SAFETY DATA SHEET

Issue Date 28-Aug-2020 **Revision Date** 19-Sep-2022 **Version** 4.1

1. IDENTIFICATION

Product identifier

Product Name SulfaVer® 4 Sulfate Reagent

Other means of identification

Product Code(s) 1206599

Safety data sheet number M00046

Recommended use of the chemical and restrictions on use

Recommended Use Water Analysis Sulfate determination

Uses advised against No information available

Details of the supplier of the safety data sheet

Initial Supplier Identifier
Hach Sales & Service LP. 3020 Gore Road, London, Ontario N5V 4T7 Canada Tel: 1-800-665-7635

Manufacturer Address
Hach Company, P.O. Box 389, Loveland, CO 80539, USA, +1(970) 669-3050

Emergency telephone number

Emergency Telephone Chemtrec 1-800-424-9300
CANUTEC 613-992-4624

2. HAZARD IDENTIFICATION

Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3
Chronic aquatic toxicity	Category 3

Label elements

Signal word - Warning

Hazard statements

H302 - Harmful if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements
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
P280 - Wear protective gloves, protective clothing, eye protection, and face protection
P302 + P352 - IF ON SKIN: Wash with plenty of water and soap
P332 + P313 - If skin irritation occurs: Get medical attention
P362 + P364 - Take off contaminated clothing and wash it 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
P337 + P313 - If eye irritation persists: Get medical attention
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant
P273 - Avoid release to the environment
P270 - Do not eat, drink or smoke when using this product
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
P330 - Rinse mouth

Unknown Acute Toxicity
0 % of the mixture consists of ingredient(s) of unknown toxicity.
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

Other Hazards Known
May be harmful in contact with skin. Harmful to aquatic life.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance
Not applicable

Mixture

Chemical Family Mixture.

Chemical name	Synonyms	CAS No	Percent Range	CBI Protection	Units	HMIRA #
Citric acid	2-hydroxypropane-1,2,3-tricarboxylic acid	77-92-9	50 - 60%	-	g	-
Barium chloride (BaCl2), dihydrate	Barium dichloride dehydrate	10326-27-9	40 - 50%	-	g	-

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.

Eye contact 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.

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 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.

Self-protection of the first aider Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

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

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the 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 Carbon monoxide, Carbon dioxide. Chlorides.

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

Personal precautions, protective equipment and emergency procedures

WHMIS Notice Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

Personal precautions 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

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

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal.

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

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. 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 Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits

Chemical name	Alberta OEL	British Columbia OEL	Manitoba OEL	New Brunswick OEL	New Foundland & Labrador OEL
Barium chloride (BaCl2), dihydrate 40 - 50%	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³

Chemical name	Northwest Territories OEL	Nova Scotia OEL	Nunavut OEL	Ontario TWA	Prince Edward Island OEL
Barium chloride (BaCl2), dihydrate 40 - 50%	TWA: 0.5 mg/m³ STEL: 1.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³ STEL: 1.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³

Chemical name	Quebec OEL	Saskatchewan OEL	Yukon OEL
Barium chloride (BaCl2), dihydrate 40 - 50%	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³ STEL: 1.5 mg/m³	STEL: 0.5 mg/m³ TWA: 0.5 mg/m³

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Barium chloride (BaCl2), dihydrate 40 - 50%	TWA: 0.5 mg/m³ Ba	TWA: 0.5 mg/m³ (vacated) TWA: 0.5 mg/m³	IDLH: 50 mg/m³ Ba TWA: 0.5 mg/m³ except Barium sulfate Ba

Legend See section 16 for terms and abbreviations

Appropriate engineering controls

Engineering Controls Showers

Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

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.

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 Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. 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	Solid		
Appearance	powder	**Color**	white
Odor	Odorless	**Odor threshold**	No data available

Property	**Values**	**Remarks • Method**
Molecular weight	No data available	
pH	2.01	5% Solution
Melting point / freezing point	~ 124 °C / 255.2 °F	
Initial boiling point and boiling range	No data available	
Evaporation rate	Not applicable	
Vapor pressure	Not applicable	
Relative vapor density	No data available	
Specific gravity - VALUE 1	~ 2	
Partition coefficient	log K_{ow} ~ -1.04	
Soil Organic Carbon-Water Partition Coefficient	log K_{oc} ~ 0.48	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
Dynamic viscosity	Not applicable	
Kinematic viscosity	Not applicable	

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	Solubility	Solubility Temperature
Acid	Soluble	> 1000 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
Not applicable

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Citric acid	77-92-9	Not applicable	-
Barium chloride (BaCl2), dihydrate	10326-27-9	Not applicable	-

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 No data available

10. STABILITY AND REACTIVITY

Reactivity
Not applicable.

Chemical stability
Stability Stable under normal conditions.

Explosion data
Sensitivity to Mechanical Impact None
Sensitivity to Static Discharge None.

Possibility of hazardous reactions

Possibility of Hazardous Reactions None under normal processing.

Hazardous polymerization

None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong acids. Strong bases. Strong oxidizing agents.

Hazardous decomposition products

Carbon dioxide (CO2). Carbon monoxide. 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	Irritating to eyes. Causes serious eye irritation.
Skin contact	Causes skin irritation.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Harmful if swallowed.
Symptoms	Redness. May cause redness and tearing of the eyes.

Acute toxicity

Harmful if swallowed
Harmful if inhaled

Mixture

Test data reported below.

Oral Exposure Route

Endpoint type	Reported dose	Toxicological effects	Key literature references and sources for data
Rat LD_{50}	680 mg/kg	**Behavioral** Decreased locomotor activity Sedation **Chronic** Death **Gastrointestinal** Enteritis of the intestines Gas Smooth pyloric and ulcerated stomach **Lungs, Thorax, or Respiration** Congestion of the lungs Hemorrhagic lungs **Skin and Appendages** Piloerection	Outside testing

Dermal Exposure Route

Endpoint type	Reported dose
Rat LD_{50}	> 3414 mg/kg

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
Citric acid (50 - 60%) CAS#: 77-92-9	Rat LD_{50}	3000 mg/kg	None reported	None reported	IUCLID
Barium chloride (BaCl2), dihydrate (40 - 50%) CAS#: 10326-27-9	Rat LD_{50}	118 mg/kg	None reported	None reported	IUCLID

Inhalation (Dust/Mist) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Barium chloride (BaCl2), dihydrate (40 - 50%) CAS#: 10326-27-9	Rat LC_{50}	>= 1.1 mg/L	4 hours	None reported	ECHA

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

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

Acute Toxicity Estimations (ATE)

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

ATEmix (oral)	No information available
ATEmix (dermal)	No information available
ATEmix (inhalation-dust/mist)	2.66
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.

Product Skin Corrosion/Irritation Data
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
Citric acid (50 - 60%) CAS#: 77-92-9	Standard Draize Test	Rabbit	500 mg	24 hours	Mild skin irritant	RTECS
Barium chloride (BaCl2), dihydrate (40 - 50%) CAS#: 10326-27-9	EpiDerm Skin Model (Directive 2000/33/EC, B.27)	Human	10 mg	42 hours	Not corrosive or irritating to skin	ECHA

Serious eye damage/eye irritation
Classification based on data available for ingredients. Irritating to eyes.

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
Citric acid (50 - 60%) CAS#: 77-92-9	Standard Draize Test	Rabbit	0.750 mg	24 hours	Eye irritant	RTECS
Barium chloride (BaCl2), dihydrate (40 - 50%) CAS#: 10326-27-9	Standard Draize Test	Rabbit	100 mg	72 hours	Eye irritant	ECHA

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
Barium chloride (BaCl2), dihydrate (40 - 50%)	Local Lymph Node Assay	Mouse	Not confirmed to be a skin sensitizer	ECHA

CAS#: 10326-27-9				

STOT - single exposure
May cause respiratory irritation.

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
Barium chloride (BaCl2), dihydrate (40 - 50%) CAS#: 10326-27-9	Rat LD_{Lo}	300 mg/kg	None reported	None reported	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
Barium chloride (BaCl2), dihydrate (40 - 50%) CAS#: 10326-27-9	Rat TD_{Lo}	91 mg/kg	182 days	**Behavioral** Alteration of classical conditioning **Blood** Enzyme inhibition, induction, or change in blood or tissue levels (multiple enzyme effects)	RTECS

Inhalation (Dust/Mist) Exposure Route

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

Mixture
No data available.

Ingredient Carcinogenicity Data
Test data reported below.

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
Citric acid	77-92-9	-	-	-	-
Barium chloride (BaCl2), dihydrate	10326-27-9	-	-	-	-

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Does not apply

NTP (National Toxicology Program)	Does not apply
OSHA	Does not apply

Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Barium chloride (BaCl2), dihydrate (40 - 50%) CAS#: 10326-27-9	Rat NOAEL	91 mg/kg	2 years	Not Carcinogenic	ECHA

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
Barium chloride (BaCl2), dihydrate (40 - 50%) CAS#: 10326-27-9	Gene conversion and mitotic recombination	Saccharomyces cerevisiae	14 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.

Product Skin Corrosion/Irritation 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
Barium chloride (BaCl2), dihydrate (40 - 50%) CAS#: 10326-27-9	Rat TD_{Lo}	84 mg/kg	24 weeks	**Paternal Effects** Spermatogenesis (including genetic material, sperm morphology, motility, and count)	RTECS

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 Acute Toxicity 0 % of the mixture consists of component(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.

Crustacea

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Barium chloride (BaCl2), dihydrate (40 - 50%) CAS#: 10326-27-9	48 Hours	*Daphnia magna*	EC_{50}	14.5 mg/L	Vendor SDS

Aquatic Chronic Toxicity
No data available.

Persistence and degradability

Product Biodegradability Data
No data available.

Bioaccumulation
MATERIAL DOES NOT BIOACCUMULATE.
Product Bioaccumulation Data
No data available.

Partition coefficient log K_{ow} ~ -1.04

Mobility

Soil Organic Carbon-Water Partition Coefficient log K_{oc} ~ 0.48

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

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

Contaminated packaging Do not reuse empty containers.

14. TRANSPORT INFORMATION

Transport Canada Not regulated

TDG Not regulated

IATA Not regulated

IMDG Not regulated

Note: No special precautions necessary.

Additional information

15. REGULATORY INFORMATION

Regulatory information

National Inventories

DSL/NDSL	Complies

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

TSCA	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL - Existing substances	Complies
PICCS	Complies
TCSI	Complies
AICS	Complies
NZIoC	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
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

Canada - CEPA - Mercury Containing Products
None

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer	Not applicable
The Stockholm Convention on Persistent Organic Pollutants	Not applicable
The Rotterdam Convention	Not applicable

16. OTHER INFORMATION

Special Comments
None

NFPA and HMIS Classifications

NFPA	Health hazards - 2	Flammability - 0	Instability - 0	Physical and chemical properties -
HMIS	Health hazards - 2	Flammability - 0	Physical hazards - 0	Personal protection - X

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 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	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

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Revision Note
SDS sections updated
2

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End of Safety Data Sheet