

**:: I - PRODUCT IDENTIFICATION ::**

**Product Name:** Electrochemical leadfree Oxygen Sensor, galvanic fuel cell type.  
All medical, diving, industry and automotive FiO<sub>2</sub> cells with weak basic electrolyte.

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**:: II - HAZARDOUS INGREDIENTS/COMPOSITION ::**

Material or Component	C.A.S. #	Quantity	OSHA PEL	ACGIH
Tin (Sn)	7440-31-5	5-20 gms	n.a.	n.a.
Cesium carbonate (Cs <sub>2</sub> CO <sub>3</sub> )	534-17-8	1.5 ml (30% Cs <sub>2</sub> CO <sub>3</sub> in water)	n.a.	n.a.

**:: III - HEALTH HAZARD DATA ::**

**Routes of Entry:**

**Inhalation:** Highly unlikely.  
**Ingestion:** May be harmful if swallowed  
**Skin:** May be harmful if absorbed through skin. Cause of skin irritation  
**Eyes:** The electrolyte (cesium carbonate) causes irritation in eyes.

**Acute Effects:** The electrolyte is harmful if swallowed, inhaled or absorbed through the skin.

**Chronic Effects:** Chronic exposure from the tin contained in this product is extremely unlikely.

**Signs and Symptoms of Exposure:** No data available.

**Carcinogenicity:** No data available

**NTP:** n.a.

**:: IV - EMERGENCY FIRST AID PROCEDURES ::**

In case of contact with the skin or eyes, immediately flush with plenty of water for at least 15 minutes and remove all contaminated clothing. Get medical attention immediately.

If ingested, give large amounts of water and DO NOT INDUCE VOMITING. Obtain medical attention immediately.

If inhaled, remove to fresh air and obtain medical attention immediately.

**:: V - FIRE AND EXPLOSION HAZARD DATA ::**

**Flash Point:** n.a.;

**Flammable Limits:** n.a.;

**LEL:** n.a.;

**UEL:** n.a.;

**Extinguishing Media:**

Use extinguishing media appropriate to surrounding fire conditions. No specific agents recommended.

**Special Fire Fighting Equipment:**

Wear NIOSH/OSHA approved self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

**Unusual Fire and Explosion Hazards:**

n.a.

**:: VI - CLEANUP PROCEDURES ::**

Wipe down the area several times with a wet paper towel. Use a fresh towel each time.

**:: VII - PRECAUTIONS FOR SAFE HANDLING AND USE ::**

**Note:**

**The oxygen sensors are sealed and under normal circumstances the contents of the sensors do not present a health hazard. The following information is given as a guide in the event that a cell leaks.**

**Protective Measures During Cell Replacement:**

Before opening the bag containing the sensor cell, check the sensor cell for leakage. If the sensor cell leaks, do not open the bag. If there is liquid around the cell while in the instrument, wear eye and hand protection.

**:: VIII- EXPOSURE CONTROLS/PERSONAL PROTECTION ::**

**Eye Protection:** Chemical splash goggles

**Hand Protection:** Rubber gloves

**Ventilation:** n.a.

**:: IX - PHYSICAL/CHEMICAL CHARACTERISTICS ::**

Material or Component	Boiling Point (°C)	Specific Gravity	Vapor Pressure	Melting Point (°C)	Density	Evap. Rate	Solubility in Water	Odor/Appearance Physical State
Tin gray, odourless	2270	7.31	n.a.	231.9	7.31	n.a.	Insoluble	Solid,
Cesium carbonate	n.a.	4.072	n.a.	610	4.072	n.a.	Complete	White, No Odor.

**:: X - STABILITY AND REACTIVITY ::**

**Stability:** Stable

**Incompatibilities:** Halogenes, Carbontetrachloride. Strong oxidizing agents, strong acids. Avoid contact with acids and hydrogen peroxide > 52%.

**Hazardous Decomposition:** Hazardous decomposition products formed under fire conditions are producing Carbonoxide.

**Hazardous Polymerization:** Will not occur.

**:: XI - TOXICOLOGICAL INFORMATION ::**

**Toxicity to Animals:** Acute oral toxicity (LD50): 7698.9 mg/kg (Rat) (Calculated value for the C<sub>52</sub> CO<sub>3</sub> solution.)

**Mutagenicity:** No data available.

**:: XII - ECOLOGICAL INFORMATION ::**

**Ecotoxicity:** n.a.

**Environmental Fate:** n.a.

**:: XIII - DISPOSAL CONSIDERATIONS ::**

Waste must be disposed of in accordance with Federal, State and Local environmental control regulations.

**:: XIV - TRANSPORT INFORMATION ::**

**DOT:** Not a DOT controlled material (United States).

**IATA:** Not dangerous goods.

**:: XV - REGULATORY INFORMATION ::**

**Federal and State Regulations:** TSCA 8(b) inventory: Cesium carbonate

**Other Regulations:**

**OSHA:** Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

**Other Classifications:**

**WHMIS (Canada):** CLASS D-2B: Material causing other toxic effects (TOXIC).

**DSCL (EEC):** R38- Irritating to skin. R41- Risk of serious damage to eyes.

**HMIS (U.S.A.):**

Health Hazard:	2
Fire Hazard	0
Reactivity:	0
Personal Protection:	E

**:: XVI - OTHER INFORMATION ::**

All chemicals may pose unknown hazards and should be used with caution. While the information contained in this Material Safety Data Sheet is believed to be correct and is offered for your information, consideration and investigation, IT Dr. Gambert GmbH assumes no responsibility for the completeness or accuracy of the information contained herein.