



# SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 01/26/2015

Version 1.2

## SECTION 1. Identification

### Product identifier

Catalog No. 114690  
Product name COD Cell Test Method: photometric Spectroquant®  
COD

### Relevant identified uses of the substance or mixture and uses advised against

Identified uses Reagent for analysis

### Details of the supplier of the safety data sheet

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821,  
United States of America | General Inquiries: +1-978-715-4321 |  
Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)

Emergency telephone 800-424-9300 CHEMTREC (USA)  
+1-703-527-3887 CHEMTREC (International)  
24 Hours/day; 7 Days/week

## SECTION 2. Hazards identification

### GHS Classification

Corrosive to Metals, Category 1, H290  
Acute toxicity, Category 4, Oral, H302  
Acute toxicity, Category 3, Dermal, H311  
Skin corrosion, Category 1A, H314  
Serious eye damage, Category 1, H318  
For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

#### Hazard pictograms



#### Signal Word

Danger

#### Hazard Statements

H290 May be corrosive to metals.

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H302 Harmful if swallowed.  
H311 Toxic in contact with skin.  
H314 Causes severe skin burns and eye damage.

## *Precautionary Statements*

P234 Keep only in original container.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.  
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.  
P322 Specific measures (see supplemental first aid instructions on this label).  
P361 Remove/Take off immediately all contaminated clothing.  
P363 Wash contaminated clothing before reuse.  
P390 Absorb spillage to prevent material damage.  
P405 Store locked up.  
P406 Store in corrosive resistant stainless steel container with a resistant liner.  
P501 Dispose of contents/ container to an approved waste disposal plant.

## **Other hazards**

None known.

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## **SECTION 3. Composition/information on ingredients**

Chemical nature	Sulfuric acid solution.
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### **Hazardous ingredients**

*Chemical Name (Concentration)*

CAS-No.

*sulphuric acid (>= 50 % - < 70 % )*

7664-93-9

Exact percentages are being withheld as a trade secret.

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## **SECTION 4. First aid measures**

### **Description of first-aid measures**

*General advice*

First aider needs to protect himself.

*Inhalation*

After inhalation: fresh air. Call in physician.

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### *Skin contact*

After skin contact: wash off with plenty of water. Immediately remove contaminated clothing. If available swab with polyethylene glycol 400. Call a physician immediately.

### *Eye contact*

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

### *Ingestion*

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation!). Call a physician immediately. Do not attempt to neutralize.

## **Most important symptoms and effects, both acute and delayed**

Irritation and corrosion

Mercury compounds have a cytotoxic and protoplasmatoxic effect. Intoxication symptoms: acute: contact with eye causes severe lesions. Swallowing and inhalation of dusts damages mucous membranes of gastrointestinal and respiratory tract (metallic taste, nausea, vomiting, abdominal pain, bloody diarrhea, intestinal burns, glottal oedema, aspiration pneumonia); drop in blood pressure, cardiac dysrhythmia, circulatory collapse, and renal failure; chronic: inflammation of the mouth with loss of teeth and mercurial line. The principal signs manifest themselves in the CNS (impaired speech, vision, hearing, and sensitivity, loss of memory, irritability, hallucinations, delirium inter alia).

Risk of blindness!

## **Indication of any immediate medical attention and special treatment needed**

No information available.

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## **SECTION 5. Fire-fighting measures**

### **Extinguishing media**

#### *Suitable extinguishing media*

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### *Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

### **Special hazards arising from the substance or mixture**

Not combustible.

Ambient fire may liberate hazardous vapors.

Fire may cause evolution of:

Sulfur oxides, mercury vapors

### **Advice for firefighters**

#### *Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

#### *Further information*

Cool closed containers exposed to fire with water spray. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## SECTION 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

### Environmental precautions

Do not empty into drains.

### Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up with liquid-absorbent and neutralizing material (e.g. Chemizorb® H<sup>+</sup>, Art. No. 101595).

Dispose of properly. Clean up affected area.

## SECTION 7. Handling and storage

### Precautions for safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols.

Observe label precautions.

### Conditions for safe storage, including any incompatibilities

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Store at +15°C to +25°C (+59°F to +77°F).

The data applies to the entire pack.

## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

#### Ingredients

Basis	Value	Threshold limits	Remarks
<i>sulphuric acid (7664-93-9)</i>			
ACGIH	Time Weighted Average (TWA):	0.2 mg/m <sup>3</sup>	Form of exposure: Thoracic fraction.
NIOSH/GUIDE	Recommended exposure limit (REL):	1 mg/m <sup>3</sup>	
OSHA_TRANS	PEL:	1 mg/m <sup>3</sup>	
Z1A	Time Weighted Average (TWA):	1 mg/m <sup>3</sup>	

### Engineering measures

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### Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

#### *Hygiene measures*

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

#### *Eye/face protection*

Tightly fitting safety goggles

#### *Hand protection*

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

#### *Other protective equipment:*

Acid-resistant protective clothing.

#### *Respiratory protection*

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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## SECTION 9. Physical and chemical properties

Physical state	liquid
Color	orange
Odor	odorless
Odor Threshold	Not applicable
pH	< 0.5 at 68 °F (20 °C)
Melting point	No information available.
Boiling point	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.

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Vapor pressure	No information available.
Relative vapor density	No information available.
Density	ca.1.55 g/cm <sup>3</sup> at 68 °F (20 °C)
Relative density	No information available.
Water solubility	at 68 °F (20 °C) soluble, (development of heat)
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	No information available.
Corrosion	May be corrosive to metals.

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### SECTION 10. Stability and reactivity

#### Reactivity

See below

#### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

#### Possibility of hazardous reactions

A risk of explosion and/or of toxic gas formation exists with the following substances:

Violent reactions possible with:

Water, Alkali metals, alkali compounds, Ammonia, Aldehydes, acetonitrile, Alkaline earth metals, alkalines, Acids, alkaline earth compounds, Metals, metal alloys, Oxides of phosphorus, phosphorus, hydrides, halogen-halogen compounds, oxyhalogenic compounds, permanganates, nitrates, carbides, combustible substances, organic solvent, acetylidene, Nitriles, organic nitro compounds, anilines, Peroxides, picrates, nitrides, lithium silicide, iron(III) compounds, bromates, chlorates, Amines, perchlorates, hydrogen peroxide

#### Conditions to avoid

no information available

#### Incompatible materials

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animal/vegetable tissues, Metals  
Gives off hydrogen by reaction with metals.

**Hazardous decomposition products**  
in the event of fire: See section 5.

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## SECTION 11. Toxicological information

### Information on toxicological effects

*Likely route of exposure*

Eye contact, Skin contact

*Target Organs*

Eyes

Skin

Respiratory system

teeth

Mucous membranes

*Acute oral toxicity*

absorption

Acute toxicity estimate: 973.03 mg/kg

Calculation method

*Acute inhalation toxicity*

absorption

Acute toxicity estimate: > 20 mg/l

Calculation method

*Acute dermal toxicity*

absorption

Acute toxicity estimate : 972.93 mg/kg

Calculation method

*Skin irritation*

Mixture causes severe burns.

*Eye irritation*

Mixture causes serious eye damage.

Risk of blindness!

*Specific target organ systemic toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

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### *Specific target organ systemic toxicity - repeated exposure*

Mixture may cause damage to organs through prolonged or repeated exposure.

### *Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

## Carcinogenicity

IARC	Group 1: Carcinogenic to humans sulphuric acid 7664-93-9
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	Known carcinogen. sulphuric acid 7664-93-9
ACGIH	A2: Suspected human carcinogen sulphuric acid 7664-93-9

## Further information

After inhalation of aerosols: damage to the affected mucous membranes. After skin contact: severe burns with formation of scabs. After eye contact: burns, corneal lesions. After swallowing: severe pain (risk of perforation!), nausea, vomiting and diarrhea. After a latency period of several weeks possibly pyloric stenosis.

Mercury compounds have a cytotoxic and protoplasmatoxic effect. Intoxication symptoms: acute: contact with eye causes severe lesions. Swallowing and inhalation of dusts damages mucous membranes of gastrointestinal and respiratory tract (metallic taste, nausea, vomiting, abdominal pain, bloody diarrhea, intestinal burns, glottal oedema, aspiration pneumonia); drop in blood pressure, cardiac dysrhythmia, circulatory collapse, and renal failure; chronic: inflammation of the mouth with loss of teeth and mercurial line. The principal signs manifest themselves in the CNS (impaired speech, vision, hearing, and sensitivity, loss of memory, irritability, hallucinations, delirium inter alia).

Danger of cumulative effects.

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

## Ingredients

sulphuric acid

*Germ cell mutagenicity*

*Genotoxicity in vitro*

Ames test

Salmonella typhimurium

Result: negative

(HSDB)

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## SECTION 12. Ecological information

### Ecotoxicity



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No information available.

## Persistence and degradability

No information available.

## Bioaccumulative potential

No information available.

## Mobility in soil

No information available.

## Ingredients

sulphuric acid

*Toxicity to daphnia and other aquatic invertebrates*

static test EC50 *Daphnia magna* (Water flea): > 100 mg/l; 48 h

OECD Test Guideline 202

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

## SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

## SECTION 14. Transport information

### Land transport (DOT)

UN number	UN3316
Proper shipping name	CHEMICAL KIT
Class	9
Packing group	II
Environmentally hazardous	--

### Air transport (IATA)

UN number	UN 3316
Proper shipping name	CHEMICAL KIT
Class	9
Packing group	II
Environmentally hazardous	--
Special precautions for user	no

### Sea transport (IMDG)

UN number	UN 3316
Proper shipping name	CHEMICAL KIT

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Class	9
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-A S-P

THIS TRANSPORT DATA APPLIES TO THE ENTIRE PACK!

## SECTION 15. Regulatory information

### United States of America

#### SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

##### *Ingredients*

sulphuric acid	7664-93-9
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#### SARA 302

The following components are subject to reporting levels established by SARA Title III, Section 302:

##### *Ingredients*

sulphuric acid	7664-93-9
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### Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

##### *Ingredients*

sulphuric acid  
potassium dichromate  
mercury(II) sulphate

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

##### *Ingredients*

sulphuric acid  
potassium dichromate  
mercury(II) sulphate

#### DEA List I

Not listed

#### DEA List II

Listed

##### *Ingredients*

sulphuric acid	7664-93-9
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### US State Regulations

#### Massachusetts Right To Know

##### *Ingredients*

sulphuric acid

#### Pennsylvania Right To Know

##### *Ingredients*

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sulphuric acid

## New Jersey Right To Know

### Ingredients

sulphuric acid

## California Prop 65 Components

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

### Ingredients

potassium dichromate

mercury(II) sulphate

## California Prop 65 Components

WARNING: this product contains a chemical known in the State of California to cause cancer.

### Ingredients

sulphuric acid

potassium dichromate

## Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

KOREA: Not in compliance with the inventory

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## SECTION 16. Other information

### Training advice

Provide adequate information, instruction and training for operators.

### Full text of H-Statements referred to under sections 2 and 3.

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.

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

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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