



MATERIAL SAFETY DATA SHEET

1. Product name / chemical identification

Electrochemical sensor to detect Oxygen (O₂)

2. Composition / information on ingredients

Electrolyte containing potassium acetate, lead, proprietary catalyst alloy electrodes, enclosed in a plastic based housing with attached metal connections. After a short period of use, lead acetate will develop inside the sensor.

3. Hazards identification

The electrolyte and the lead inside the sensor constitute the main potential hazards, and these may become exposed should the housing be damaged.

3.1. Electrolyte (will contain lead acetate)

3.1.1 Inhalation of Electrolyte:

Inhalation is not an expected hazard unless heated to high temperatures. Mist or vapour inhalation can cause irritation to the nose, throat, and upper respiratory tract.

3.1.2 Ingestion of Electrolyte:

May cause irritation of the mouth, throat, and stomach.

3.1.3 Skin or eye contact of electrolyte:

May cause redness, pain, blurred vision, and eye burns.

3.1.4 Aggravation of pre-existing conditions - Electrolyte:

Persons with pre-existing skin disorders or eye problems, or impaired respiratory function may be more susceptible to the effects of the substance. Lead acetate may cause harm to the unborn child and a possible risk of impaired fertility. Danger of cumulative effects.

3.2 Lead:

3.2.1 Hazards - Lead:

Exposure can cause brain damage. May cause damage to blood-forming, nervous, urinary and reproductive systems. Systems of exposure include loss of appetite, metallic taste in the mouth, anxiety, constipation, nausea, pallor, excessive tiredness, weakness, insomnia, headache, nervous irritability, muscle and joint soreness, tremors, dizziness and abdominal pain.

3.2.2 Aggravation of pre-existing conditions - Lead:

Exposure is more likely to cause a problem for those suffering from diseases of the blood-forming, nervous, urinary and reproductive systems. Exposure to lead may result in injury to a developing foetus.

4. First-Aid Measures:

4.1. In case of leakage and:

4.1.1 Eye contact with electrolyte:

Irrigate thoroughly with water for at least 15 minutes. Obtain medical advice.

4.1.2 Inhalation of electrolyte:

Remove to fresh air. Obtain medical advice.

4.1.3 Skin contact with electrolyte:

Immediately flush the skin thoroughly with water for at least 15 minutes. Remove contaminated clothing and wash before re-use. Obtain medical advice if continued irritation.

4.1.4 Ingestion of electrolyte:

If swallowed DO NOT INDUCE VOMITING. Wash out mouth thoroughly with water and give plenty of water to drink. Obtain medical advice.

4.2. In case of physical damage and:

4.2.1 Eye contact with lead:

Irrigate thoroughly with water for at least 15 minutes. Obtain medical advice.

4.2.2 Inhalation of lead, fumes or dust:

Remove to fresh air. Obtain medical advice.

4.2.3 Skin contact with lead:

Immediately flush the skin thoroughly with water for at least 15 minutes. Remove contaminated clothing and wash before re-use. Obtain medical advice if continued irritation.

4.1.4 Ingestion of lead:

If swallowed and individual is conscious induce vomiting. Obtain medical attention.

5. Fire Fighting Measure:

5.1 Fire:

Not considered to be a fire hazard.

5.2 Explosion:

Not considered to be an explosion hazard.

5.3 Fire extinguishing media:

Use any means suitable for extinguishing surrounding fire.

6. Accidental release measures:

6.1 Damage:

Should any O₂ sensor be so severely damaged or tampered with that the leakage of the contents occurs, then the following procedures should be adopted:

- Avoid skin contact with any lead, liquid or internal component through the use of protective gloves.
- Disconnect O₂ cell if it is attached to any equipment.

- Use copious amounts of clean water to wash away any spilt electrolyte, particularly important in equipment because of corrosive nature of the electrolyte.
- Observe first aid measures in case of eye contact, inhalation, skin contact or ingestion of electrolyte or lead.

7. Handling and Storage:

Must not be exposed to temperatures outside the range specified on the specification sheet. Should not be exposed to organic vapors, which may cause physical damage to the body of the sensor. Must not be stored in areas containing organic solvents or in flammable liquid stores.

8. Exposure controls / personal protection:

None in normal operation.

9. Physical and chemical properties:

Sensor is a sealed unit.

10. Stability and reactivity:

N/A

11. Toxicological information:

Electrolyte is corrosive to eyes, respiratory system and skin.

12. Ecological information:

Prolonged exposure in the aquatic and terrestrial environments may lead to the release of some compounds of lead, antimony and arsenic. Very toxic to aquatic organisms.

13. Disposal considerations:

Contains toxic compounds irrespective of physical condition. Should be disposed of according to local waste management requirements and environmental legislation. Should not be burnt since they may evolve toxic fumes.

14. Transport regulations:

Electrochemical gas sensors are classed as non-dangerous and may be transported without special packing, labels, etc. It is important, however, to check any local regulations.

15. Regulatory Information:

R-Phrases: 61-33-40-48/20-62

May cause harm to unborn child. Danger of cumulative effects. Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation. Possible risk of impaired fertility.

S-Phrases: 53-36/37-45

Avoid exposure – obtain special instructions before use. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately.

R-Phrases: 35-36/37/38

Causes severe burns. Irritation to eyes, respiratory system and skin.

S-Phrases: 26-36/37/38

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection.

16. Revision History:

Issue 1 New Issue