

## Clean Agent Hand Portable Extinguishers

### Features

- Meets or exceeds requirements of ANSI/UL 2129 and 711/ULC S508 and S566
- Listings and approvals include UL, ULC, and FAA
- Simple operation and maintenance
- Bilingual, glare-resistant, one-piece mylar nameplates
- Rechargeable
- Manufactured of durable high quality materials
- Operating temperature range is  $-40^{\circ}\text{F}$  to  $120^{\circ}\text{F}$  ( $-40^{\circ}\text{C}$  to  $49^{\circ}\text{C}$ )
- Large, easy-to-read pressure gauge
- Six-year limited warranty from date of delivery to original end-user purchaser
- Sold and serviced through a network of independent distributors in every state and most foreign countries
- Recharge tank, 50 lb (22.7 kg) HFC-236fa agent; DOT and TC marked

### Applications

CLEANGUARD extinguishers are designed for protection of light and ordinary hazards. These compact and portable extinguishers are designed for commercial and compliance fire protection needs. Typical applications include:

- Computer rooms
- Essential communication areas
- Irreplaceable data, document, and art storage rooms
- Laboratories
- Sensitive/expensive equipment

### Description

1. CLEANGUARD shells are produced by a single-step cold deep draw process which yields a seamless steel cylinder with an extremely high tensile strength.
2. Unique pre-treatment of the raw low carbon steel not only consists of a cleaning process, but also applies a special lubricant which helps keep the interior and exterior shell surfaces scratch-free.
3. The collar and specially preformed bottom enclosure are MIG welded to produce a smooth, high integrity weld.
4. Extinguisher shells are 100% factory air tested in excess of 600 psi (41.4 bar).



5. Proprietary metal finishing equipment and a two-coat powder paint system is superior to conventional liquid and powder paint systems. The equipment and the two-coat system work together to maximize the properties of each paint.
6. Prior to painting, a custom designed shot blaster is used to obtain a "white metal" finish on the exterior of the shell. The blasting process removes surface contaminants and provides a textured surface which promotes paint adhesion.
7. The specially formulated two-coat powder paint system is electrostatically applied and cured in infrared ovens. First, an epoxy primer is applied for maximum corrosion resistance and adhesion. Then, to resist fading, cracking, and chipping; a polyester urethane top coat is applied.
8. Easy grip extinguisher handles designed for maximum portability, allow operators to fight the fire without removing work gloves.
9. CLEANGUARD extinguisher valve bodies are made from a durable extruded aluminum alloy which has been black anodized for additional corrosion resistance.
10. Completed valve assemblies feature plated steel valve stems which contain o-ring and seat material compatible with the HFC-236fa agent to provide reliable performance and long life.
11. Rugged all-steel pick-up tubes help provide proper and dependable agent flow through the valve body.
12. Aluminum alloy hose ferrules are protected with a corrosion-resistant coating.
13. CLEANGUARD extinguishers have large, color-coded pressure gauges which provide a quick visual indication of unit readiness.

## Description (Continued)

14. Metal ring pins with metal retention chains are utilized and held in place by a visual seal to help prevent accidental discharges
15. One-piece bilingual mylar label with easy-to-read pictograms provides the user with step-by-step operating instructions and the hazard classes for which the extinguisher was designed. Label also contains useful recharge, maintenance, inspection, operating temperature, HMIS, WHMIS and model information.
16. Large, easy-to-scan bar coded model and UL serial numbers simplify inspection and maintenance record keeping.
17. CLEANGUARD valve subassemblies are 100% tested for functionality before final assembly.
18. CLEANGUARD extinguishers are filled at the factory to precise tolerances.
19. Pressurized and 100% leak tested utilizing mass spectrometry technology.
20. Anodized metal nozzle tips are designed to tight specifications and maximize the suppression capabilities of the particular model.
21. CLEANGUARD extinguishers are shipped from the factory in individual recyclable corrugated cardboard cartons. Designed and field tested to help assure your extinguishers arrive undamaged and ready for operation. The glued one-piece cartons have carrying handles and a pressure gauge inspection port.
22. As a final quality control step, CLEANGUARD extinguishers are randomly sampled for performance testing, which includes weight percent discharge and discharge times.

## Agent

HFC-236fa is a colorless, odorless, electrically non-conductive "clean" agent which discharges as a liquid and flashes to a gas, providing an increased effective firefighting range. HFC-236fa will not cause thermal shock damage to delicate electronic equipment.

HFC-236fa has been accepted by the EPA for commercial, industrial, and military use under the EPA's SNAP program.

A recharge tank (Part No. 442817) containing 50 lb (22.7 kg) of HFC-236fa is available for servicing CLEANGUARD hand portable extinguishers. The tank includes DOT and TC marks.

## Listings

CLEANGUARD FE02, FE05S, FE09, and FE13 extinguishers are UL and ULC listed.

## Approvals

CLEANGUARD FE05S, FE09, and FE13 extinguishers are approved by the U.S. Coast Guard and the Federal Aviation Agency (FAA) for use aboard both civilian and commercial aircraft as replacements for Halon 1211 extinguishers

## Ordering Information

For fire protection assistance, see your nearest Authorized CLEANGUARD Distributor.

## HFC-236fa Clean Agent

**Exceptionally effective fire suppressant.** The extinguishing concentration (cup burner) of HFC-236fa is only 5.9% – and because it discharges as a liquid, it also provides an effective discharge range up to 16 ft (4.9 m).

**Safe for sensitive electronic components.** HFC-236fa is electrically nonconductive, residue-free, and will not cause thermal shock damage.

**EPA/SNAP Acceptance.** HFC-236fa has been accepted by the EPA for commercial, industrial, and military use under the EPA's SNAP program. It boasts ZERO Ozone Depletion Potential and is NOT scheduled for phase-out by the Montreal Protocol.

**Very low toxicity.** The Lowest Observable Adverse Effects Level (LOAEL) of HFC-236fa is 15%, well above its suppressing concentration. Other agents have LOAEL's of only 1% or 2% which is actually below their suppressing concentrations.

**Note:** The converted metric values in this document are provided for dimensional reference only and do not reflect an actual measurement.

CLEANGUARD and the product names listed in this material are marks and/or registered marks. Unauthorized use is strictly prohibited.

## Specifications

CLEANGUARD Extinguishers		 009077	 009078	 009079	 009080
<b>Model</b>		<b>FE02VB</b>	<b>FE05S</b>	<b>FE09</b>	<b>FE13</b>
<b>Part No. (UL)</b>		429107	442255	429021	429022
<b>Part No. (ULC)</b>		429596	442256	429598	429599
<b>Bracket Part No.</b>		24610 – (Included)	429146	422737	30937
<b>Agent Capacity</b>		2.5 lb (1.1 kg)	4.75 lb (2.2 kg)	9.5 lb (4.3 kg)	13.25 lb (6.0 kg)
<b>Charged Weight</b>		5.0 lb (2.3 kg)	9.33 lb (4.23 kg)	21.81 lb (9.9 kg)	25.63 lb (11.63 kg)
<b>Discharge Time</b>		9.0 seconds	8.5 seconds	9.5 seconds	13.5 seconds
<b>Agent Flow Rate</b>		0.28 lb/sec (0.12 kg/sec)	0.61 lb/sec (0.28 kg/sec)	1.0 lb/sec (0.45 kg/sec)	0.98 lb/sec (0.45 kg/sec)
<b>Listings/Approvals</b>		UL/ULC	UL/ULC/FAA/USCG	UL/ULC/FAA/USCG	UL/ULC/FAA/USCG
<b>USCG Classification (Marine)</b>		—	Type B:C, Size I	Type B:C, Size I	Type B:C, Size I
<b>UL/ULC Rating</b>		2-B:C	5-B:C	1-A:10-B:C	2-A:10-B:C
<b>Effective Range</b>		8 ft to 10 ft (2.4 m to 3.1 m)	10 ft to 12 ft (3.1 m to 3.7 m)	14 ft to 16 ft (4.3 m to 4.9 m)	14 ft to 16 ft (4.3 m to 4.9 m)
<b>Dimensions</b>	<b>Height</b>	14 1/4 in. (362 mm)	16 3/4 in. (425 mm)	18 3/4 in. (476 mm)	22 1/2 in. (572 mm)
	<b>Width</b>	5 3/4 in. (146 mm)	8 1/2 in. (216 mm)	9 in. (229 mm)	9 1/2 in. (241 mm)
	<b>Depth</b>	3 3/8 in. (86 mm)	4 7/16 in. (113 mm)	7 in. (178 mm)	7 in. (178 mm)
<b>Fire Suppression Capability</b>	<b>UL Panel Class A</b>	N/A	N/A	8 ft x 8 ft (2.4 m x 2.4 m) Panel	10 ft x 10 ft (3.1 m x 3.1 m) Panel
	<b>Novice Operator* Class B</b>	2 ft <sup>2</sup> (0.19 m <sup>2</sup> )	5 ft <sup>2</sup> (0.47 m <sup>2</sup> )	10 ft <sup>2</sup> (0.93 m <sup>2</sup> )	10 ft <sup>2</sup> (0.93 m <sup>2</sup> )
	<b>Experienced Operator Class B</b>	5 ft <sup>2</sup> (0.47 m <sup>2</sup> )	12.5 ft <sup>2</sup> (1.2 m <sup>2</sup> )	25 ft <sup>2</sup> (2.3 m <sup>2</sup> )	25 ft <sup>2</sup> (2.3 m <sup>2</sup> )

\*Underwriters' Laboratories classifies a 'novice operator' as one who has little or no experience in operating a fire extinguisher.

Hydrostatic Test Requirement: Once every 12 years (All Models)

## Clean Agent Comparison

SUPPRESSING Agent	HFC-236fa	HALOTRON I	HALON 1211
Chemical Family	HFC	HCFC	BCFC
Acute Toxicity: Cardiotox LOAEL (Lowest Observable Adverse Effects Level) <i>A higher % is less toxic.</i>	15%	2%	1%
Acute Toxicity: Cardiotox NOAEL (No Observable Adverse Effects Level) <i>A higher % is less toxic.</i>	10%	1%	0.5%
Minimum volume of room for approved use (Per UL 1093 and 2129) <i>Volumes must be larger for more toxic agents.</i>	2-B:C 39 ft <sup>3</sup> (1.1 m <sup>3</sup> ) 5-B:C 73 ft <sup>3</sup> (2.1 m <sup>3</sup> ) 1-A:10-B:C 146 ft <sup>3</sup> (4.1 m <sup>3</sup> ) 2-A:10-B:C 204 ft <sup>3</sup> (5.8 m <sup>3</sup> )	350 ft <sup>3</sup> (9.9 m <sup>3</sup> ) 700 ft <sup>3</sup> (19.8 m <sup>3</sup> ) 1540 ft <sup>3</sup> (43.6 m <sup>3</sup> ) 2170 ft <sup>3</sup> (61.4 m <sup>3</sup> )	156 ft <sup>3</sup> (4.4 m <sup>3</sup> ) 312 ft <sup>3</sup> (8.8 m <sup>3</sup> ) 1125 ft <sup>3</sup> (31.9 m <sup>3</sup> ) 1725 ft <sup>3</sup> (49.6 m <sup>3</sup> )
Hazardous Material Identification System (HMIS)	Health: 1 - Slight Flammability: 0 - Minimal Reactivity: 1 - Slight	1 - Slight 0 - Minimal 1 - Slight	2 - Moderate 0 - Minimal 0 - Minimal
Agent Quantity Required to Achieve Rating	2-B:C 2.5 lb (1.13 kg) 5-B:C 4.75 lb (2.2 kg) 1-A:10-B:C 9.5 lb (4.3 kg) 2-A:10-B:C 13.25 lb (6.0 kg) 2-A:40-B:C —	2.5 lb (1.13 kg) 5 lb (2.3 kg) 11 lb (5.0 kg) 15.5 lb (7.0 kg) —	1.25 lb (0.57 kg) 2.5 lb (1.1 kg) 9 lb (4.1 kg) — 13-14 lb (5.9-6.4 kg)
Extinguishing Concentration, Cup Burner, n-heptane	5.9%	6-7%	4-5%
Scheduled Raw Material Production Phase-Out per Montreal Protocol *	None	-99.5% by 2020	-100% by 1994
Ozone Depletion Potential – ODP (CFC-11 = 1.0)	0	0.014	4
Global Warming Potential – GWP	Moderate	Low	N/A
Atmospheric Lifetime	Moderate	Low	Low

\* Refers to primary component: HCFC-123.