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Technical Note

XPV Chlorine-3 Chemcassette® Detection

1998-1041 Rev 1 5/22

The **XPV Chlorine-3** Chemcassette® is formulated for sensitivity and specificity to Cl_2 and F_2 on Vertex. The XPV Chlorine-3 formulation has the additional benefit of longer life (pn# 1295-0565 = 90-day) and greatly reduced cross interferences over the Fluorine Chemcassette (pn# 1295-0220 = 30-day), while maintaining response times and detection levels for both Cl_2 and F_2 gas. In addition, Ozone (O_3) sensitivity has been reduced over the XPV Chlorine-II Chemcassette (pn# 1295-0560).

Other compounds that exhibit positive but weaker response include:

Bromine, Br_2	Nitric Oxide, NO* (forms NO_2 in air)
Chlorine Dioxide, ClO_2	Nitrogen Dioxide, NO_2
Hydrogen Peroxide, H_2O_2	Oxygen Difluoride, OF_2
Iodine, I_2	Ozone, O_3
Nitric Acid, HNO3 (forms of NO_2 in air)	Xenon Difluoride, XeF_2

* See Technical Note 1998-0150, "Monitoring for leaks from pure nitric oxide sources with Chemcassette® Technology"

Combined interferents include:
SO_2 has a slight additive effect when present with Cl_2 but has no effect by itself.

Visual Stain Color observation:
Low levels of ambient Oxidizers, such as Nitrogen Dioxide (NO_2) and Ozone (O_3), may be present in your workplace air. These ambient oxidizers may cause some light stains to appear on the Chemcassette tape. Vertex with the standard range gas calibrations of Chlorine and Fluorine in XPV Chlorine family will not respond unless a hazardous concentration of the target gas is present. However, Vertex may report low concentrations in cases where monitoring the low-level gas calibration curves (Cl2-LL and or F2-LL) are selected. Visual inspection of stains on a Chemcassette tape is only used to verify that a target gas was present when the instrument detected it. Light staining that might occur from ambient gases appears and responses as follows:

Compound	Stain Color	Gas Conc.	Vertex response as			
			Cl2-LL as ppm Cl2 (LDL: 0.007ppm)	**Cl2 as ppm Cl2** (LDL: 0.05ppm)	**F2-LL as ppm F2** (LDL: 0.03 ppm)	**F2 as ppm F2** (LDL: 0.06ppm)
Chlorine (Cl_2)	Gray/Brown	0.5 ppm	**0.50 ppm**	**0.50 ppm**	0.88 ppm	0.90 ppm
Fluorine (F_2)	Brown	0.5 ppm	0.40 ppm	0.40 ppm	**0.50 ppm**	**0.50 ppm**
Nitrogen (NO_2)	Yellow/Brown	0.5 ppm	0.00 ppm	**0.00 ppm**	0.00 ppm	**0.00 ppm**
Ozone (O_3)	Bright Yellow	1.0 ppm	0.04 ppm	**0.00 ppm**	0.06 ppm	**0.06 ppm**

Note: It is advised that in high humidity and high level of ambient pollutant application field, the standard detection range of Cl_2 and F_2 gas calibrations should be selected instead of correspondent low level range calibrations to avoid false alarm trigged by ambient air pollutants.

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The **XPV Chlorine-3** Chemcassette® **WILL NOT** respond to:

Acids
Alcohols
Amines
Ammonia
Bromoform
Carbon Disulfide
Carbon Tetrachloride
m-Chlorobenzene
Chloroform
o-Dichlorobenzene
Dimethyl Sulfate
Epichlorohydrin
Ethylene Dichloride
Freons
Hydrazines
Hydrides
Hydrocarbons
Hydrogen
Hydrogen Bromide
Hydrogen Chloride
Hydrogen Cyanide
Hydrogen Fluoride
Hydrogen Sulfide
Isocyanates
Methyl Bromide
Methyl Chloride
Methylene Chloride
Nitrogen
Nitrous Oxide
Phosgene
Solvents
Sulfur Dioxide
Trichloroacetic Acid
Trichloroethane

Ordering Information

Instrument	Part Number	Description
Vertex / Vertex-M	1295-0565	XPV Chlorine-3
****Vertex and Vertex-M Software Version Required*		
1.25.15 or later		

Please refer to the Gas List in the Vertex or Vertex M Manual for specification of gas calibrations (XP-CL2-3 family: CL2, CL2-LL, F2, F2-LL).

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Find out more:
https://sps.honeywell.com/us/en/products/safety/gas-and-flame-detection

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