

# SAFETY DATA SHEET

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1. IDENTIFICATION

**Product identifier** 

Product Name Chemical Oxygen Demand Standard Solution 300 mg/L COD

Other means of identification

Product Code(s) 1218629

Safety data sheet number M00587

Recommended use of the chemical and restrictions on use

Recommended Use Water Analysis. Determination of Chemical Oxygen Demand.

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)

Chronic aquatic toxicity Category 3

### Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Signal word

None

### **Hazard statements**

H412 - Harmful to aquatic life with long lasting effects

## **Precautionary statements**

P273 - Avoid release to the environment

P501 - Dispose of contents/ container to an approved waste disposal plant

# Other Hazards Known

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Harmful to aquatic life

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3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable

**Mixture** 

Chemical Family

Mixture.

**Chemical nature** 

Aqueous alkaline solution of organic and inorganic salts.

Percent ranges are used where confidential product information is applicable.

Chemical name	CAS No.	Percent Range	HMRIC #
1,2-Benzenedicarboxylic acid, monopotassium salt	877-24-7	<0.1%	1
Sulfuric acid, copper(2+) salt (1:1)	7758-98-7	<0.01%	-

# 4. FIRST AID MEASURES

**Description of first aid measures** 

General advice No hazards which require special first aid measures. Use first aid treatment according to the

nature of the injury.

**Inhalation** Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids.

Consult a physician.

**Skin contact** Wash skin with soap and water.

**Ingestion** 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

5. FIRE-FIGHTING MEASURES

surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the

chemical

No information available.

Hazardous combustion products This material will not burn.

Special protective equipment for

fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Use personal protection equipment.

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# 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.

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

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
Sulfuric acid, copper(2+) salt (1:1)	TWA: 1 mg/m <sup>3</sup> Cu dust and	NDF	IDLH: 100 mg/m3 Cu dust and
CAS#: 7758-98-7	mist		mist
			TWA: 1 mg/m <sup>3</sup> Cu dust and
			mist

Appropriate engineering controls

**Engineering Controls** 

Showers

Evewash stations Ventilation systems.

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Individual protection measures, such as personal protective equipment

exceeded or irritation is experienced, ventilation and evacuation may be required.

Hand Protection Wear suitable gloves.

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**Eye/face protection** Wear safety glasses with side shields (or goggles).

**Skin and body protection**No special protective equipment required.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

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 Liquid

Appearance<br/>Odoraqueous solutionColor<br/>Odor thresholdcolorless<br/>Not applicable

Property Values Remarks • Method

Molecular weight Not applicable

**pH** 4.7 @ 20 °C

Melting point / freezing point  $\sim$  0 °C / 32 °F

Initial boiling point and boiling range  $\sim 100$  °C / 212 °F

**Evaporation rate** 1 (water = 1)

Vapor pressure 17.477 mm Hg  $\,/\,$  2.33 kPa at 20 °C  $\,/\,$  68 °F

Relative vapor density 0.62

Specific gravity - VALUE 1 0.987

Partition coefficient No data available

**Soil Organic Carbon-Water Partition** 

Coefficient

Not applicable

Autoignition temperature No data available

Decomposition temperature No data available

**Dynamic viscosity** 1 cP (mPa s) at 20 °C / 68 °F

Kinematic viscosity 1.013 cSt (mm<sup>2</sup>/s) at 20 °C / 68 °F

Solubility(ies)

Water solubility

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

# Solubility in other solvents

Chemical Name_	Solubility classification_	<u>Solubility</u>	Solubility Temperature_
Acid	Soluble	> 1000 mg/L	25 °C / 77 °F
Most Polar Organic Solvents	Soluble	> 1000 mg/L	25 °C / 77 °F

## **Other information**

## **Metal Corrosivity**

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

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

Chemical name	CAS No.	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
1,2-Benzenedicarboxylic acid, monopotassium salt	877-24-7	No data available	-
Sulfuric acid, copper(2+) salt (1:1)	7758-98-7	No data available	-

# **Explosive properties**

Upper explosion limit Not applicable Lower explosion limit Not applicable

# Flammable properties

No data available Flash point

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

## Possibility of hazardous reactions

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None under normal processing.

# **Hazardous polymerization**

Hazardous polymerization does not occur.

#### Conditions to avoid

None known based on information supplied.

#### Incompatible materials

Strong oxidizing agents, strong acids, and strong bases.

# Hazardous decomposition products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

# 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
1,2-Benzenedicarbox ylic acid, monopotassium salt (<0.1%) CAS#: 877-24-7		> 3200 mg/kg	None reported	None reported	RTECS
Sulfuric acid, copper(2+) salt (1:1) (<0.01%) CAS#: 7758-98-7	Rat LD <sub>50</sub>	300 mg/kg	None reported	None reported	LOLI

#### **Dermal Exposure Route**

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid,	Rabbit	> 2000 mg/kg	None reported	None reported	ECHA
copper(2+) salt (1:1) (<0.01%)	LD <sub>50</sub>				

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CAS#: 7758-98-7			

## **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

ATEmix (oral)	No information available mg/kg
ATEmix (dermal)	No information available
ATEmix (inhalation-dust/mist)	No information available
ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	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
1,2-Benzenedicarbox ylic acid, monopotassium salt (<0.1%) CAS#: 877-24-7	Acute Dermal	Rabbit	500 mg	4 hours	Not corrosive or irritating to skin	ECHA
Sulfuric acid, copper(2+) salt (1:1) (<0.01%) CAS#: 7758-98-7	Standard Draize Test	Rabbit	500 mg	4 hours	Skin irritant	ECHA

# 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
1,2-Benzenedicarbox ylic acid, monopotassium salt (<0.1%) CAS#: 877-24-7	EpiOcularTM Eye Irritation Test	Human	50.3 mg	6 hours	Not corrosive or irritating to eyes	ECHA

# Respiratory or skin sensitization

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

### **Mixture**

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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
1,2-Benzenedicarbox	OECD Guideline	None	Not confirmed to be a skin sensitizer	ECHA
ylic acid,	442D (In Vitro Skin	reported		
monopotassium salt	Sensitisation:			
(<0.1%)	ARE-Nrf2			
CAS#: 877-24-7	Luciferase Test			
	Method)			

#### 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

No data available.

## **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

No data available.

# 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
1,2-Benzenedicarboxylic	877-24-7	-	-	-	-
acid, monopotassium salt					
Sulfuric acid, copper(2+)	7758-98-7	=	=	=	-
salt (1:1)					

## Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
NTP (National Toxicology Program)	Does not apply
OSHA	Does not apply

# **Germ cell mutagenicity**

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

## Mixture invitro Data

No data available.

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# Substance invitro Data

Test data reported below.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
1,2-Benzenedicarbox ylic acid, monopotassium salt (<0.1%) CAS#: 877-24-7	OECD 471	Salmonella typhimurium	5 mg/plate	48 hours	Negative	ECHA
Sulfuric acid, copper(2+) salt (1:1) (<0.01%) CAS#: 7758-98-7	DNA inhibition	Human lymphocyte	0.076 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**

No data available.

## **Aspiration hazard**

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

# 12. ECOLOGICAL INFORMATION

**Ecotoxicity** Harmful to aquatic life with long lasting effects.

**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
1,2-Benzenedicarbox	96 hours	None reported	LC <sub>50</sub>	9323 mg/L	ECOSARS

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ylic acid, monopotassium salt (<0.1%) CAS#: 877-24-7					
Sulfuric acid, copper(2+) salt (1:1) (<0.01%) CAS#: 7758-98-7	96 hours	Pimephales promelas	LC <sub>50</sub>	0.0028 mg/L	Vendor SDS

## Crustacea

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
1,2-Benzenedicarbox ylic acid, monopotassium salt (<0.1%) CAS#: 877-24-7	48 Hours	None reported	LC50	4859 mg/L	ECOSARS
Sulfuric acid, copper(2+) salt (1:1) (<0.01%) CAS#: 7758-98-7	48 Hours	Daphnia magna	EC50	0.0014 mg/L	Vendor SDS

# Algae

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
1,2-Benzenedicarbox ylic acid, monopotassium salt (<0.1%) CAS#: 877-24-7	96 hours	None reported	EC50	2538 mg/L	ECOSARS
Sulfuric acid, copper(2+) salt (1:1) (<0.01%) CAS#: 7758-98-7	72 Hours	Thalassiosira pseudonana	EC50	0.005 mg/L	ERMA

# **Aquatic Chronic Toxicity**

No data available.

# Persistence and degradability

**Mixture** 

No data available.

**Mixture** 

No data available.

Partition coefficient No data available

**Mobility** 

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

Other adverse effects

No information available

Chemical name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
1,2-Benzenedicarboxylic acid,	Group III Chemical	-	-
monopotassium salt			

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(<0.1%) CAS#: 877-24-7			
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# 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 Not applicable

Special instructions for disposal

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 Complies **IECSC** Complies **KECL PICCS** Complies Complies **TCSI** Complies **AICS** Complies **NZIoC** 

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

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**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 %
Sulfuric acid, copper(2+) salt (1:1) (CAS #: 7758-98-7)	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
Sulfuric acid, copper(2+) salt (1:1) 7758-98-7	10 lb	X	-	Х

## **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)
Sulfuric acid, copper(2+) salt	10 lb	-	RQ 10 lb final RQ
(1:1)			RQ 4.54 kg final RQ
7758-98-7			

# **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.

Chemical name	New Jersey	Massachusetts	Pennsylvania
Sulfuric acid, copper(2+) salt	X	X	X
(1:1)			
7758-98-7			

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

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Chemical name	FIFRA	FDA	
Sulfuric acid, copper(2+) salt (1:1)	-	21 CFR 184.1261	

# 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 Thersholds
Sulfuric acid, copper(2+) salt (1:1)	Declarable Substance (LR)	None reported
7758-98-7	Prohibited Substance (LR)	

### 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

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

ACGIH (American Conference of Governmental Industrial Hygienists)
ATSDR (Agency for Toxic Substances and Disease Registry)
CCRIS (Chemical Carcinogenesis Research Information System)

CDC (Center for Disease Control)

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 Zealands 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 (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 (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 (Occupational Safety and Health Administration of the US Department of Labor)

PEEN PEEN (Pan European Ecological Network)

RTECS (Registry of Toxic Effects of Chemical Substances)

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SIDS SIDS (Screening Information Dataset) for High Volume Chemicals

SYKE The Finnish Environment Institute (SÝKE)
USDA USDA (United States Department of Agriculture)
USDC USDC (United States Department of Commerce)

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

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Prepared By Hach Product Compliance Department

**Issue Date** 02-May-2019

**Revision Date** 01-May-2024

Revision Note SDS sections updated

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#### **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** 

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