



FR-C2A1 FILTER

Technical Data and Manufacturer Certifications

Part Number:	S-70019-F01
Shelf Life:	10 Years (Foil-Sealed; S-70019-F01) or 5 Years (Polybag; S-70019-001)
Diameter:	4.23 inches (107mm)
Height:	3.0 inches (76mm) overall
Approx. Weight:	9 ounces (255 grams)
Connection:	EN 148-1 (40mm) NATO thread
Body Material:	Noryl® GFN1
Pressure Drop:	40 mm H ₂ O (nominal) measured at NIOSH airflow rate of 85 lpm
Protections:	<i>NIOSH-Approved Protection meeting/exceeding 42 CFR Part 84 requirements:</i>

Particulates (APR)	P100
Particulates (PAPR)	HE
Chlorine	(CL)
Hydrogen Chloride	(HC)
Sulfur Dioxide	(SD)
o-Chlorobenzylidene malononitrile	(CS Tear Gas)
α-Chloroacetophenone	(CN Tear Gas)

Military Chemical Warfare Agent (CWA) Protection*:

Chloropicrin	(PS)
Cyanogen Chloride	(CK)
Dimethyl Methylphosphonate	(DMMP)
Hydrogen Cyanide	(AC)
Phosgene	(CG)
Sarin	(GB)

*Note: There are no NIOSH approval protocols for the above chemical agents when tested in accordance with the requirements foot-noted in the chemical warfare agent test table (next page).

NIOSH Approved Configuration with the IRT FR-C2A1 Filter



FR-C2A1 FILTER INDEPENDENT TEST DATA

FR-C2A1 FILTER EXCEEDS GAS SERVICE LIFE REQUIREMENTS SPECIFIED IN 42 CFR PART 84

Gas/Vapor Challenge	Formula	Test Concentration (ppm)	Breakthrough Concentration (ppm)	Exceeds NIOSH 42 CFR Part 84 Minimum Service Life Rqmts		
				APR Service Life Rqmts (in minutes)	PAPR Service Life Rqmts As received (in minutes)	PAPR Service Life Rqmts Equilibrated (in minutes)
Chlorine (CL)	Cl ₂	500	5.0	17.5	17.5	8.7
Hydrogen Chloride (HC)	HCl	500	5.0	25	25	12.5
Sulfur Dioxide (SD)	SO ₂	500	5.0	15	15	7.5
o-Chlorobenzylidene malonitrile (CS)	ClC ₆ H ₄ CH=C(CN) ₂	3	0.05	480	480	480
α-Chloroacetophenone (CN)	C ₆ H ₅ COCH ₂ Cl	16	0.05	480	480	480

FR-C2A1 FILTER EXCEEDS MILITARY CHEMICAL WARFARE AGENT REQUIREMENTS¹

Gas Challenge	Test Concentration (mg/m ³)	Test Flow Rate (lpm)	Testing Relative Humidity (%)	Breakthrough Concentration (mg/m ³)	Minimum Required Service Life Time (in minutes)
Chloropicrin (PS) ²	5000	30	80	5	27
Cyanogen Chloride (CK) ³	4000	32	80	8	30
Cyanogen Chloride (CK) ⁴	4000	30	80	5	55
Cyanogen Chloride (CK) – Aged ⁴	4000	30	80	5	45
Dimethyl Methylphosphonate (DMMP) ^{3,5}	3000	50	≤15	0.04	59
Dimethyl Methylphosphonate (DMMP) ^{4,5}	3000	30	<15	0.04	175
Hydrogen Cyanide (AC) ⁴	4000	32	80	5	28
Phosgene (CG) ⁴	20,000	32	50	8	25
Sarin (GB) ³	4000	32	≤15	0.04	83

Notes:

1. There are no NIOSH approval protocols for testing chemical warfare agents in accordance with the requirement referenced in note 2 thru 4 below.
2. Cartridge gas service life testing in accordance with QSTAG 295, Second Draft.
3. Cartridge gas service life testing in accordance with MIL-PRF-51560C.
4. Carbon gas service life testing in accordance with MIL-DTL-32101A.
5. Dimethyl Methylphosphonate is a surrogate test agent for Sarin.

ITAR WARNING: This product is controlled by the U.S. Munitions List and International Traffic in Arms Regulations. U.S. State Department authority for export from the United States is required. Re-export, re-transfer, or disclosure to unauthorized parties, including non-US Persons is prohibited.