

Midas[®] SENSOR CARTRIDGE SPECIFICATIONS

Hydride Group (B₂H₆ GeH₄) MIDAS-S-HYD, MIDAS-E-HYD



Gas Measured	Diborane B ₂ H ₆
Cartridge Part Number	MIDAS-S-HYD 1 year standard warranty MIDAS-E-HYD 2 year extended warranty
Sensor Technology	3 electrode electrochemical cell
Measuring Range (ppm)	B ₂ H ₆ 0 – 0.4ppm
Minimum Alarm 1 Set Point	0.050ppm
Lower Detectable Limit (LDL)	0.036ppm
Repeatability	< ± 5% of measured value
Linearity	< ± 10% of measured value
Response Time _{102.5}	< 20 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	< ± 0.0008ppm / °C (0°C to 20°C) < ± 0.0035ppm / °C (20°C to 40°C)
Zero Sensitivity	< ± 1% of measured value / °C
Operating Humidity (continuous)	20 – 90% rH (non-condensing)
Effect of Humidity	Initial short term drift at abrupt RH change (< 0.0075ppm / % rH)
Zero Sensitivity	< ± 0.5% of measured value / % rH
Operating Pressure	90 – 110kPa
Effect of Position	No effect in typical application
Long Term Drift	
Zero Sensitivity	< ± 0.05ppm / year < 5% of measured value / 6 months
Calibration Gas	Diborane (B ₂ H ₆)
Challenge Gas (Bump Test)	Phosphine (PH ₃)
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

Other Detectable Gases

The following additional gases can be detected with this sensor cartridge. Sensor performance and characteristics will be representative of the data as tabulated above. Consult the Technical Manual to set up the Midas[®] transmitter with the designated identification code for each of the following gas types.

Detectable	Gas Chemical Formula	Measuring Range
Germane	GeH ₄	0 – 0.8ppm

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 B ₂ H ₆)
Ammonia	NH ₃	100	0.14
Arsine	AsH ₃	0.2	0.28
Carbon Monoxide	CO	100	0
Carbon Dioxide	CO ₂	5000	0
Chlorine	Cl ₂	1	- 0.1
Germane	GeH ₄	0.5	0.35
Hydrocarbons		% range	0
Hydrogen	H ₂	3000	0
Hydrogen Chloride	HCl	5	0
Hydrogen Cyanide	HCN	10	0.35
Hydrogen Sulphide	H ₂ S	1.0	0.35
Iso Propanol	C ₃ H ₇ OH	2000	0
Nitrogen Dioxide	NO ₂	10	- 2.8
Phosphine	PH ₃	0.1	0.18
Silane	SiH ₄	0.2	0.21
Sulphur Dioxide	SO ₂	2	0.28

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