

Safety Data Sheet – Oxygen Electrochemical Sensors

Section 1: Identification

Electrochemical sensors for: Oxygen

Alphasense Product Codes O2-A1 O2-A2 O2-A3
 O2-C2 O2-C3
 O2-G1 O2-G2

Product Use: Sensing component for gas detection devices
Supplier Name: ALPHASENSE Ltd
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Section 2: Hazard(s) Identification

These sensors are not considered a chemical hazard in normal use and are defined as an article under the OSHA Hazard Communication Standard.

Section 3: Composition / Information on Ingredients

Alphasense electrochemical sensors are sealed units containing:

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| Lead (Pb) (Lead converts to Lead Oxide during use) | 50-73 % |
| Acrylonitrile butadiene styrene ABS (outer casing) | 15-32 % |
| Stainless Steel | 4-14 % |
| Potassium acetate (KC ₂ H ₃ O ₂) electrolyte | 4-6 % |
| Carbon (C Variants Only) | 6 % |
| Graphite (C) | <1 % |
| Antimony (Sb) | <1 % |
| Platinum (Pt) | <1 % |
| Polytetrafluoroethylene (PTFE) | <1 % |
| Cellulose | <1 % |
| Cured epoxy resin glue | <1 % |

Section 4: First-Aid Measures

First Aid measures in the event of exposure to electrolyte leakage:

Rinse immediately in copious amounts of water and seek medical advice if contact with the eyes or mouth has been made.

Section 5: Fire-Fighting Measures

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| Suitable Extinguisher Media | Use extinguisher measures that are appropriate to local circumstances, sensor does not present additional risk |
| Hazardous Combustion products | Thermal decomposition may liberate oxides of carbon and other toxic gases or vapours |
| Advice for fire fighters | Wear self contained breathing apparatus (SCBA) and appropriate protective clothing |

Section 6: Accidental Release Measures

Exposure to the sensor electrolyte (Irritant) is the only component that may potentially prove hazardous to health. Exposure can occur as a result of misuse, incorrect operation, manufacturing error or physical damage. If the sensor is suspected of leaking handle using disposable gloves, nitrile or latex and dispose of following section 13. Small leaks of electrolyte can be mopped up using any suitable absorbent wipe or material.

Section 7: Handling and Storage

Alphasense electrochemical sensors should only be used in the designated manner. Sensors must not be used if damaged and must not be dismantled.

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| Environmental Conditions: | Sensors must not be exposed to temperatures, humidities and pressures outside the ranges quoted in the individual sensor datasheets. |
| Storage Conditions: | Sensors must be stored in airtight containers between 0 and 20°C. |
| Shelf-life: | Maximum of 6 months |

Section 8: Exposure Control / Personal Protection

Personal precautions in normal use: No eye or skin protection required.

Section 9: Physical and Chemical Properties

Alphasense electrochemical sensors are sealed solid units containing small quantities of materials listed in section 3.

Section 10: Stability and Reactivity

Stability: Stable under recommended storage conditions.

Section 11: Toxicological Information

Alphasense electrochemical sensors are sealed units containing small quantities of Lead (Pb)

Lead Oxide (PbO)

Antimony (Sb)

Deliberate disassembly can lead to exposure to these materials.

Section 12: Ecological Information

At the end of the product's life Alphasense sensors must be disposed of in an environmentally safe manner, in compliance with relevant local waste disposal and environmental legislation. In standard use the sensor poses no risk to the environment.

Section 13: Disposal Considerations



Do not dispose of any electronic sensor, component or instrument in the domestic waste, but contact the instrument manufacturer, Alphasense or its distributor for disposal instructions.

Oxygen sensors contain lead and should not be disposed of in normal trade waste. Sensors must not be burned because of the potential risk of evolution of toxic fumes.

Section 14: Transport Information

There are no general requirements for special labelling or packaging, although you are advised to check for specific local regulations.

The following regulations apply to Alphasense electrochemical sensors:

UN2800 (Batteries Wet Non-Spillable), Dangerous Goods Regulation Section 4.5

Section 15: Regulatory Information

Oxygen sensors are exempt from the provisions of The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2008, as amended, ("the RoHS Regulations") in the UK and the European Parliament and Council Directive on the Restrictions of the use of certain Hazardous Substances in electrical and electronic equipment ("the RoHS Directive"), as amended.

The European Union's REACH Directive (EC 1907/2006) imposes requirements for the Registration, Evaluation and Authorisation of Chemical substances for products sold in EU countries. Alphasense continue to monitor whether any of the Substances of Very High Concern (SVHC) on the "Candidate List" are present in the products we supply. To date we have identified that these sensors do contain Lead (CAS 7439-92-1, EC 231-100-4) in a concentration greater than 0.1%w/w.

Section 16: Other Information

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| Preparation Date | 07/09/2011 | |
| Revision Date | 09/11/2018 | |
| Revision Summary | 07/09/2012 | Reformatted to 16 Section format |
| | 08/05/2012 | Minor amendments |
| | 21/08/2015 | Reformatted and updated to SDS format |
| | 03/09/2018 | REACH statement included for Lead |
| | 09/11/2021 | % Composition of material added |