



# SENTEK

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## Safety Data Sheet

### Section 1: Identification

#### 1.1 Product Identifiers

Product Name Mercury/Mercuric Sulphate Reference Electrode

#### 1.2 Application

Intended Use Reference electrode

#### 1.3 Details of Supplier

Manufacturer/Supplier Sentek Ltd  
Unit 6-7 Crittall Court  
Crittall Drive  
Springwood Industrial Estate  
Braintree  
Essex  
CM7 2SE  
England

Telephone +44 (0) 1376 340456  
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#### 1.4 Emergency Telephone

Emergency Contact +44 (0) 1376 340456

### Section 2: Hazards Identification

#### 2.1 Classification of the Substance or Mixture

##### Health Hazards

##### Mercury

Acute inhalation toxicity – vapours (Category 3), H330

Reproductive toxicity (Category 1B), H360D

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Registered in England No. 2753857



BS EN ISO 9001:2015  
Certificate No. FM 36099



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Specific target organ toxicity – repeated exposure (Category 1), H372

### Mercuric Sulphate

Acute oral toxicity (Category 2), H300

Acute dermal toxicity (Category 1), H310

Acute inhalation toxicity (Category 2), H330

Specific target organ toxicity – single exposure (Category 2), H335

### Environmental Hazards

#### Mercury/Mercuric Sulphate

Acute aquatic toxicity (Category 1), H400

Chronic aquatic toxicity (Category 1), H410

## 2.2 Label Elements

Pictogram



Signal Word

Danger

Hazard Statements

Mercury

H330 - Fatal if inhaled

H360D - May damage the unborn child

H372 - Causes damage to organs through prolonged or repeated exposure

H410 - Very toxic to aquatic life with long lasting effects

Mercuric Sulphate

H300 + H310 + H330 – Fatal if swallowed, in contact with skin, or if inhaled

H410 - Very toxic to aquatic life with long lasting effects



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## Precautionary statements

### Mercury

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection  
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing  
P310 - Immediately seek medical help  
P273 - Avoid release into the environment

### Mercuric Sulphate

P260 - Do not breathe dust/ fume/ gas/ mist/ vapours/ spray  
P262 - Do not get in eyes, on skin, or on clothing  
P301 + P310 + P330 + P331 - IF SWALLOWED: Rinse mouth out. Immediately seek medical help  
P302 + P352 + P310 - IF ON SKIN: Wash with plenty of water. Immediately seek medical help  
P304 + P340 + P310 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately seek medical help  
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection

### 2.3 Other Hazards

No information available

## Section 3: Composition/Information on Ingredients

### 3.1 Substances

Name	Mercury
Formula	Hg
CAS No	7439-97-6

Name	Mercuric Sulphate
Formula	HgSO <sub>4</sub>
CAS No	7783-35-9



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Name	Potassium Sulphate
Formula	$K_2SO_4$
CAS No	7778-80-5
Concentration	0.1M solution in water

Name	Water
Formula	$H_2O$
CAS No	7732-18-5

## Section 4: First Aid Measures

### 4.1 Description of First Aid Measures

General Advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids. Immediate medical attention is required.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Ingestion	Do not induce vomiting. Immediate medical attention is required.
Inhalation	Move to fresh air. If not breathing, give artificial respiration. 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. Immediate medical attention is required

#### Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.



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#### 4.2. Most important symptoms and effects, both acute and delayed

Mercury

Neurological disorders. May cause central nervous system depression: May cause adverse kidney effects: May cause adverse liver effects: Symptoms may be delayed: Chronic exposure damages the brain and the central nervous system

#### 4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically

### Section 5: Firefighting Measures

#### 5.1 Extinguishing Media

Suitable Extinguishing Media

Water Spray, Foam, Dry Powder, Carbon Dioxide

#### 5.2 Special Hazards Arising From the Substance or Mixture

Very toxic. Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Keep product and empty container away from heat and sources of ignition. Do not allow run-off from fire-fighting to enter drains or water courses

#### 5.3 Advice for firefighters

Wear self-contained breathing apparatus pressure-demand and full protective gear. Thermal decomposition can lead to release of irritating gases and vapours.

### Section 6: Accidental Release Measures

#### 6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Ensure adequate ventilation. Use personal protective equipment. Avoid breathing vapours, mist or gas. Avoid dust formation. Keep people away from and upwind of spill. Evacuate personnel to safe areas.



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## 6.2 Environmental Precautions

Do not flush into surface water sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains.

## 6.3 Methods and Materials for Containment and Cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Avoid dust formation. Mercury spill clean-up kits are available.

## Section 7: Handling and Storage

### 7.1 Precautions for Safe Handling

Wear gloves and eye protection. Handle electrode carefully to avoid breakage.

### 7.2 Conditions for Safe Storage, Including any Incompatibilities

Keep electrode labelled and carefully stored to avoid possible breakage

### 7.3 Specific End Uses

No other uses other than those specified in Section 1.2

## Section 8: Exposure Controls/Personal Protection

### 8.1 Control Parameters

#### Components with Workplace Control Parameters

Mercury Exposure limit – TWA: 0.02mg/m<sup>3</sup> 8h

Mercuric Sulphate Exposure limit – TWA: 0.02mg/m<sup>3</sup> 8h

### 8.2 Exposure Controls

#### General Protective and Hygienic Measures

Mercury and mercuric sulphate are held within a solid container. Usual precautionary laboratory methods for handling chemicals should be followed. If the Mercury/Mercury Sulphate Reference Electrode is damaged then measures outlined in Section 6 should be followed.



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## Personal Protective Equipment

### Eye Protection

Use suitable laboratory standard eye protection

### Skin Protection

Handle with gloves

### Body Protection

Not required unless there is spillage – see Section 6

### Respiratory Protection

Not required unless there is spillage – see Section 6

## Environmental Exposure Controls

Do not allow to enter drains

## Section 9: Physical and Chemical Properties

### 9.1 Information on Physical and Chemical Properties

<b>Form:</b>	Reference electrode is a solid container
<b>Colour:</b>	Grey fluid with a tinge of yellow inside the reference electrode
<b>Odour:</b>	Odourless
<b>Odour Threshold:</b>	Not determined
<b>pH:</b>	Not determined
<b>Melting Point/ Freezing Point:</b>	Not determined
<b>Boiling Point/ Boiling Range:</b>	Not determined
<b>Flash Point:</b>	Not determined
<b>Flammability:</b>	Not determined
<b>Auto-ignition Temperature:</b>	Not determined
<b>Decomposition Temperature:</b>	Not determined
<b>Explosion limits:</b>	Not determined
<b>Vapour Pressure:</b>	Not determined
<b>Density:</b>	Not determined
<b>Vapour Density:</b>	Not determined

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<b>Evaporation Rate:</b>	Not determined
<b>Water Solubility:</b>	Not determined
<b>Partition Coefficient: n-octanol/water</b>	Not determined
<b>Viscosity:</b>	Not determined
<b>Explosive Properties:</b>	Not determined
<b>Oxidizing Properties:</b>	Not determined

## 9.2 Other Information

No further relevant information available

## Section 10: Stability and Reactivity

### 10.1 Reactivity

No relevant information available

### 10.2 Chemical Stability

Stable under normal conditions

### 10.3 Possibility of Hazardous Reactions

None known

### 10.4 Conditions to Avoid

Excess heat

### 10.5 Incompatible Materials

Strong oxidizing reagents

### 10.6 Hazardous Decomposition products

Hazardous decomposition formed under fire conditions – sulphur oxides, mercury/mercury oxides

In the event of fire: see Section 5





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## Section 11: Toxicological information

### 11.1 Information on Toxicological Effects

<b>Acute Toxicity:</b>	
<b>Oral</b>	Mercuric Sulphate: Category 2
<b>Dermal</b>	Mercuric Sulphate: Category 1
<b>Inhalation</b>	Mercury: Category 2 Mercuric Sulphate: Category 2
<b>Skin Irritation:</b>	No data available
<b>Eye damage/Irritation</b>	No data available
<b>Sensitization</b>	No data available
<b>Germ Cell Mutagenicity:</b>	No data available
<b>Carcinogenicity:</b>	No data available
<b>Reproductive Toxicity:</b>	Mercury: Category 1B
<b>Specific Target Organ Toxicity:</b>	Mercury: Category 1 – repeated exposure (kidney, liver, central nervous system) Mercuric Sulphate: Category 2 – Repeated exposure may cause damage to organs
<b>Aspiration Hazard:</b>	No data available

## Section 12: Ecological information

### 12.1 Toxicity

Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment. The product contains the following substances which are hazardous for the environment. Do not allow material to contaminate ground water system.

Mercury - Freshwater fish (LC50: 0.9mg/L/96h)

Water fleas (EC50: 5.0µg/L/96h)

Mercuric Sulphate – *Oncorhynchus gorboscha* (LC50: 0.14mg/L/7d)



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## 12.2 Persistence and Degradability

May persist

## 12.3 Bio-accumulative Potential

Mercury has high potential to bioaccumulate

## 12.4 Mobility in Soil

No data available

## 12.5 Result of PBT and vPvB

No data available

## 12.6 Other Adverse Effects

Harmful to aquatic life with long lasting effects

## Section 13: Disposal Considerations

### 13.1 Waste Treatment Methods

Hazardous waste. Dispose of via appropriately licensed disposal company

## Section 14: Transport Information

### 14.1 UN Number

Non-regulated material

### 14.2 UN Proper Shipping Name

Non-regulated material

### 14.3 Transport Hazard Class

Non-regulated material

### 14.4 Packaging Group

Non-regulated material



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#### 14.5 Environmental Hazards

If electrode damaged may release small quantities of pollutant into the environment

#### 14.6 Special Precautions for User

Not applicable

### Section 15: Regulatory Information

#### 15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

International Inventories X = listed

Component	EINECS	TSCA	DSL	PICCS	IECSC	AICS	KECL	ENCS
Mercury	231-106-7	X	X	X	X	X	X	
Mercuric sulphate	231-992-5	X	X	X	X	X	X	X

#### 15.2 Chemical Safety Assessment

A chemical safety assessment has not been carried out

### Section 16: Other Information

The information above is based on our present knowledge and is believed to be correct but shall be used only as a guide. It does not constitute a guarantee for any specific product features.

Date of Preparation/Last Revision 14/01/2020