

Electrochemical O₂ Sensors: Background Gas Compatibility.

Analytical Industries' Oxygen Analyzers and Sensors are based on the galvanic measurement principle. They are suitable for the measurement of O₂ in a variety of gases from percentage, through to low PPB levels. Because of this, they can be used in a large range of applications.

It is important to check the suitability of the electrochemical sensor for the background gas it may be used in. This table is designed to help you select the right AII sensor for your needs. If you do not find the background gas you intend to measure in listed, please contact us at info@aii1.com

Chemical Name	Formula	GPR/PSR Sensors	XLT Sensors
Acetic Acid (vapor)	H ₃ COOH	Not Recommended	Suitable; requires filter, condenses at room temp
Acetone (vapor)	(CH ₃) ₂ CO	Suitable; requires filter, condenses at room temp	Suitable; requires filter, condenses at room temp
Acetylene	HCCH	Suitable	Suitable
Acrylonitrile	C ₃ H ₃ N	Suitable	Suitable
Air	N ₂ +O ₂ +Ar	Suitable	Suitable
Ammonia	NH ₃	Limited use 2-3 hrs daily; flush with N ₂	Not Recommended
Argon	Ar	Suitable	Suitable
Arsine	AsH ₃	Not Recommended	Not Recommended
Butadiene (limits life)	C ₄ H ₆	Limited life 3-4 months	Not Recommended
Butane	C ₄ H ₁₀	Suitable	Suitable
Carbon Dioxide	CO ₂	Suitable < 5000 PPM CO ₂	Suitable
Carbon Disulfide	CS ₂	Suitable < 1000 PPM CS ₂	Suitable
Carbon Monoxide	CO	Suitable	Suitable
Chlorinated Hydrocarbons	C+H+Cl	Suitable	Suitable
Chlorine	Cl ₂	Not Recommended	Not Recommended
Chloro-fluorocarbons	H+F+Cl+C	Suitable	Suitable
Ethyl Acetate	C ₄ H ₈ O ₂	Suitable	Suitable
Ethylene	C ₂ H ₄	Suitable	Suitable
Fluorine	F ₂	Not Recommended	Not Recommended
Formaldehyde (vapors)	CH ₂ O	Suitable; requires filter, condenses at room temp	Suitable; requires filter, condenses at room temp
Helium	He	Suitable	Not Recommended
Heptanes	C ₇ H ₁₆	Suitable; requires filter, condenses at room temp	Suitable; requires filter, condenses at room temp
Hexanes (limits life)	C ₆ H ₁₄	Suitable; requires filter, condenses at room temp	Suitable; requires filter, condenses at room temp
Hydrocarbons	H+C	Suitable	Suitable
Hydrochloric Acid (vapors)	HCl	Not Recommended	Suitable; requires filter, condenses at room temp
Hydrogen	H ₂	Suitable	Not Recommended

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Hydrogen Cyanide	HCN	Suitable	Suitable
Hydrogen Fluoride	HF	Not Recommended	Not Recommended
Hydrogen Sulfide	H ₂ S	Suitable; remove H ₂ S > 10 PPM	Suitable; remove H ₂ S > 10 PPM
Isopropyl Acetate	C ₅ H ₁₀ O ₂	Suitable	Suitable
Isopropyl Alcohol (IPA)	C ₃ H ₈ O	Suitable; requires filter, condenses at room temp	Suitable; requires filter, condenses at room temp
Methane	CH ₄	Suitable	Suitable
Methanol EtOH (vapors)	CH ₃ OH	Suitable; requires filter, condenses at room temp	Suitable; requires filter, condenses at room temp
Methanol MeOH (vapors)	CH ₄ O	Suitable; requires filter, condenses at room temp	Suitable; requires filter, condenses at room temp
Methyl Iodide (vapors)	CH ₃ I	Suitable; requires filter, condenses at room temp	Suitable; requires filter, condenses at room temp
MTBE (vapors)	C ₅ H ₁₂ O	Suitable; requires filter, condenses at room temp	Suitable; requires filter, condenses at room temp
Nitric Oxide	NO	Low PPM NO concentrations only	PPM NO concentrations only
Nitrogen	N ₂	Suitable	Suitable
Nitrogen Dioxide	NO ₂	Not Recommended	Not Recommended
Nitrous Oxide	N ₂ O	Low PPM NO concentrations only	Low PPM NO concentrations only
NOx	NO, NO ₂	Low PPM NOx concentrations only	Low PPM NOx concentrations only
Octofluorocyclobutane	C ₄ F ₈	Suitable	Suitable
Ozone	O ₃	Not Recommended	Not Recommended
Pentane (vapors)	C ₅ H ₁₂	Suitable; requires filter, condenses at room temp	Suitable; requires filter, condenses at room temp
Phosgene	CCl ₂ O	Not Recommended	Not Recommended
Phosphane	PH ₃	Not Recommended	Not Recommended
Propane	C ₃ H ₈	Suitable	Suitable
Propene Aldehyde (vapors)	C ₃ H ₄ O	Suitable; requires filter, condenses at room temp	Suitable; requires filter, condenses at room temp
Propionic Acid (vapors)	C ₃ H ₆ O ₂	Not Recommended	Suitable; requires filter, condenses at room temp
Propylene	C ₃ H ₆	Suitable	Suitable
Silane	SiH ₄	Not Recommended	Not Recommended
Styrene	C ₈ H ₈	Suitable	Suitable
Sulfuric Acid (vapors)	H ₂ SO ₄	Not Recommended	Suitable; remove H ₂ SO ₄ > 10 PPM
Sulfur Dioxide	SO ₂	Low PPM SO ₂ concentrations only	Low PPM SO ₂ concentrations only
Sulfur Hexafluoride (limits life)	SF ₆	Suitable	Suitable
Tetrafluoromethane (vapors)	CF ₄	Suitable; requires filter, condenses at room temp	Suitable; requires filter, condenses at room temp

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Tetrahydrofurane (vapors)	C ₄ H ₈ O	Suitable; requires filter, condenses at room temp	Suitable; requires filter, condenses at room temp
Toluene (vapors)	C ₇ H ₈	Suitable; requires filter, condenses at room temp	Suitable; requires filter, condenses at room temp
Trimethylaluminum (vapors)	(CH ₃) ₃ Al	Suitable; requires filter, condenses at room temp	Suitable; requires filter, condenses at room temp
Turpene (vapors, limits life)	(C ₁₀ H ₁₆) _n	Remove low concentrations; otherwise Not Suitable	Remove low concentrations; otherwise Not Suitable
Vinyl Acetate (vapors)	C ₄ H ₆ O ₂	Suitable; requires filter, condenses at room temp	Suitable; requires filter, condenses at room temp
Vinyl Chloride (vapors)	C ₂ H ₃ Cl	Suitable	Suitable