chemical Carcinogenesis Research Information System)
CDC	CDC (Center for Disease Control)
CEPA	CEPA (Canadian Environmental Protection Agency)
CICAD	CICAD (Concise International Chemical Assessment Documents)
ECHA	ECHA (The European Chemicals Agency)
EEA	EEA (European Environment Agency)
EPA	EPA (Environmental Protection Agency)
ERMA	ERMA (New Zealand Environmental Risk Management Authority)
ECOSARS	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™
FDA	FDA (Food & Drug Administration)

GESTIS	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
HSDB	HSDB (Hazardous Substances Data Bank)
INERIS	INERIS (The National Industrial Environment and Risks Institute)
IPCS INCHEM	IPCS INCHEM (International Programme on Chemical Safety)
IUCLID	IUCLID (The International Uniform Chemical Information Database)
NITE	Japan National Institute of Technology and Evaluation (NITE)
NIH	NIH (National Institutes of Health)
NIOSH	NIOSH (National Institute for Occupational Safety and Health)
LOLI	LOLI (List of Lists - An International Chemical Regulatory Database)
NDF	no data
NICNAS	Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH IDLH	Immediately Dangerous to Life or Health
OSHA	OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEEN	PEEN (Pan European Ecological Network)
RTECS	RTECS (Registry of Toxic Effects of Chemical Substances)
SIDS	SIDS (Screening Information Dataset) for High Volume Chemicals
SYKE	The Finnish Environment Institute (SYKE)
USDA	USDA (United States Department of Agriculture)
USDC	USDC (United States Department of Commerce)
WHO	WHO (World Health Organization)

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

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** 12-May-2021

**Revision Date** 26-Jan-2024

**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**