

Technical Note

XPV Chlorine-II Chemcassette® Detection

1998-1028 Rev 1 2/19

The XPV Chlorine-II Chemcassette® is formulated for sensitivity and specificity to Cl₂ and F₂ on Vertex. The XPV Chlorine-II formulation has the additional benefit of longer life (pn# 1295-0560 = 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 Cl₂ and F₂.

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 ₂ O ₂	Oxygen Difluoride OF ₂
Iodine I ₂	Ozone O ₃
Nitric Acid HNO ₃ (forms 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 interferences include:

SO₂ has a slight (20-40%) additive effect when present with Cl₂, but has no effect by itself.

Visual Stain Color observation:

Low levels of ambient Oxidizers, such as Nitrogen Dioxide (NO₂) and Ozone (O₃), 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			
			Cl ₂ -LL as ppm Cl ₂ (LDL: 0.007ppm)	Cl ₂ as ppm Cl ₂ (LDL: 0.05ppm)	F ₂ -LL as ppm F ₂ (LDL: 0.03 ppm)	F ₂ as ppm F ₂ (LDL: 0.06ppm)
Chlorine (Cl ₂)	Gray/Brown	0.5 ppm	0.50 ppm	0.50 ppm	0.95 ppm	1.15 ppm
Fluorine (F ₂)	Brown	0.5 ppm	0.22 ppm	0.25 ppm	0.50 ppm	0.50 ppm
Nitrogen (NO ₂)	Yellow/Brown	1.0 ppm	0.010 ppm	0.0 ppm	0.038 ppm	0.0 ppm
Ozone (O ₃)	Bright Yellow	0.55ppm	0.020 ppm	0.0 ppm	0.060 ppm	0.0 ppm

Note: It is advised that in high humidity and high level of ambient pollutant application field, the standard detection range of Cl₂ and F₂ gas calibrations should be selected instead of correspondent low level range calibrations to avoid false alarm triggered by ambient air pollutants.

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

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

Ordering Information

Instrument	Part Number	Description
Vertex / Vertex-M	1295-0560	XPV Chlorine-II
<i>***Vertex and Vertex-M Software Version Required</i>		
<i>1.25.12 or later</i>		

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

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