

# Gas Capability List

## for Chemcassette<sup>®</sup>-based Monitors

Gas Capability List  
T/N 971037 August, 2000

This technical note provides a listing of the Lowest Detectable Limit (LDL) and Full Scale (FS) for each Chemcassette area monitor. The table lists each gas calibration by instrument. Zellweger Analytics continues to develop new calibrations, detection ranges, and specialized alarm ranges. Contact your Zellweger representative for any specialized ranges not listed.

**technical note**

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## Gas Capabilities List, Chemcassette<sup>®</sup>-Based Gas Monitors

Gas Name (Formula)	Single-Point Monitors					Multi-Point Monitors	
	Model 7100	IsoLogger <sup>®</sup>	TLD ChemKey	SPM & SPM ChemKey	EGM	System-16	CM4
<b>Amines Family</b>							
Ammonia (NH <sub>3</sub> )	2.5-200.0 ppm		2.6-75.0 ppm	2.6-75.0 ppm		4-250.0 ppm	
Ammonia-II	1.3-250.0 ppm		2.6-75.0 ppm	2.6-75.0 ppm	2.6-75.0 ppm	2.8-75.0 ppm	3-75 ppm
Ammonia-II - low level	0.1-75.0 ppm			*0.5-30.0 ppm			
Ammonia-II - ultra dry					2.6-75.0 ppm		
n-Butylamine (N-BA)	0.5-20.0 ppm		0.4-12.0 ppm	0.4-12.0 ppm	0.4-12.0 ppm		
Dimethylamine (DMA) - low level				0.1-6 ppm	0.1-6.0 ppm		
Methylene Dianiline (MDA)			3-60 ppb	3-60 ppb			
p-Phenylene Diamine (PPD)	4-200 ppb		2-60 ppb	2-60 ppb			
Toluene Diamine (TDA)			4-60 ppb	4-60 ppb			
Triethylamine (TEA)				*0.5-15.0 ppm			0.3-35 ppm
Trimethylamine (TMA)	2.4-100.0 ppm		1.1-30.0 ppm	1.1-30.0 ppm	1.1-30.0 ppm	2.9-100.0 ppm	
Bromine (Br <sub>2</sub> )	18-1000 ppb		11-300 ppb	11-300 ppb	11-300 ppb	15-1000 ppb	
Chlorine (Cl <sub>2</sub> )	0.2-10.0 ppm		0.1-3.0 ppm	0.1-3.0 ppm *0.5-3.0 ppm	0.1-3.0 ppm	0.1-10.0 ppm	
Chlorine-II	0.05-5.00 ppm		0.05-1.50 ppm	0.05-1.50 ppm		0.07-5.00 ppm	0.1-5.0 ppm
Chlorine-III	0.14-5.0 ppm		0.15-1.5 ppm	0.15-1.5 ppm	0.15-1.5 ppm	0.10-5.0 ppm	0.08-5.0 ppm
Chlorine-III - low level	4-9999 ppb			*1-30 ppb	*1-30 ppb		7-2000 ppb
Chlorine-III - ultra dry					0.5-1.5 ppm		
Chlorine Dioxide (ClO <sub>2</sub> )	28-1000 ppb		11-300 ppb	11-300 ppb	11-300 ppb		30-1000 ppb
<b>Fluorine</b>							
Fluorine (F <sub>2</sub> )			0.1-3.0 ppm	0.1-3.0 ppm	0.1-3.0 ppm	0.15-10 ppm	0.06-10 ppm
Fluorine - low level			0.06-1 ppm	0.06-1 ppm	0.06-1 ppm		

Gas Name (Formula)	Single-Point Monitors					Multi-Point Monitors	
	Model 7100	IsoLogger®	TLD ChemKey	SPM & SPM ChemKey	EGM	System-16	CM4
<b>Diisocyanate Family</b>							
Cyclohexane Diisocyanate (CHDI)	2-200 ppb		2-60 ppb	2-60 ppb			
Hexamethylene Diisocyanate (HDI)	2-60 ppb	1-60 ppb	1-60 ppb	1-60 ppb			
Hydrogenated Methylene-bis-phenylisocyanate (HMDI)	2-80 ppb		2-60 ppb	2-60 ppb			
Isocyanatoethyl-methacrylate (IEM)	5-200 ppb		2-60 ppb	2-60 ppb			
Isophorone Diisocyanate (IPDI)	2-200 ppb	1-60 ppb	2-60 ppb	2-60 ppb			
Methylchloroformate (MCF)				*35-1000 ppb			
Methyl Isocyanate (MIC)	6.0-80.0 ppm						
Methylene-bis-phenylisocyanate (MDI)	2-200 ppb	0.5-60 ppb	2-60 ppb	2-60 ppb			
Methylene-bis-phenylisocyanate (MDI-II)	1-200 ppb		2-60 ppb	2-60 ppb			
Naphthalene Diisocyanate (NDI)	2-50 ppb		2-60 ppb	2-60 ppb			
p-chlorophenylisocyanate (PCPI)	5-80 ppb						
p-phenylene Diisocyanate (PPDI)	1-200 ppb		2-60 ppb	2-60 ppb			
Tetramethylxylene Diisocyanate (TMXDI)	2-200 ppb		2-60 ppb	2-60 ppb			
Toluene Diisocyanate (TDI)	1-200 ppb	0.2-80 ppb	2-60 ppb	1-60 ppb			
Trimethylhexamethylene Diisocyanate (TMDI)	3-80 ppb		2-60 ppb	2-60 ppb			
Xylene Diisocyanate (XDI)	3-200 ppb		2-60 ppb	2-60 ppb			
Ethylchloroformate	*0.03-10 ppm						

Gas Name (Formula)	Single-Point Monitors					Multi-Point Monitors	
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<b>Hydrazines Family</b>							
Dimethyl Hydrazine (UDMH)	10-5000 ppb		53-1500 ppb	53-1500 ppb			3-5000 ppb
Dimethyl Hydrazine - high level				*0.2-6.0 ppm			
Dimethyl Hydrazine - low level	3-100 ppb		5-30 ppb	5-30 ppb			
Hydrazine (N <sub>2</sub> H <sub>4</sub> )	10-1000 ppb		20-300 ppb	20-300 ppb			
Hydrazine - high level				*0.4-6.0 ppm			
Hydrazine - low level			2-30 ppb	2-30 ppb			
Hydrazine - low level	*5-1000 ppb			*11-300 ppb			
Hydrazine - ultra-low level	*2-1000 ppb						
Monomethyl Hydrazine (MMH)	10-2000 ppb		21-600 ppb	21-600 ppb			
Monomethyl Hydrazine - high level	*0.01-15 ppm						
Monomethyl Hydrazine - low level	5-100 ppb		3-30 ppb	3-30 ppb			

Gas Name (Formula)	Single-Point Monitors					Multi-Point Monitors	
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<b>Hydrides Family</b>							
Arsine (AsH <sub>3</sub> )	3-500 ppb	5-500 ppb	15-150 ppb	15-150 ppb	15-150 ppb	7-1000 ppb	5-500 ppb
Arsine - dry, low level	1-500 ppb						
Arsine - ultra-dry					15-150 ppb		5-500 ppb
Arsine - low level	1-200 ppb						
Arsine - XP Chemcassette			10-150 ppb	10-150 ppb	5-150 ppb	5-1000 ppb	2.5-500 ppb
Arsine - low level, XP Chemcassette			0.5-15 ppb	0.5-15 ppb		0.7-200 ppb	0.3-25 ppb
Diborane (B <sub>2</sub> H <sub>6</sub> )	15-1000 ppb		31-300 ppb	31-300 ppb	31-300 ppb	25-1000 ppb	15-1000 ppb
Diborane - low level	1-500 ppb						
Diborane - XP Chemcassette			11-300 ppb	11-300 ppb	11-300 ppb	13-1000 ppb	10-1000 ppb
Digermane (Ge <sub>2</sub> H <sub>6</sub> )						*92-2000 ppm	
Disilane	0.3-50.0 ppm		1.5-15 ppm	1.5-15 ppm	1.5-15.0 ppm		
Germane (GeH <sub>4</sub> )	0.15-2.00 ppm		141-600 ppb	141-600 ppb	141-600 ppb	187-2000 ppb	100-2000 ppb
Hydrogen Selenide (H <sub>2</sub> Se)	21-1000 ppb		20-150 ppb	20-150 ppb	20-150 ppb	11-500 ppb	6-500 ppb
Phosphine (PH <sub>3</sub> )	5-3000 ppb		32-900 ppb	32-900 ppb	32-900 ppb	10-3000 ppb	5-3000 ppb
Phosphine - ultra-dry					32-900 ppb		
Phosphine - low level	1-1000 ppb						
Phosphine - XP Chemcassette			32-900 ppb	32-900 ppb	32-900 ppb	8-3000 ppb	5-3000 ppb
Silane (SiH <sub>4</sub> )	0.6-50.0 ppm		0.5-15 ppm	0.5-15 ppm	0.5-15.0 ppm	1.3-50.0 ppm	0.5-50 ppm
Silane - dry				*0.5-15.0 ppm	*0.5-15.0 ppm		
Silane - ultra-dry					1-15 ppm		
Silane - XP Chemcassette			0.3-15 ppm	0.3-15 ppm	0.3-15 ppm	0.4-50 ppm	0.3-50 ppm

Gas Name (Formula)	Single-Point Monitors					Multi-Point Monitors	
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<b>Hydrides Family (continued)</b>							
Silane - low level	35-9999 ppb						
Stibine (SbH <sub>3</sub> )	10-1000 ppb		20-300 ppb	20-300 ppb	20-300 ppb	16-1000 ppb	
Tertiarybutylarsine (TBA)	10-300 ppb		15-150 ppb	15-150 ppb	15-150 ppb	20-500 ppb	12-500 ppb
Tertiarybutylphosphine (TBP)	75-3000 ppb		60-900 ppb	60-900 ppb	60-900 ppb	78-3000 ppb	
Hydrogen Cyanide (HCN)	0.5-100.0 ppm		1.1-30.0 ppm	1.1-30.0 ppm	1.1-30.0 ppm	0.7-100.0 ppm	0.5-50 ppm
Hydrogen Cyanide - low level	90-4000 ppb		*70-1500 ppb				
Hydrogen Peroxide (H <sub>2</sub> O <sub>2</sub> )	0.1-10.0 ppm		0.1-3.0 ppm	0.1-3.0 ppm	0.1-3.0 ppm		
Hydrogen Peroxide - dry				*0.2-3.0 ppm			
Hydrogen Sulfide (H <sub>2</sub> S) (H <sub>2</sub> S Chemcassette)	0.2-50.0 ppm		1.1-30.0 ppm	1.1-30.0 ppm *0.7-20.0 ppm *50-1500 ppb	1.1-30.0 ppm	0.1-100.0 ppm	0.5-100 ppm
Hydrogen Sulfide (Hydrides Chemcassette)	*0.1-20.0 ppm			*1.1-30.0 ppm *0.7-20.0 ppm		0.1-50 ppm	1-100 ppm
Hydrogen Sulfide (Hydrides Chemcassette) - low level	3-1000 ppb			*2-90 ppb *53-1500 ppb			
Hydrogen Sulfide - low level (H <sub>2</sub> S Chemcassette)	2-5000 ppb		*1-90 ppb	1-90 ppb			8-2000 ppb
Hydrogen Sulfide - high humidity (9600: H <sub>2</sub> S Chemcassette)				*1.1-30 ppm			

Gas Name (Formula)	Single-Point Monitors					Multi-Point Monitors	
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<b>Mineral Acids Family</b>							
Boron Trifluoride (BF <sub>3</sub> ) - low level			67-1000 ppb	67-1000 ppb			100-1500 ppb
Hydrogen Bromide (HBr)	0.1-30.0 ppm		0.3-9.0 ppm	0.3-9.0 ppm	0.3-9.0 ppm	1.0-30.0 ppm	0.3-30 ppm
Hydrogen Bromide - dry					*0.3-9.0 ppm		
Hydrogen Chloride (HCl)	0.2-100.0 ppm	0.2-30 ppm	0.5-15.0 ppm	0.5-15.0 ppm	0.5-15.0 ppm	0.6-30.0 ppm	0.5-15 ppm
Hydrogen Chloride - low level	40-9999 ppb		*30-1200 ppb	30-1200 ppb	*30-1200 ppb		80-8000 ppb
Hydrogen Chloride - dry, low level					*50-1500 ppb		
Hydrogen Chloride - ultra-dry					0.5-15.0 ppm		
Hydrogen Fluoride (HF)	0.7-30.0 ppm		0.6-9.0 ppm	0.6-9.0 ppm	0.6-9.0 ppm	0.7-30.0 ppm	0.3-30 ppm
Hydrogen Fluoride - ultra-dry					0.6-9.0 ppm		
Hydrogen Fluoride - low level	140-9999 ppb						
Hydrogen Iodide (HI)				0.3-9.0 ppm			0.1-25 ppm
Nitric Acid (HNO <sub>3</sub> )	0.1-20.0 ppm		0.2-6.0 ppm	0.2-6.0 ppm			
Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> )	75-2500 ppb		26-750 ppb	26-750 ppb			
Sulfuric Acid - high level			*100-3000 ppb				
Nitrogen Dioxide (NO <sub>2</sub> )	0.4-50.0 ppm		0.3-9.0 ppm	0.3-9.0 ppm	0.3-9.0 ppm	0.15-15.0 ppm	0.3-30 ppm
Nitrogen Dioxide (NO <sub>2</sub> ) (Cl <sub>2</sub> III Chemcassette)							0.3-30 ppm
Nitrogen Dioxide - high level				* 0.5-45.0 ppm			
Nitrogen Dioxide - low level	2-9999 ppb						
Nitrogen Trifluoride (NF <sub>3</sub> ) (using Pyrolyzer)				*2-30 ppm		2.5-30.0 ppm	1-50 ppm
Ozone (O <sub>3</sub> )	9-1000 ppb		31-300 ppb	31-300 ppb	31-300 ppb		
Phosgene (COCl <sub>2</sub> )	12-1000 ppb	10-1000 ppb	11-300 ppb	11-300 ppb	11-300 ppb	7-1000 ppb	7-1000 ppb
Phosgene - high level	12-4700 ppb			*32-900 ppb	*32-900 ppb		
Sulfur Dioxide (SO <sub>2</sub> )	0.1-20.0 ppm		0.2-6.0 ppm	0.2-6.0 ppm	0.2-6.0 ppm	0.1-20.0 ppm	
Sulfur Dioxide - low level	5-9999 ppb			*5-200 ppb			

**Notes for Gas Capabilities List:**

**Ammonia II calibration uses Amines/Ammonia Chemcassette.  
Chlorine II calibration uses Chlorine/Oxidizers Chemcassette.  
Chlorine-III calibration uses Chlorine-III/Oxidizers Chemcassette.  
MDI II calibration is for "larger" particle sizes.**

**\* Special calibration not released to production; handled as a "VIP."**

**New calibrations are being developed on a continuous basis.  
Please contact Zellweger Analytics for gases and detection ranges not  
listed.**

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