





SHTG 227™ Extinguishing Agent

HFC-227ea · Total Flooding Clean Agent

SHTG 227™, identified in international standards as HFC-227ea, is the most widely used clean fire suppression agent for total flooding applications. With zero ozone depletion potential and full compliance with current environmental regulations, it disperses rapidly in the protected space, forming a homogeneous air and gas mixture that reaches even the most concealed flames. The agent is effective between 0 C and 50 C, and its low toxicity allows use in normally occupied areas.

A Proven Halon Alternative

- Zero ozone depletion potential
- Effective between 0 C and 50 C
- Rapid, homogeneous dispersion
- Extinguishing speed equal to Halon 1301
- Safe for occupied spaces up to 10.5% for 5 minutes
- UL Listed and FM Approved
- Fully recyclable at end of service life
- Compact systems, fewer cylinders required
- Compatible with 25, 42 and 50 Bar systems

Highest Quality

Every production batch of SHTG 227™ is analyzed to the requirements of UL Solutions and FM Approvals and shipped with full documentation verifying its chemical and physical characteristics.

Maximum Fire Damage Reduction

The first rule of firefighting is speed: the longer a fire burns, the greater the damage it causes. SHTG 227™ matches the extinguishing speed of Halon 1301, while systems using carbon dioxide or inert gases require up to ten times longer to discharge and extinguish.

Maximum Safety for the Environment

SHTG 227™ has no effect on the ozone layer. Because it is released only in the rare event of a fire, its contribution to global warming remains largely theoretical. The agent is recyclable, and its high efficiency allows smaller, lighter systems.

Maximum Cost and Benefit Ratio

A compact system requiring fewer cylinders lowers both installation and long-term maintenance costs, without compromising the reliability that made Halon-equivalent agents the historical standard for critical asset protection.

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PERSONNEL SAFETY AND EXPOSURE LIMITS

Due to its low toxicity, SHTG 227™ can be used to protect normally occupied areas. Maximum exposure times were determined using the EPA-approved, peer-reviewed PBPK model incorporated into NFPA 2001, which indicates that human exposure to an atmosphere containing up to 10.5% agent for up to 5 minutes is safe.

MAXIMUM PERMITTED HUMAN EXPOSURE TIME

Concentration (% v/v)	Concentration (ppm)	Max. Exposure Time (min)
9.0	90,000	5.00
9.5	95,000	5.00
10.0	100,000	5.00
10.5	105,000	5.00
11.0	110,000	1.13
11.5	115,000	0.60
12.0	120,000	0.49

Source: NFPA 2001, Table 4.3.2.4(c), based on the EPA-approved PBPK model.

Minimal Space and System Weight

Where space is a critical factor, SHTG 227™ offers a clear advantage: systems using carbon dioxide or other inert gases occupy up to four times more physical space and weight for equivalent protection.

Maximum System Design Flexibility

With physical properties very similar to Halon 1301, SHTG 227™ protects a wide range of hazards. Its boiling point of -16.4 C allows rapid dispersion even in cold environments and around obstacles.

APPROVALS, STANDARDS AND AGENT PROPERTIES

Certifications	UL Listed (UL 2166), FM Approved (FM 5600), US EPA SNAP Listed
Design standards	NFPA 2001, ISO 14520-1, EN 15004-1
Extinguishing agent	HFC-227ea, CAS 431-89-0 (1,1,1,2,3,3,3-Heptafluoropropane)
Ozone Depletion Potential	0
Global Warming Potential	2,900 (100-year ITH)
NOAEL	9.0% v/v; safe human exposure up to 10.5% for 5 minutes (PBPK model)
Physical properties	Boiling point -16.4 C, vapor pressure 457.7 kPa at 25 C, non-flammable
Operating temperature range	0 C to 50 C

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