



Be Right™

# SAFETY DATA SHEET

Issue Date 05-Apr-2020

Revision Date 10-Feb-2025

Version 1.9

Page 1 / 15

## 1. IDENTIFICATION

### Product identifier

**Product Name** Chemical Oxygen Demand Standard Solution 1000 mg/l COD

### Other means of identification

**Product Code(s)** 2253929

**Safety data sheet number** M00593

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

**Recommended Use** Analytical reagent. 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

Harmful to aquatic life

Product Code(s) 2253929

Product Name Chemical Oxygen Demand Standard Solution  
1000 mg/l COD

Issue Date 05-Apr-2020

Revision Date 10-Feb-2025

Version 1.9

Page 2 / 15

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance**

Not applicable

**Mixture**

**Chemical Family**

Mixture.

**Chemical nature**

aqueous solution.

Percent ranges are used where confidential product information is applicable.

Chemical name	CAS No.	Percent Range	HMRIC #
Sulfuric acid, copper(2+) salt (1:1)	7758-98-7	<0.01%	-
Phthalic acid	88-99-3	<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**

**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**

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** 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.

**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.

**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) CAS#: 7758-98-7	TWA: 1 mg/m <sup>3</sup> Cu dust and mist	NDF	IDLH: 100 mg/m <sup>3</sup> Cu dust and mist TWA: 1 mg/m <sup>3</sup> Cu dust and mist

**Appropriate engineering controls**

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

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

<b>Respiratory protection</b>	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
<b>Hand Protection</b>	Wear suitable gloves.
<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles).
<b>Skin and body protection</b>	No special protective equipment required.
<b>General Hygiene Considerations</b>	Handle in accordance with good industrial hygiene and safety practice.
<b>Environmental exposure controls</b>	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.
<b>Thermal hazards</b>	None under normal processing.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

<b>Physical state</b>	Liquid	<b>Color</b>	colorless
<b>Appearance</b>	aqueous solution	<b>Odor threshold</b>	No data available
<b>Odor</b>	Odorless		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>Molecular weight</b>	No data available	
<b>pH</b>	4.1	@ 20 °C
<b>Melting point / freezing point</b>	~ 0 °C / 32 °F	
<b>Initial boiling point and boiling range</b>	~ 100 °C / 212 °F	
<b>Evaporation rate</b>	No data available	
<b>Vapor pressure</b>	17.477 mm Hg / 2.33 kPa at 20 °C / 68 °F	
<b>Relative vapor density</b>	0.62	
<b>Specific gravity - VALUE 1</b>	0.996	
<b>Partition coefficient</b>	Not applicable	
<b>Soil Organic Carbon-Water Partition Coefficient</b>	Not applicable	
<b>Autoignition temperature</b>	No data available	
<b>Decomposition temperature</b>	No data available	
<b>Dynamic viscosity</b>	1 cP (mPa s) at 20 °C / 68 °F	
<b>Kinematic viscosity</b>	1.004 cSt (mm²/s) at 20 °C / 68 °F	

**Solubility(ies)**

**Water solubility**

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

Product Code(s) 2253929

Product Name Chemical Oxygen Demand Standard Solution  
1000 mg/l COD

Issue Date 05-Apr-2020

Revision Date 10-Feb-2025

Version 1.9

Page 5 / 15

#### Solubility in other solvents

Chemical Name	Solubility classification	Solubility	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

##### Corrosive to metals

Steel Corrosion Rate 1.01 mm/yr / 0.04 in/yr  
Aluminum Corrosion Rate 0.05 mm/yr / 0 in/yr

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

Chemical name	CAS No.	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Sulfuric acid, copper(2+) salt (1:1)	7758-98-7	No data available	-
Phthalic acid	88-99-3	No data available	-

##### Explosive properties

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

##### Flammable properties

Flash point No data available

##### 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 None.

#### Possibility of hazardous reactions

None under normal processing.

#### Hazardous polymerization

**Product Code(s)** 2253929

**Issue Date** 05-Apr-2020

**Version** 1.9

**Product Name** Chemical Oxygen Demand Standard Solution  
1000 mg/l COD

**Revision Date** 10-Feb-2025

**Page** 6 / 15

None under normal processing.

**Conditions to avoid**

None known based on information supplied.

**Incompatible materials**

Strong oxidizing agents, strong acids, and strong bases.

**Hazardous decomposition products**

No information available.

## 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
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
Phthalic acid (<0.01%) CAS#: 88-99-3	Rat LD <sub>50</sub>	1530 mg/kg	None reported	None reported	GESTIS

**Dermal Exposure Route**

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid, copper(2+) salt (1:1) (<0.01%) CAS#: 7758-98-7	Rabbit LD <sub>50</sub>	> 2000 mg/kg	None reported	None reported	ECHA
Phthalic acid (<0.01%) CAS#: 88-99-3	Rabbit LD <sub>50</sub>	2740 mg/kg	None reported	None reported	GESTIS

**Inhalation (Dust/Mist) Exposure Route**

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Phthalic acid (<0.01%) CAS#: 88-99-3	Rat LC <sub>50</sub>	> 5.1 mg/L	4 hours	None reported	GESTIS

**Inhalation (Vapor) Exposure Route****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**

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
Sulfuric acid, copper(2+) salt (1:1) (<0.01%) CAS#: 7758-98-7	Standard Draize Test	Rabbit	500 mg	4 hours	Skin irritant	ECHA
Phthalic acid (<0.01%) CAS#: 88-99-3	Patch test	Rabbit	1000 mg	None reported	Not corrosive or irritating to skin	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
Phthalic acid (<0.01%) CAS#: 88-99-3	Rinse Test	Rabbit	100 mg	1 hours	Corrosive to eyes	ERMA

**Respiratory or skin sensitization**

Product Code(s) 2253929

Product Name Chemical Oxygen Demand Standard Solution  
1000 mg/l COD

Issue Date 05-Apr-2020

Revision Date 10-Feb-2025

Version 1.9

Page 8 / 15

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
Phthalic acid (<0.01%) CAS#: 88-99-3	None reported	Guinea pig	Not confirmed to be a skin sensitizer	No information available

**Respiratory Sensitization Exposure Route**

Chemical name	Test method	Species	Results	Key literature references and sources for data
Phthalic acid (<0.01%) CAS#: 88-99-3	None reported	Guinea pig	Not confirmed to be a skin sensitizer	No information 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.

**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
Phthalic acid (<0.01%) CAS#: 88-99-3	Rat TD <sub>Lo</sub>	102 mg/kg	182 days	<b>Blood</b> Changes in serum composition (e.g. TP, bilirubin, cholesterol)	RTECS

**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
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Product Code(s) 2253929

Product Name Chemical Oxygen Demand Standard Solution  
1000 mg/l COD

Issue Date 05-Apr-2020

Revision Date 10-Feb-2025

Version 1.9

Page 9 / 15

Sulfuric acid, copper(2+) salt (1:1)	7758-98-7	-	-	-	-
Phthalic acid	88-99-3	-	-	-	-

#### 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.

#### Substance invitro Data

Test data reported below.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
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

Test data reported below.

#### Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Phthalic acid (<0.01%) CAS#: 88-99-3	Rat TD <sub>Lo</sub>	29810 mg/kg	9 days	<b>Effects on Embryo or Fetus</b> Fetotoxicity (except death e.g. stunted fetus) Maternal Effects Other effects <b>Specific Developmental Abnormalities</b> Musculoskeletal system	RTECS

#### Aspiration hazard

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

## 12. ECOLOGICAL INFORMATION

Product Code(s) 2253929

Product Name Chemical Oxygen Demand Standard Solution  
1000 mg/l COD

Issue Date 05-Apr-2020

Revision Date 10-Feb-2025

Version 1.9

Page 10 / 15

**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
Sulfuric acid, copper(2+) salt (1:1) (<0.01%) CAS#: 7758-98-7	96 hours	<i>Pimephales promelas</i>	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
Sulfuric acid, copper(2+) salt (1:1) (<0.01%) CAS#: 7758-98-7	48 Hours	<i>Daphnia magna</i>	EC <sub>50</sub>	0.0014 mg/L	Vendor SDS
Phthalic acid (<0.01%) CAS#: 88-99-3	48 Hours	<i>Daphnia magna</i>	EC <sub>50</sub>	> 640 mg/L	Vendor SDS

**Algae**

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Sulfuric acid, copper(2+) salt (1:1) (<0.01%) CAS#: 7758-98-7	72 Hours	<i>Thalassiosira pseudonana</i>	EC <sub>50</sub>	0.005 mg/L	ERMA

**Aquatic Chronic Toxicity**

Test data reported below.

**Fish**

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Phthalic acid (<0.01%) CAS#: 88-99-3	60 days	<i>Oncorhynchus mykiss</i>	NOEC	10 mg/L	Vendor SDS

**Crustacea**

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Phthalic acid (<0.01%) CAS#: 88-99-3	21 days	<i>Daphnia magna</i>	NOEC	16 mg/L	Vendor SDS

**Algae**

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Phthalic acid (<0.01%) CAS#: 88-99-3	72 hours	<i>Desmodesmus subspicatus</i>	NOEC	> 100 mg/L	Vendor SDS

**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.

**Contaminated packaging**

Do not reuse empty containers.

**US EPA Waste Number**

No information available

**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.

Product Code(s) 2253929

Product Name Chemical Oxygen Demand Standard Solution  
1000 mg/l COD

Issue Date 05-Apr-2020

Revision Date 10-Feb-2025

Version 1.9

Page 12 / 15

**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**

For inventory status, "complies" means, listed on the inventory, exempted or otherwise complies.

TSCA Complies

DSL/NDSL Complies

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

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

**International Inventories**

EINECS/ELINCS Complies

ENCS Complies

IECSC Complies

KECI Complies

PICCS Complies

TCSI Complies

AICS Complies

NZIoC Complies

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

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

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+)	10 lb	X	-	X

Product Code(s) 2253929

Product Name Chemical Oxygen Demand Standard Solution  
1000 mg/l COD

Issue Date 05-Apr-2020

Revision Date 10-Feb-2025

Version 1.9

Page 13 / 15

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

**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 (1:1) 7758-98-7	X	X	X

**U.S. EPA Label Information**

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) 7758-98-7	Declarable Substance (LR) Prohibited Substance (LR)	None reported

**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 -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	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	Environmental Protection Agency
ERMA	ERMA (New Zealand's 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	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

**Issue Date** 05-Apr-2020

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**Product Code(s)** 2253929

**Issue Date** 05-Apr-2020

**Version** 1.9

**Product Name** Chemical Oxygen Demand Standard Solution  
1000 mg/l COD

**Revision Date** 10-Feb-2025

**Page** 15 / 15

**Revision Note** SDS sections updated  
2

**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**