



## Midas<sup>®</sup> SENSOR CARTRIDGE SPECIFICATIONS

### Arsine (AsH<sub>3</sub>), Germane (GeH<sub>4</sub>) MIDAS-S-ASH, MIDAS-E-ASH

Gas Measured	Measured Arsine (AsH <sub>3</sub> )
<b>Cartridge Part Number</b>	MIDAS-S-ASH 1 year standard warranty MIDAS-E-ASH 2 year extended warranty
<b>Sensor Technology</b>	3 electrode electrochemical cell
<b>Measuring Range (ppm)</b>	AsH <sub>3</sub> 0 – 0.2ppm
<b>Minimum Alarm 1 Set Point</b>	0.025ppm
<b>Lower Detectable Limit (LDL)</b>	0.018ppm
<b>Repeatability</b>	< ± 2% of measured value
<b>Linearity</b>	< ± 10% of measured value
<b>Response Time t<sub>92.5</sub></b>	< 15 seconds
<b>Sensor Cartridge Life Expectancy</b>	≥ 24 months under typical application conditions
<b>Operating Temperature</b>	0°C to + 40°C (32°C to 104°F)
<b>Effect of Temperature</b>	
Zero	< ± 0.004 ppm / °C (0° to 40°C)
Sensitivity	< ± 0.9% of measured value / °C
<b>Operating Humidity (continuous)</b>	10 – 95% rH non-condensing
<b>Effect of Humidity</b>	
Zero	Initial short term drift at abrupt rH change (< 0.001 ppm / % rH)
Sensitivity	< ± 0.2% of measured value / % rH
<b>Operating Pressure</b>	90 – 110kPa
<b>Effect of Position</b>	No effect in typical application
<b>Long Term Drift</b>	
Zero	< 0.05ppm / year
Sensitivity	< 5% of measured value / 6 months
<b>Calibration Gas</b>	Arsine (AsH <sub>3</sub> )
<b>Challenge Gas (Bump Test)</b>	Phosphine (PH <sub>3</sub> )
<b>Warm Up Time</b>	< 20 minutes
<b>Storage Temperature</b>	+5°C to +25°C (+41°F to +77°F)

Calibration			
	Range	LDL	LAL
AsH <sub>3</sub>	0-0.2ppm	0.018ppm	0.025ppm
GeH <sub>4</sub>	0-0.8ppm	0.08ppm	0.095ppm

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<sup>®</sup> 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 AsH <sub>3</sub> )
Ammonia	NH <sub>3</sub>	108	<0.1
Carbon Dioxide	CO <sub>2</sub>	5,000	0
Carbon Monoxide	CO	85	0
Chlorine	Cl <sub>2</sub>	TBD	<-0.05
Diborane	B <sub>2</sub> H <sub>6</sub>	0.1	0.05
Disilane	Si <sub>2</sub> H <sub>6</sub>	0.27	0.12
Germane	GeH <sub>4</sub>	0.27	0.05
Hydrogen	H <sub>2</sub>	3100	<-0.05
Hydrogen Chloride	HCl	7.9	0
Hydrogen Cyanide	HCN	3.6	0.2
Hydrogen Fluoride	HF	7.2	0
Hydrogen Selenide	H <sub>2</sub> Se	0.8	0.24
Hydrogen Sulphide	H <sub>2</sub> S	18.2	0
Iso Propanol	C <sub>3</sub> H <sub>7</sub> OH	20,000	0
Methane	CH <sub>4</sub>	18,000	0
Nitrogen Dioxide	NO <sub>2</sub>	10	-2.2
Phosphine	PH <sub>3</sub>	0.1	0.12
Silane	SiH <sub>4</sub>	0.3	0.05
Sulphur Dioxide	SO <sub>2</sub>	17.8	0

Interference differs from cartridge to cartridge and over cell life. It is not recommended to calibrate with cross sensitivity factors. The target gas should be used for calibration.

#### Find out more

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