



Midas® Sensor Cartridge Specifications

Arsine (AsH₃), Germane (GeH₄) MIDAS-E-ASH, MIDAS-S-ASH

Gas Measured	Arsine (AsH ₃)
Cartridge Part Number	MIDAS-S-ASH MIDAS-E-ASH
Sensor Technology	3 electrode electrochemical cell
Measuring Range	AsH ₃ 0 - 200ppb
Minimum Alarm 1 Set Point	5ppb
Lower Detection Limit	5ppb
Linearity	< ± 10% of measured value
Repeatability	< ± 10% of measured value
Resolution	1ppb
Response Time t_{62.5}	≤ 15 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	
Zero	< ± 4ppb / °C
Sensitivity	< ± 0.9% of measured value / °C
Operating Humidity	10 to 90% RH
Effect of Humidity	
Zero	< ± 1ppb / % RH
Sensitivity	< ± 0.4% of measured value / % RH
Operating Pressure	90 – 110kPa
Effect of Position	No effect in typical application
Long Term Drift	
Zero	< 5ppb / year
Sensitivity	< 5% of measured value / 6 months
Calibration Gas	Arsine (AsH ₃)
Bump Test Gas	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 - 800ppb

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 Measured	Chemical Formula	Concentration Applied(ppm)	Reading (ppb AsH ₃)
Ammonia	NH ₃	108	<100
Carbon Dioxide	CO ₂	5000	0
Carbon Monoxide	CO	85	0
Chlorine	Cl ₂	0.85	0 (Negative Drift)
Diborane	B ₂ H ₆	0.1	50
Disilane	Si ₂ H ₆	0.27	12
Germane	GeH ₄	0.27	50
Hydrogen	H ₂	3100	0 (Negative Drift)
Hydrogen Chloride	HCl	7.9	0
Hydrogen Cyanide	HCN	3.6	200 (Over Range)
Hydrogen Fluoride	HF	7.2	0
Hydrogen Selenide	H ₂ Se	0.8	200 (Over Range)
Hydrogen Sulfide	H ₂ S	18.2	0
Iso Propanol	C ₃ H ₈ O	20000	0
Methane	CH ₄	18000	0
Nitrogen Dioxide	NO ₂	10	0 (Negative Drift)
Phosphine	PH ₃	0.1	120
Silane	SiH ₄	0.3	50
	SO ₂	17.8	0

m cartridge to cartridge and over cell life. It is not rate with cross sensitivity factors. The target gas should