



Be Right™

# SAFETY DATA SHEET

Issue Date 15-Jun-2017

Revision Date  
16-Aug-2019

Version 1.2

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## 1. IDENTIFICATION

### Product identifier

**Product Name** Phosphorus HR TNT Reagent C

### Other means of identification

**Product Code(s)** TNT844C

**Safety data sheet number** M02446

**UN/ID no** UN3316

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

**Recommended Use** Analytical reagent. Phosphate determination.

**Uses advised against** Consumer use.

**Restrictions on use** For Laboratory Use Only.

### 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 considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Reproductive toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3

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

Not applicable

#### **Label elements**

##### **Signal word**

Warning

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#### Hazard statements

H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H335 - May cause respiratory irritation  
H361 - Suspected of damaging fertility or the unborn child

#### Precautionary statements

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  
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  
P201 - Obtain special instructions before use  
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  
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray  
P271 - Use only outdoors or in a well-ventilated area  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P312 - Call a POISON CENTER or doctor if you feel unwell  
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

#### Other Hazards Known

None

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Substance

Not applicable

#### Mixture

**Chemical Family** Mixture.  
**Chemical nature** aqueous solution.

Percent ranges are used where confidential product information is applicable.

Chemical name	CAS No.	Percent Range	HMRIC #
L-Ascorbic acid	50-81-7	50 - 60%	-
Boric acid (HBO <sub>2</sub> ), sodium salt, tetrahydrate	10555-76-7	20 - 30%	-

### 4. FIRST AID MEASURES

#### Description of first aid measures

**General advice** Show this safety data sheet to the doctor in attendance.

**Inhalation** Remove to fresh air. IF exposed or concerned: Get medical advice/attention. Get medical

attention immediately if symptoms occur.

<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. Do not rub affected area.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.
<b>Self-protection of the first aider</b>	Avoid contact with skin, eyes or clothing.

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

**Symptoms** Burning sensation.

**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>	Carbon monoxide, Carbon dioxide. Sodium oxides. Boron compounds.
<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. Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing.

**Other Information** Refer to protective measures listed in Sections 7 and 8.

**Environmental precautions**

**Environmental precautions** Prevent further leakage or spillage if safe to do so.

**Methods and material for containment and cleaning up**

<b>Methods for containment</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods for cleaning up</b>	Pick up and transfer to properly labeled containers.
<b>Prevention of secondary hazards</b>	Clean contaminated objects and areas thoroughly observing environmental regulations.
<b>Reference to other sections</b>	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. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Take off contaminated clothing and wash before reuse. Ensure adequate ventilation. Avoid breathing vapors or mists. In case of insufficient ventilation, wear suitable respiratory equipment.

### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Store locked up. 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
Boric acid (HBO <sub>2</sub> ), sodium salt, tetrahydrate CAS#: 10555-76-7	STEL: 6 mg/m <sup>3</sup> inhalable particulate matter TWA: 2 mg/m <sup>3</sup> inhalable particulate matter	NDF	NDF

### Appropriate engineering controls

**Engineering Controls** Showers  
Eyewash stations  
Ventilation systems.

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

**Respiratory protection** No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**Hand Protection** Wear suitable gloves. Impervious gloves.

**Eye/face protection** If splashes are likely to occur, wear safety glasses with side-shields.

**Skin and body protection** Wear suitable protective clothing. Long sleeved clothing.

**General Hygiene Considerations** Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing.

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**Environmental exposure controls** 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.

**Thermal hazards** None under normal processing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

**Physical state** Solid  
**Appearance** powder  
**Color** white  
**Odor** Odorless  
**Odor threshold** No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>Molecular weight</b>	No data available	
<b>pH</b>	4 - 4.5	
<b>Melting point/freezing point</b>	192 °C / 377.6 °F	
<b>Boiling point / boiling range</b>	No data available	
<b>Evaporation rate</b>	Not applicable	
<b>Vapor pressure</b>	Not applicable	
<b>Vapor density (air = 1)</b>	Not applicable	
<b>Specific gravity (water = 1 / air = 1)</b>	> 0.6	
<b>Partition Coefficient (n-octanol/water)</b>	log K <sub>ow</sub> ~ 0.1	
<b>Soil Organic Carbon-Water Partition Coefficient</b>	log K <sub>oc</sub> ~ 0.02	
<b>Autoignition temperature</b>	No data available	
<b>Decomposition temperature</b>	No information available	
<b>Dynamic viscosity</b>	Not applicable	
<b>Kinematic viscosity</b>	Not applicable	

### Solubility(ies)

#### Water solubility

<u>Water solubility classification</u>	<u>Water solubility</u>	<u>Water Solubility Temperature</u>
Completely soluble	330000 mg/L	20 °C / 68 °F

#### Solubility in other solvents

<u>Chemical Name</u>	<u>Solubility classification</u>	<u>Solubility</u>	<u>Solubility Temperature</u>
None reported	No information available	No data available	No information available

### Other Information

#### Metal Corrosivity

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

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

Not applicable

<b>Chemical name</b>	<b>CAS No.</b>	<b>Volatile organic compounds (VOC) content</b>	<b>CAA (Clean Air Act)</b>
L-Ascorbic acid	50-81-7	No data available	-
Boric acid (HBO <sub>2</sub> ), sodium salt, tetrahydrate	10555-76-7	No data available	-

#### **Explosive properties**

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

#### **Flammable properties**

**Flash point** Not applicable

#### **Flammability Limit in Air**

**Upper flammability limit** No data available  
**Lower flammability limit** No data available

#### **Oxidizing properties**

No data available.

#### **Bulk density**

600 kg/m<sup>3</sup>

## **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 acids. Strong bases. Strong oxidizing agents.

#### **Hazardous Decomposition Products**

Heating to decomposition releases toxic fumes of carbon monoxide and carbon dioxide.

## **11. TOXICOLOGICAL INFORMATION**

### Information on Likely Routes of Exposure

#### Product Information

<b>Inhalation</b>	May cause irritation of respiratory tract.
<b>Eye contact</b>	Irritating to eyes. Causes serious eye irritation.
<b>Skin contact</b>	Causes skin irritation.
<b>Ingestion</b>	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Symptoms** Redness. May cause redness and tearing of the eyes.

#### **Acute toxicity**

Based on available data, the classification criteria are not met

#### **Product Acute Toxicity Data**

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
L-Ascorbic acid (50 - 60%) CAS#: 50-81-7	Rat LD <sub>50</sub>	11900 mg/kg	None reported	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)
Boric acid (HBO <sub>2</sub> ), sodium salt, tetrahydrate (20 - 30%) CAS#: 10555-76-7	Rat LD <sub>50</sub>	2330 mg/kg	None reported	None reported	HSDB (Hazardous Substances Data Bank)

#### **Unknown Acute Toxicity**

57.14% 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>	8,155.40 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**

Classification based on data available for ingredients. Irritating to skin.

#### **Product Skin Corrosion/Irritation Data**

No data available.

#### **Ingredient Skin Corrosion/Irritation Data**

No data available.

#### **Serious eye damage/irritation**

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Classification based on data available for ingredients. Irritating to eyes.

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

No data available.

**Ingredient Eye Damage/Eye Irritation Data**

No data available.

**Respiratory or skin sensitization**

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

**Product Sensitization Data**

No data available.

**Ingredient Sensitization Data**

No data available.

**STOT - single exposure**

May cause respiratory irritation.

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

No data available.

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

No data available.

**STOT - repeated exposure**

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

**Product Specific Target Organ Toxicity Repeat Dose Data**

No data available.

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

No data available.

**Carcinogenicity**

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

**Product Carcinogenicity Data**

No data available.

**Ingredient Carcinogenicity Data**

No data available.

Chemical name	CAS No.	ACGIH	IARC	NTP	OSHA
L-Ascorbic acid	50-81-7	-	-	-	-
Boric acid (HBO <sub>2</sub> ), sodium salt, tetrahydrate	10555-76-7	-	-	-	-

**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 (Occupational Safety and Health Administration of the US Department of Labor)</b>	Does not apply

**Germ cell mutagenicity**

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

**Product Germ Cell Mutagenicity invitro Data**

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No data available.

**Ingredient Germ Cell Mutagenicity invitro Data**

Test data reported below.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
L-Ascorbic acid (50 - 60%) CAS#: 50-81-7	DNA damage	Human fibroblast	0.2 mmol/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)

**Product Germ Cell Mutagenicity invivo Data**

No data available.

**Ingredient Germ Cell Mutagenicity invivo Data**

No data available.

**Reproductive toxicity**

Classification based on data available for ingredients. Contains a known or suspected reproductive toxin. The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

**Product Reproductive Toxicity Data**

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
L-Ascorbic acid (50 - 60%) CAS#: 50-81-7	Guinea pig TD <sub>Lo</sub>	19500 mg/kg	28 days	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)

**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.

**Product Ecological Data**

**Aquatic Acute Toxicity**

No data available.

**Aquatic Chronic Toxicity**

No data available.

**Ingredient Ecological Data**

**Aquatic Acute Toxicity**

Test data reported below.

**Fish**

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
L-Ascorbic acid (50 - 60%) CAS#: 50-81-7	96 hours	None reported	LC <sub>50</sub>	44200 mg/L	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™

**Crustacea**

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
L-Ascorbic acid (50 - 60%) CAS#: 50-81-7	48 Hours	None reported	LC <sub>50</sub>	17500 mg/L	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™

**Algae**

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
L-Ascorbic acid (50 - 60%) CAS#: 50-81-7	96 hours	None reported	EC <sub>50</sub>	29675 mg/L	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™

**Aquatic Chronic Toxicity**

No data available.

**Persistence and degradability**

**Product Biodegradability Data**

No data available.

**Bioaccumulation**

**Product Bioaccumulation Data**

No data available.

**Partition Coefficient (n-octanol/water)**

log K<sub>ow</sub> ~ 0.1

**Mobility**

**Soil Organic Carbon-Water Partition Coefficient**

log K<sub>oc</sub> ~ 0.02

**Other adverse effects**

Contains a substance with an endocrine-disrupting potential.

**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.

**US EPA Waste Number**

No data available

## 14. TRANSPORT INFORMATION

### DOT

UN/ID no	UN3316
Proper shipping name	CHEMICAL KIT
Hazard Class	9
Description	UN3316, CHEMICAL KIT, 9
Emergency Response Guide Number	171

### TDG

UN/ID no	UN3316
Proper shipping name	CHEMICAL KIT
Hazard Class	9
Description	UN3316, CHEMICAL KIT, 9

### IATA

UN/ID no	UN3316
Proper shipping name	Chemical kit
Hazard Class	9
Packing Group	II
ERG Code	9L
Description	UN3316, Chemical kit, 9

### IMDG

UN/ID no	UN3316
Proper shipping name	CHEMICAL KIT
Hazard Class	9
EmS-No	F-A, S-P
Special precautions for user	251, 340
Description	UN3316, CHEMICAL KIT, 9

### **Additional information**

This product forms part of a kit. Information in this section relates to the kit as a whole.

## 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

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**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

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

<b>Acute health hazard</b>	Yes
<b>Chronic Health Hazard</b>	Yes
<b>Fire hazard</b>	No
<b>Sudden release of pressure hazard</b>	No
<b>Reactive Hazard</b>	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)

#### **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

### US State Regulations

#### **California Proposition 65**

This product does not contain any Proposition 65 chemicals

**IMERC:** Not applicable

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

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

<b>Chemical name</b>	<b>New Jersey</b>	<b>Massachusetts</b>	<b>Pennsylvania</b>
Boric acid (HBO <sub>2</sub> ), sodium salt, tetrahydrate 10555-76-7	X	-	-

#### **U.S. EPA Label Information**

<b>Chemical name</b>	<b>FIFRA</b>	<b>FDA</b>
L-Ascorbic acid	180.0950	21 CFR 182.3013,21 CFR 182.8013
Boric acid (HBO <sub>2</sub> ), sodium salt, tetrahydrate	180.1121	-

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

#### **Special Comments**

None

#### **Additional information**

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

Not applicable

**NFPA and HMIS Classifications**

<b>NFPA</b>	<b>Health hazards</b> - 2	<b>Flammability</b> - 0	<b>Instability</b> - 0	<b>Physical and chemical properties</b> -
<b>HMIS</b>	<b>Health hazards</b> - 2 - *	<b>Flammability</b> - 0	<b>Physical hazards</b> - 0	<b>Personal protection</b> - X

**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**

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  
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**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**