

# SAFETY DATA SHEET

**Issue Date** 15-Mar-2021 **Revision Date** 26-Jan-2024 **Version** 6.1 **Page** 1 / 14

## 1. IDENTIFICATION

**Product identifier** 

Product Name Citric Acid F Reagent Solution

Other means of identification

Product Code(s) 25318000

Safety data sheet number M00341

UN/ID no UN3265

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory reagent. Silica test color stabilization and phosphate removal.

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 1
Serious eye damage/eye 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

H314 - Causes severe skin burns and eye damage

### **Precautionary statements**

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

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

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting

P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

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

P363 - Wash contaminated clothing before reuse

P405 - Store locked up

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

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** 

**Chemical nature** aqueous solution.

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

Mixture.

Chemical name	CAS No	Percent Range	HMRIC #
Citric acid	77-92-9	10 - 20%	-
Propanoic acid	79-09-4	<1%	-

## 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. If breathing has stopped, give artificial respiration. Get medical

attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical

advice/attention.

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**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 while removing all contaminated clothes

and shoes. Get immediate medical advice/attention.

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

to an unconscious person. Do NOT induce vomiting. Get immediate medical

advice/attention.

Self-protection of the first aider

Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the

material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth

resuscitation.

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 Product is a corrosive material. Use of gastric lavage or emesis is contraindicated.

Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood

pressure may occur with moist rales, frothy sputum, and high pulse pressure.

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

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition

can lead to release of irritating gases and vapors.

**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.

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. Attention! Corrosive material. Evacuate personnel to

safe areas. Keep people away from and upwind of spill/leak.

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

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Environmental precautions

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Should not be released into the

environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

Methods and material for containment and cleaning up

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

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder,

sawdust). Take up mechanically, placing in appropriate containers for disposal.

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

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

## 7. HANDLING AND STORAGE

Precautions for safe handling

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

skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. 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
Propanoic acid	TWA: 10 ppm	(vacated) TWA: 10 ppm	TWA: 10 ppm
CAS#: 79-09-4		(vacated) TWA: 30 mg/m <sup>3</sup>	TWA: 30 mg/m <sup>3</sup>
			STEL: 15 ppm
			STEL: 45 mg/m <sup>3</sup>

Appropriate engineering controls

Engineering Controls Showers

Eyewash stations Ventilation systems.

Individual protection measures, such as personal protective equipment

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

**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

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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** Face protection shield.

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

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

product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product.

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** aqueous solution

ueous solution Color colorless

Odor Odorless Odor threshold No data available

Property Values Remarks • Method

Molecular weight No data available

**pH** 1.0 @ 20 °C

Melting point / freezing point  $< \sim 0 \, ^{\circ}\text{C} \, / \, 32 \, ^{\circ}\text{F}$ 

Initial boiling point and boiling range > ~ 100 °C / 212 °F

**Evaporation rate** 0.93 (water = 1)

Vapor pressure 23.252 mm Hg / 3.1 kPa at 25 °C / 77 °F

Relative vapor density 0.62

Specific gravity - VALUE 1 1.07

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

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#### 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 Rate8.23 mm/yr/ 0.32 in/yrAluminum Corrosion Rate0.13 mm/yr/ 0.01 in/yr

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

See ingredients information below

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Citric acid	77-92-9	Not applicable	-
Propanoic acid	79-09-4	No data available	Χ

### **Explosive properties**

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**

None under normal processing.

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#### Conditions to avoid

Exposure to air or moisture over prolonged periods.

## Incompatible materials

Oxidizing agent. Acids. 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** Corrosive by inhalation. Inhalation of corrosive fumes/gases may cause coughing, choking,

headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs.

Pulmonary edema can be fatal.

Eye contact Causes burns. Corrosive to the eyes and may cause severe damage including blindness.

Causes serious eye damage. May cause irreversible damage to eyes.

**Skin contact** Causes severe burns. Corrosive. Avoid contact with skin and clothing.

**Ingestion** Causes burns. Ingestion causes burns of the upper digestive and respiratory tracts. May

cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung

damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing.

#### **Acute toxicity**

Based on available data, the classification criteria are not met

#### **Mixture**

No data available.

## **Ingredient Acute Toxicity Data**

No data available.

Chemical name	Endpoint	Reported	Exposure	Toxicological effects	Key literature references and
	type	dose	time		sources for data
Citric acid (10 - 20%) CAS#: 77-92-9	Rat LD₅o	3000 mg/kg	None reported	None reported	IUCLID
Propanoic acid (<1%) CAS#: 79-09-4	Rat LD₅o	2600 mg/kg	None reported	None reported	IUCLID

### **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

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ATEmix (inhalation-dust/mist)	No information available
ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	No information available

### Skin corrosion/irritation

Causes severe burns.

#### **Mixture**

No data available.

#### 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
Citric acid (10 - 20%) CAS#: 77-92-9	Standard Draize Test	Rabbit	500 mg	24 hours	Mild skin irritant	RTECS
Propanoic acid (<1%) CAS#: 79-09-4	Open Irritation Test	Rabbit	495 mg	None reported	Corrosive to skin	RTECS

### 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
Citric acid (10 - 20%) CAS#: 77-92-9	Standard Draize Test	Rabbit	0.750 mg	24 hours	Eye irritant	RTECS
Propanoic acid (<1%) CAS#: 79-09-4	Standard Draize Test	Rabbit	0.99 mg	None reported	Corrosive to eyes	RTECS

## Respiratory or skin sensitization

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

### **Mixture**

No data available.

## **Ingredient Sensitization Data**

No data available.

Chemical name	Test method	Species	Results	Key literature references and sources for data
Propanoic acid (<1%)	OECD Test No. 406: Skin	Guinea pig	Not confirmed to be a skin sensitizer	IUCLID
CAS#: 79-09-4	Sensitization			

### 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

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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
Γ	Citric acid	77-92-9	-	-	-	-
Γ	Propanoic acid	79-09-4	-	-	-	-

### 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

### **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.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Propanoic acid (<1%) CAS#: 79-09-4	Mutation in microorganisms	Salmonella typhimurium	6.667 mg/plate	None reported	Negative	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.

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### **Aspiration hazard**

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

# 12. ECOLOGICAL INFORMATION

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

**Unknown aquatic toxicity** 0% of the mixture consists of components(s) of unknown hazards to the aquatic

environment.

**Mixture** 

**Aquatic Acute Toxicity** 

No data available.

**Aquatic Chronic Toxicity** 

No data available.

**Substance** 

**Aquatic Acute Toxicity** 

No data available.

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Propanoic acid (<1%) CAS#: 79-09-4	96 hours	Oncorhynchus mykiss	LC50	51.0 mg/L	IUCLID
Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Propanoic acid (<1%) CAS#: 79-09-4	48 Hours	Daphnia magna	EC <sub>50</sub>	45.8 mg/L	IUCLID

### **Aquatic Chronic Toxicity**

No data available.

## Persistence and degradability

Mixture

No data available.

Mixture

No data available.

Partition coefficient Not applicable

**Mobility** 

Soil Organic Carbon-Water Partition Coefficient Not applicable

Other adverse effects
No information available

## 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods

Waste from residues/unused products

Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

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

US EPA Waste Number D002

Special instructions for disposal 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 UN3265

Proper shipping name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.

DOT Technical Name Citric acid

Transport hazard class(es) 8
Packing Group III
Emergency Response Guide 153

Number

TDG

UN/ID no UN3265

Proper shipping name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.

TDG Technical Name Citric acid

Transport hazard class(es) 8
Packing Group | | | |

<u>IATA</u>

UN number or ID number UN3265

**Proper shipping name** Corrosive liquid, acidic, organic, n.o.s.

IATA Technical Name Citric acid

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

**Description** UN3265, Corrosive liquid, acidic, organic, n.o.s. (Citric acid), 8, III

<u>IMDG</u>

UN number or ID number UN3265

Proper shipping name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.

IMDG Technical Name Citric acid
Transport hazard class(es) 8
Packing Group III

EmS-No F-A, S-B Special Provisions 223, 274

Description UN3265, CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (CITRIC ACID), 8, III

**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

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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 PICCS** Complies **TCSI** Complies **AICS** Complies **NZIoC** Complies

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

**ENCS** - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

TCSI - Taiwan Chemical Substances Inventory

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

### **US Federal Regulations**

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

### 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
Propanoic acid 79-09-4	5000 lb	-	-	X

#### CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Propanoic acid	5000 lb	<del>-</del>	RQ 5000 lb final RQ
79-09-4			RQ 2270 kg final RQ

## **US State Regulations**

## **California Proposition 65**

This product does not contain any Proposition 65 chemicals

IMERC: Not applicable

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### 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
Propanoic acid	X	X	X
79-09-4			

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

Chemical name	FIFRA	FDA
Citric acid	180.0950	21 CFR 184.1033
Propanoic acid	180.0940	21 CFR 184.1081

## 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

	NFPA	Health hazards - 3	Flammability - 0	Instability - 0	Physical and chemical properties -
	HMIS	Health hazards - 3	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 (Chemical Carcinogenesis Research Information System) CCRIS CDC (Center for Disease Control) CDC

CEPA (Canadian Environmental Protection Agency) **CEPA** 

CICAD (Concise International Chemical Assessment Documents) **CICAD** 

**ECHA** ECHA (The European Chemicals Agency) EEA EEA (European Environment Agency) **EPA** EPA (Environmental Protection Agency)

ERMA (New Zealands Environmental Risk Management Authority) **ERMA** 

**ECOSARS** Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™

**FDA** FDA (Food & Drug Administration)

GESTIS (Information System on Hazardous Substances of the German Social Accident **GESTIS** 

Insurance)

HSDB (Hazardous Substances Data Bank) **HSDB** 

INERIS (The National Industrial Environment and Risks Institute) **INERIS** IPCS INCHEM (International Programme on Chemical Safety) **IPCS INCHEM IUCLID** IUCLID (The International Uniform Chemical Information Database) Japan National Institute of Technology and Evaluation (NITE) NITE

NIH (National Institutes of Health) NIH

NIOSH (National Institute for Occupational Safety and Health) NIOSH LOLI (List of Lists - An International Chemical Regulatory Database) LOLI

NDF

**NICNAS** Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

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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 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 (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 Date 26-Jan-2024

Revision Note None

## **Disclaimer**

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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**End of Safety Data Sheet** 

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