

Midas[®] SENSOR CARTRIDGE SPECIFICATIONS

Silane Low Level (SiH₄) MIDAS-S-SHL, MIDAS-E-SHL



Gas Measured	Phosphorous Oxychloride (SiH ₄)
Cartridge Part Number	MIDAS-S-SHL 1 year standard warranty MIDAS-E-SHL 2 year extended warranty
Sensor Technology	3 electrode electrochemical cell
Measuring Range (ppm)	SiH ₄ 0 – 2ppm
Minimum Alarm 1 Set Point	0.24ppm
Lower Detectable Limit (LDL)	0.18ppm
Repeatability	< ± 5% of measured value
Linearity	< ± 10% of measured value
Response Time t_{62.5}	< 3 seconds
Sensor Cartridge Life Expectancy	≥ 24 months under typical application conditions
Operating Temperature	0°C to +40°C (32°F to 104°F)
Effect of Temperature	< ± 0.0017ppm / °C (0°C to 20°C) < ± 0.006ppm / °C (20°C to 40°C) < ± 1% of measured value / °C
Operating Humidity (continuous)	15 – 90% rH
Effect of Humidity	Zero < 0.0014ppm / % rH Sensitivity < ± 2% of measured value / % rH
Operating Pressure	90 – 110kPa
Effect of Position	No effect in typical application
Long Term Drift	Zero TBA Sensitivity < ± 10% of measured value / year
Calibration Gas	Silane (SiH ₄)
Challenge Gas (Bump Test)	Hydrogen Sulphide (H ₂ S)
Warm Up Time	< 20 minutes
Storage Temperature	+5°C to +25°C (+41°F to +77°F)

The sensor data listed is based on ideal test environment; observed performance may vary based on the actual monitoring system and the sampling conditions employed

Cross Sensitivities

Each Midas[®] sensor is potentially cross sensitive to other gases and this may cause a gas reading when exposed to other gases than those originally designated. The table below presents typical readings that will be observed when a new sensor cartridge is exposed to the cross sensitive gas (or a mixture of gases containing the cross sensitive species).

Gas / Vapor	Chemical Formula	Concentration Applied (ppm)	Reading (ppm SiH ₄)
Ammonia	NH ₃	100	0
Arsine	AsH ₃	1	1
Carbon Monoxide	CO	2000	0.1
Chlorine	Cl ₂	5	-0.6
Diborane	B ₂ H ₆	1	0.7
Ethanol	C ₂ H ₅ OH	500	0
Hydrogen	H ₂	5000	Max 0.2, Avg 0.1
Hydrogen Chloride	HCl	8.7	1.6
Hydrogen Fluoride	HF	10	0
Hydrogen Sulphide	H ₂ S	5	1.8
Iso Propanol	C ₃ H ₇ OH	500	0
Nitrogen Dioxide	NO ₂	50	-11
Phosphine	PH ₃	1	1.4
Sulphur Dioxide	SO ₂	50	1.4

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Toll-free: 800.538.0363

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