

# SAFETY DATA SHEET

**Issue Date** 13-06-2019 **Revision Date** 05-Apr-2023 **Version** 7.8 **Page** 1 / 14

# 1. IDENTIFICATION

**Product identifier** 

Product Name Total Chlorine Indicator Solution

Other means of identification

Product Code(s) 2263411

Safety data sheet number M00469

UN/ID no UN2796

Recommended use of the chemical and restrictions on use

**Recommended Use** Analytical reagent. Determination of chlorine.

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)

Corrosive to metals	Category 1
Skin corrosion/irritation	Category 2
Serious eve damage/eve irritation	Category 1

# Hazards not otherwise classified (HNOC)

Not applicable

# Label elements

# Signal word

Danger

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#### **Hazard statements**

H290 - May be corrosive to metals

H315 - Causes skin irritation

H318 - Causes serious eye damage

# **Precautionary statements**

P280 - Wear protective gloves, protective clothing, eye protection, and face protection

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P332 + P313 - If skin irritation occurs: Get medical attention

P362 - Take off contaminated clothing and wash before reuse

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

P234 - Keep only in original container

P390 - Absorb spillage to prevent material damage

# Other Hazards Known

None

# 3. COMPOSITION/INFORMATION ON INGREDIENTS

### **Substance**

Not applicable

#### **Mixture**

Chemical Family Mixture.

Chemical nature Inorganic acid in aqueous solution.

# Percent ranges are used where confidential product information is applicable.

Chemical name	CAS No	Percent Range	HMRIC #
Sulfuric acid	7664-93-9	<10%	-

# 4. FIRST AID MEASURES

# **Description of first aid measures**

General advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is

required.

Inhalation Remove to fresh air. Get medical attention immediately if symptoms occur.

**Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open

while rinsing. Do not rub affected area. Get immediate medical advice/attention.

**Skin contact** Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical

attention if irritation develops and persists.

**Ingestion** Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth

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to an unconscious person. Do NOT induce vomiting. Call a physician.

**Self-protection of the first aider** 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

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** May emit toxic and corrosive fumes.

Special protective equipment for

fire-fighters

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 Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal

protective equipment as required.

**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

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Pick up and transfer to properly labeled containers.

**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

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Precautions for safe handling

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

skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off

contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

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

moisture. Store locked up. Keep out of the reach of children. Store away from other

materials.

Flammability class Not applicable

# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### **Exposure Guidelines**

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Sulfuric acid	TWA: 0.2 mg/m³ thoracic	TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup>
CAS#: 7664-93-9	particulate matter	(vacated) TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>

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. Wear

breathing apparatus if exposed to vapors/dusts/aerosols.

**Hand Protection** 

Wear suitable gloves. Impervious gloves. 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. Barrier creams may help to protect

the exposed areas of skin.

Tight sealing safety goggles. Eye/face protection

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

Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this **General Hygiene Considerations** 

product. Regular cleaning of equipment, work area and clothing is recommended. Avoid

contact with skin, eyes or clothing.

**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

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Appearanceaqueous solutionColorcolorlessOdorOdorlessOdor thresholdNot applicable

<u>Property</u> <u>Values</u> <u>Remarks • Method</u>

Molecular weight Not applicable

pH 0.5 @ 20 °C

Melting point/freezing point  $\sim$  -1 °C / 30.2 °F

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

**Evaporation rate** 0.81 (water = 1)

Vapor pressure 0.075 mm Hg / 0.01 kPa at 25 °C / 77 °F

Relative vapor density 0.03

Specific gravity - VALUE 1 1.056

Partition coefficient 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

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

# **Other information**

**Metal Corrosivity** 

Classified as corrosive to metal according to GHS criteria

Steel Corrosion Rate19.62 mm/yr / 0.77 in/yrAluminum Corrosion Rate7.37 mm/yr / 0.29 in/yr

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

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Sulfuric acid	7664-93-9	No data available	-

# **Explosive properties**

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Upper explosion limitNo data availableLower explosion limitNo data available

Flammable properties

Flash point No data available

Flammability Limit in Air

Upper flammability limit:No data availableLower flammability limit:No data available

Oxidizing properties No data available.

Bulk density No data available

# 10. STABILITY AND REACTIVITY

#### Reactivity

Corrosive on contact with water. Corrosive to metal.

# 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**

Hazardous polymerization does not occur.

#### Conditions to avoid

Exposure to air or moisture over prolonged periods.

#### Incompatible materials

Oxidizing agent. Strong acids. 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** May cause irritation of respiratory tract.

Eye contact Severely irritating to eyes. Causes serious eye damage. May cause burns. May cause

irreversible damage to eyes.

**Skin contact** Causes skin irritation.

**Ingestion** Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms Redness. Burning. May cause blindness. May cause redness and tearing of the eyes.

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# **Acute toxicity**

Based on available data, the classification criteria are not met

#### **Mixture**

No data available.

#### **Ingredient Acute Toxicity Data**

No data available.

# **Unknown Acute Toxicity**

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

# **Acute Toxicity Estimations (ATE)**

ATEmix (oral)	No information available
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**

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

#### Mixture

Test data reported below.

Test method	Species	Reported dose	Exposure	Results	Key literature references and
OECD Test 404:	Rabbit	0.5 mL	time	Not corrosive	sources for data
Acute Dermal			4 hours	to skin	Outside testing
Corrosion/Irritation					-

# Ingredient Skin Corrosion/Irritation Data

No data available.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sulfuric acid (<10%) CAS#: 7664-93-9	Existing human experience	Human	None reported	None reported	Corrosive to skin	HSDB

# Serious eye damage/irritation

Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

# **Mixture**

No data available.

# Ingredient Eye Damage/Eye Irritation Data

No data available.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sulfuric acid (<10%) CAS#: 7664-93-9	Existing human experience	Human	None reported	None reported	Corrosive to eyes	HSDB

# 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**

No data available.

# 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.

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid (<10%) CAS#: 7664-93-9	Human TD∟₀	0.144 mg/L	5 minutes	Lungs, Thorax, or Respiration Dyspnea	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

No data available.

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid	Human	0.003 mg/L	168 days	Musculoskeletal	RTECS
(<10%)	TCLo			Changes in teeth and supporting	
CAS#: 7664-93-9				structures	

# **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
Sulfuric acid	7664-93-9	A2	Group 1	Known	Χ

# Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	A2 - Suspected Human Carcinogen
IARC (International Agency for Research on Cancer)	Group 1 - Carcinogenic to Humans
NTP (National Toxicology Program)	Known - Known Carcinogen
OSHA	X - Present

# Germ cell mutagenicity

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

### Mixture invitro Data

No data available.

#### Substance invitro Data

No data available.

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Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Sulfuric acid (<10%) CAS#: 7664-93-9	Cytogenetic analysis	Hamster ovary	4 mmol/L	None reported	Positive test result for mutagenicity	No information available

**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.

Chemical name	Endpoint	Reported	Exposure	Toxicological effects	Key literature references and
	type	dose	time		sources for data
Sulfuric acid	Rabbit	0.02 mg/L	7 hours	Specific Developmental	No information available
(<10%)	TCLo	_		Abnormalities	
CAS#: 7664-93-9				Musculoskeletal system	

**Aspiration hazard** 

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

# 12. ECOLOGICAL INFORMATION

# **Ecotoxicity**

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** 

No data available.

**Aquatic Chronic Toxicity** 

No data available.

Persistence and degradability

**Mixture** 

No data available.

Mixture

No data available.

Partition coefficient Not applicable

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**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.

US EPA Waste Number D002

**Special instructions for disposal** Work in an approved fume hood. Dilute material with excess water making a weaker than

5% solution. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the reacted material to the drain.

Allow cold water to run for 5 minutes to completely flush the system.

# 14. TRANSPORT INFORMATION

DOT

UN/ID no UN2796
Proper shipping name Sulfuric acid

Transport hazard class(es) 8
Packing Group | |

Reportable Quantity (RQ) Sulfuric acid: RQ kg= 4637.39

Description UN2796, Sulphuric acid, 8, II, RQ

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Number

TDG

UN/ID no UN2796
Proper shipping name Sulphuric Acid

Transport hazard class(es) 8
Packing Group |

**Description** UN2796, Sulphuric acid, 8, II

IATA

UN number or ID number UN2796
Proper shipping name UN2796
Sulphuric Acid

Transport hazard class(es) 8
Packing group II
ERG Code 8L

**Description** UN2796, Sulphuric acid, 8, II

**IMDG** 

UN number or ID number UN2796
Proper shipping name UN2796
Sulphuric Acid

Transport hazard class(es) 8
Packing Group |

EmS-No F-A, S-B UN2796, SULPHURIC ACID, 8, II

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**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 Complies **ENCS** Complies **IECSC** Complies **KECL - Existing substances 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

Chemical name	SARA 313 - Threshold Values %
Sulfuric acid (CAS #: 7664-93-9)	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)

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 7664-93-9	1000 lb	-	-	X

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#### **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	1000 lb	1000 lb	RQ 1000 lb final RQ
7664-93-9			RQ 454 kg final RQ

# U.S. - DEA (Drug Enforcement Administration) List I & List II

Chemical name	U.S DEA (Drug Enforcement Administration) - List I or Precursor Chemicals	U.S DEA (Drug Enforcement Administration) - List II or Essential Chemicals
Sulfuric acid (<10%)	Not Listed	50 gallon Export Volume (exports, transshipments and international
CAS#: 7664-93-9		transactions to designated countries given in 1310.08(b))

# **US State Regulations**

### **California Proposition 65**

This product contains the following Proposition 65 chemicals

Chemical name	California Proposition 65
Sulfuric acid (CAS #: 7664-93-9)	Carcinogen

WARNING: This product can expose you to chemicals including Sulfuric acid, which is known to the State of California to cause cancer.

For more information, go to <a href="http://www.P65Warnings.ca.gov">http://www.P65Warnings.ca.gov</a>

IMERC: Not applicable

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

This product does not contain any substances regulated by state right-to-know regulations.

Chemical name	New Jersey	Massachusetts	Pennsylvania
Sulfuric acid	X	X	X
7664-93-9			

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

Chemical name	FIFRA	FDA
Sulfuric acid	180.0910	21 CFR 184.1095

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

# **Special Comments**

None

# **Additional information**

Global Automotive Declarable Substance List (GADSL)
Not applicable
NFPA and HMIS Classifications

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NFPA	Health hazards - 3	Flammability - 0	Instability - 0	Physical and chemical properties -
HMIS	Health hazards - 3	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 (Chemical Carcinogenesis Research Information System)

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

PEEN (Pan European Ecological Network)

RTECS (Registry of Toxic Effects of Chemical Substances)
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 (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** 13-06-2019

Revision Date 05-Apr-2023

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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