

Safety Data Sheet – Toxic Electrochemical Sensors

Section 1: Identification

Electrochemical sensors:

AMMONIA (NH ₃)	NH3-AF, NH3-B1
CHLORINE (Cl ₂)	CL2-A1, CL2-B1, CL2-D4
CARBON MONOXIDE (CO)	CO-AE, CO-AF, CO-AX, CO-A4, CO-BF, CO-BX, CO-B4, CO-CE, CO-CF, CO-CX, CO-D4, COH-A2, D2
ETHYLENE OXIDE (EtO)	ETO-A1, ETO-B1
HYDROGEN (H ₂)	H2-AF, H2-BF
HYDROGEN CHLORIDE (HCl)	HCL-A1, HCL-B1
HYDROGEN CYANIDE (HCN)	HCN-A1, HCN-B1, HCN-D4
HYDROGEN PEROXIDE (H ₂ O ₂)	H2O2-A1, H2O2-B1
HYDROGEN SULFIDE (H ₂ S)	H2S-A1, H2S-AE, H2S-AH, H2S-A4, H2S-B1, H2S-BE, H2S-BH, H2S-B4, H2S-D4, H2S-DE, COH-A2, D2, SOH-A2, WH2S-B1, WH2S-BE, WH2S-BH
NITRIC OXIDE (NO)	NO-A1, NO-AE, NO-A4, NO-B1, NO-B4, NO-D4
NITROGEN DIOXIDE (NO ₂)	NO2-A1, NO2-AE, NO2-A43F, NO2-B1, NO2-B43F, NO2-D4
OXYGEN - LEAD FREE (O ₂)	LFO2-A4
OZONE (O ₃)	OX-A431, OX-B431, O3-AH
PHOSPHINE (PH ₃)	PH3-A1, PH3-B1, PH3-BE
SULFUR DIOXIDE (SO ₂)	SO2-AE, SO2-AF, SO2-A4, SO2-BE, SO2-BF, SO2-B4, SO2-D4, SOH-A2
VOC's	VOC-A4, VOC-B4

Product Use:	Sensing component for gas detection devices
Supplier Name:	ALPHASENSE Ltd
Address:	Sensor Technology House, 300 Avenue West, Skyline 120, Great Notley, Essex. CM77 7AA. UK
Telephone Number:	+ 44 (0) 1376 556700
Fax Number:	+ 44 (0) 1376 335899
Email:	sensors@alphasense.com

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 toxic electrochemical sensors are sealed units containing:

Polycarbonate or Noryl™ – sensor housing	78–93 %
Sulphuric acid (H ₂ SO ₄) {CAS-No. 7664-93-9} or propylene carbonate	3–7 %
Viton	2–7 %
Potassium permanganate (KMnO ₄)	0–7 %
Manganese dioxide (MnO ₂)	
Silver Sulphate (Ag ₂ SO ₄)	
Brass	2–6 %
Platinum (Pt) or other noble metals or other non-toxic catalysts	1 %
Polytetrafluoroethylene (PTFE)	<1 %
Glass fibre	<1 %
Carbon	<1 %
Other	<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

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 (acid) 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 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.

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 the materials listed in section 3. Deliberate disassembly can lead to exposure to these materials.

Section 12: Ecological Information

At the end of the products life Alphasense sensors must be disposed of in an environmentally safe manner, in compliance with relevant local waste disposal and environmental legislation.

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.

Sensors must not be burned because of the potential risk of evolution of toxic fumes.

If in doubt, contact Alphasense and we will advise on methods of disposal or, if within the UK, arrange for disposal.

Section 14: Transport Information

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

Section 15: Regulatory Information

The following regulations apply to Alphasense electrochemical sensors:

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

Section 16: Other Information

Preparation Date	07/09/2011	
Revision Date	21/12/2020	
Revision Summary	07/09/2012	Reformatted to 16 Section format
	08/05/2012	Minor amendments
	14/11/2013	New products added
	21/08/2015	Reformatted and updated to SDS format and new products added
	10/04/2019	WH2S sensors added to Section 1
	08/07/2019	New products added
	21/12/2020	H2S-DE Added
	13/05/2021	O3-AH Added
	16/06/2021	VOC-A4 & VOC-B4 Added
	09/11/2021	% Composition of material added