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***HI 93754B-25***
***Reagent Tube for COD Test (25 vials)***

# Safety Data Sheet

According to Regulation (EC) No. 1907/2006

***Revision Date:*** 2008-12-01
***Reason for Revision:*** REACH Compliance and General Update

## SECTION 1: IDENTIFICATION OF THE PRODUCT AND COMPANY

***Product Name:*** Reagent for COD Test (25 vials)
***Application:*** MR COD Analysis: 0 to 1500 mg/L
***Additional Product Codes:*** HI 93754B-25 MR
COD-MR

***Company Information (USA):***
Hanna Instruments, Inc.
584 Park East Dr, Woonsocket, Rhode Island, USA 02895

***Technical Service Contact Information:***
1-800-426-6287 (8:30AM - 5:00PM ET)
+1-401-766-4260 (8:30AM - 5:00PM ET)

***USA Emergency Contact Information:*** 1-800-424-9300 (Chemtrec 24Hr. Emergency)
***International Emergency Contact Information:*** +1-703-527-3887 (Chemtrec 24Hr. Emergency)
***E-mail Address:*** tech@hannainst.com

## SECTION 2: HAZARD IDENTIFICATION

Contact with combustible material may cause fire. Harmful by inhalation. Toxic by inhalation, in contact with skin and if swallowed. Danger of cumulative effects. Causes severe burns. May cause sensitization by inhalation and skin contact. May cause cancer. May cause heritable genetic damage. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. May impair fertility. May cause harm to the unborn child.

## SECTION 3: COMPOSITION AND COMPONENT INFORMATION

| Component: | Sulfuric Acid | Mercury (II) Sulfate | Potassium Dichromate |
|---|---|---|---|
| EC-No.: | 231-639-5 | 231-992-5 | 231-906-6 |
| CAS-No.: | 7664-93-9 | 7783-35-9 | 7778-50-9 |
| Hazard: | C | T+, N | T+, N, O, Carc. Cat. 2, Muta. Cat. 2, Repr. Cat. 2. |
| Phrases: | R: 35 | R: 26/27/28-33-50/53 | R: 8-26-34-42/43-45-46-49-50/53-60-61 |
| Content: | > 50% - <90% | > 0.5 - < 2% | > 0.5 - < 1% |

## SECTION 4: FIRST AID MEASURES

***After Inhalation:*** Remove to fresh air. Summon doctor.
***After Skin Contact:*** Wash effected area with plenty of water. Immediately remove contaminated clothing.
***After Eye Contact:*** Rinse out immediately with plenty of water and seek medical advice.
***After Swallowing:*** Drink plenty of water (if necessary several liters), avoid vomiting (risk of perforation!). Immediately seek medical advice. Do not attempt to neutralize.
***General Information:*** Remove contaminated, soaked clothing immediately and dispose of safely.

## *SECTION 5: FIRE-FIGHTING MEASURES*

***Suitable Extinguishing Media:***

Water spray, Carbon Dioxide, Dry Chemical Powder, Appropriate Foam.

***Special Risks:***

Development of hazardous combustion gases or vapors possible in the event of fire. Hydrogen may form upon contact with metals (danger of explosion!). The following may develop in event of fire: Sulfur Oxides, Mercury Vapors

***Special Protective Equipment:***

Do not stay in dangerous zone without suitable chemical protection clothing and self-contained breathing apparatus.

***Additional Information:***

Product itself is non-combustible. Cool container with spray water from a safe distance. Contain escaping vapors with water. Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

## *SECTION 6: ACCIDENTAL RELEASE MEASURES*

***Personal Precautions:***

Take up with liquid-absorbent material. Clean up affected area and dispose according to local regulation.

***Environmental Precautions:***

Do not discharge into the drains/surface waters/groundwater.

***Additional Notes:***

Render harmless: neutralize with diluted sodium hydroxide solution or by throwing on lime, lime sand, or sodium carbonate.

## *SECTION 7: HANDLING AND STORAGE*

***Handling:***

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

***Storage:***

Tightly closed. In a well-ventilated place at +15 to +25 °C. Protect from light. Store in fridge if possible. Accessible only for authorized persons.

## *SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION*

***Ingredients:***

SULFURIC ACID
EXPOSURE LIMITS - GERMANY

| Source | Type | Value |
|---|---|---|
| TRGS 900 | OEL | 1 mg/m³ |

EXPOSURE LIMITS - DENMARK

| Source | Type | Value |
|---|---|---|
| OEL | TWA | 1 mg/m³ |

MERCURIC SULPHATE
MAK 0.1000 mg/m³
TLV 0.1000 mg/m³

POTASSIUM DICHROMATE
MAK 0.050 mg/ m³
TLV 0.050 mg/m³

***Engineering:***

Maintain general industrial hygiene practice.

***Personal Protective Equipment:***

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

| ***Respiratory Protection:*** | ***Protective Gloves:*** | ***Eye Protection:*** |
|---|---|---|
| Required when vapors/aerosols are generated. Work under hood. | Rubber or plastic | Goggles or face mask |

***Industrial Hygiene:***

Change contaminated clothing. Wash hands after working with substance.

## *SECTION 9: PHYSICAL/CHEMICAL PROPERTIES*

| | | | | | |
|---|---|---|---|---|---|
| ***Appearance:*** | Yellow-orange liquid with undissolved solid | ***Odor:*** | Odorless | ***Density at 20° C:*** | ~ 1.7 g/cm³ |
| ***Melting Point:*** | NA | ***Boiling Point:*** | ND | ***Solubility:*** | Soluble (development of heat) |
| ***pH at 20° C:*** | < 0.5 | ***Explosion Limit:*** | NA | ***Flash Point:*** | NA |
| ***Thermal Decomp.:*** | > 338 °C | | | | |

## *SECTION 10: STABILITY AND REACTIVITY*

***Conditions to be Avoided:***

Strong Heating

***Hazardous Polymerization:***

Will not occur.

***Further Information:***

Hygroscopic. Has a corrosive effect. Incompatible with metals.

***Hazardous Decomposition Products:***

In the event of fire: See section 5.

***Substances to be Avoided:***

Combustible substances, water, metals, metal alloys, alkali metals, alkali compounds, alkali hydroxides, alkali oxides, alkaline earth compounds, alkalis, ammonia, nitrates, sodium carbonate, lithium silicide, halogen-halogen compounds, salts of oxyhalogenic acids, bromates, chromates/perchromates, perchlorates, perchloric acid, permanganates, permanganic acid, organic nitro compounds, nonmetals, nonmetallic oxides, picrates, hydrogen peroxide, nitramide, mercury nitride, ammonium iron (III) sulfate dodecahydrate

## *SECTION 11: TOXICOLOGICAL INFORMATION*

Quantitative data on the toxicity of this product is not available.

***In Case of Inhalation:*** After inhalation of aerosols: damage to the affected mucous membranes.

***In Case of Skin Contact:*** Severe burns with formation of scabs.

***In Case of Eye Contact:*** Burns, corneal lesion.

***In Case of Ingestion:*** Severe pain (risk of perforation!), nausea, vomiting and diarrhea.

***Further Data:*** Systemic effects: Mercury compounds have a cytotoxic and protoplasmatoxic effect. Intoxication symptoms: ACUTE: contact with eyes causes severe lesions. Swallowing and inhalation of dust damages mucous membranes of gastrointestinal and respiratory tract (metallic taste, nausea, vomiting, abdominal pain, bloody diarrhea, intestinal burns, glottal edema, aspiration pneumonia); drop in blood pressure, cardiac disrhythmia, circulatory collapse, and renal failure; chronic. 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). The product should be handled with the usual care when dealing with chemicals.

## *SECTION 12: ECOLOGICAL INFORMATION*

Quantitative data on the ecological effect of this product is not available. Biological effects: High aquatic toxicity. Harmful effect due to pH shift. Caustic even in diluted form. Endangers drinking water supplies if it enters in large quantities in soil and/or waters. Does not cause biological oxygen deficit.

APPLICABLE TO PARTIAL COMPONENT:
Fish toxicity:
Sulfuric acid: lethal from 1.2 mg/L; from 6.3 mg/L lethal in 24h.
mercury: LC50: 0.5 mg/L Hg(II) ions. Hazard for drinking water.
Luminescent bacteria toxicity:
mercuric chloride: EC20: 0.28 mg/L; ED50: 0.35 mg/L.
sodium dichromate: EC20: 1.2 mg/L; ED50: 3.5 mg/L.

***Further Data:*** DO NOT ALLOW TO ENTER WATERS, WASTE WATERS, OR SOIL!

## *SECTION 13: DISPOSAL CONSIDERATIONS*

***Waste Disposal:*** Chemical residues are generally classified as special waste and thus covered by local regulations. Contact local authorities or disposal companies for advice. Handle contaminated packaging in the same way as the substance itself.

## *SECTION 14: TRANSPORTATION INFORMATION*

| ***Land:*** | ***Sea:*** | ***Air:*** |
|---|---|---|
| ADR/RID: 9/PG II/ UN3316<br>Name : CHEMICAL KIT | IMDG: 9/PG II/ UN3316<br>Name: CHEMICAL KIT<br>Marine pollutant | ICAO/IATA: 9/PG II/ UN3316<br>Name: CHEMICAL KIT |

Transport data applies to the COMPLETE KIT!

## *SECTION 15: REGULATORY INFORMATION*

***Labeling according to EC Directives:***

***Symbol:*** T: Toxic
C: Corrosive
O: Oxidizer

***R-phrases:*** 8-20-23/24/25-33-35-42/43-45-46-52/53-60-61: Contact with combustible material may cause fire. Harmful by inhalation. Toxic by inhalation, in contact with skin and if swallowed. Danger of cumulative effects. Causes severe burns. May cause sensitization by inhalation and skin contact. May cause cancer. May cause heritable genetic damage. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. May impair fertility. May cause harm to the unborn child.

***S-phrases:*** 26-28.1-30-45-60-61: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water. Never add water to this product. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions / Safety data sheets.

***Contains:*** Mercury (II) sulphate, sulfuric acid, Potassium dichromate

## *SECTION 16: OTHER INFORMATION*

***Text of R-phrases under Section 3***

8: Contact with combustible material may cause fire.
26/27/28: Very toxic by inhalation, in contact with skin and if swallowed.
33: Danger of cumulative effects.
34: Causes burns.
35: Causes severe burns.
42/43: May cause sensitization by inhalation and skin contact.
45: May cause cancer.
46: May cause heritable genetic damage.
49: May cause cancer by inhalation.
50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
60: May impair fertility.
61: May cause harm to the unborn child.

***Revision Information***

| | |
|---|---|
| **Revision Date:** | 2008-12-01 |
| **Supersedes edition of:** | 2008-01-03 |
| **Reason for revision:** | REACH Compliance and General Update |

***Legend***

NA: Not Applicable
ND: Not Determined

**THE INFORMATION CONTAINED HEREIN IS BASED ON THE PRESENT STATE OF OUR KNOWLEDGE. IT CHARACTERIZES THE PRODUCT WITH REGARD TO THE APPROPRIATE SAFETY PRECAUTIONS. IT DOES NOT REPRESENT A GUARANTEE OF THE PROPERTIES OF THE PRODUCT.**