

3M Science.
Applied to Life.™

3M™ Novec™ 1230 Fire Protection Fluid for flightline applications

Clean fire suppression.
Environmentally sustainable.
Simplified operations.



3M™ Novec™ 1230 Fire Protection Fluid for Flightline Applications

Designed to replace halons, Halotron® and dry chemicals – without compromising performance

3M™ Novec™ 1230 Fire Protection Fluid is a highly-effective clean extinguishing agent, designed to replace non-sustainable halons, HFCs and HCFCs. With zero ozone-depletion potential, a global warming potential of less than one and a short atmospheric lifetime, Novec 1230 fluid has an environmental profile that does not compromise its future availability. Designed to not damage aircraft, Novec 1230 fluid is non-corrosive, nonconductive and evaporates cleanly without leaving a residue – helping keep aircraft operational and returning them back to service faster. This means Novec 1230 fluid is also an ideal alternative to dry chemicals such as potassium bicarbonate, Purple K.

Designed with the future in mind

3M offers its unique Blue SkySM Warranty, stating that 3M warrants, for a period of 20 years after original installation and subject to noted requirements, that Novec 1230 fluid, installed in an approved fire suppression or extinguisher system, will not be restricted for use in fire protection due to its Ozone Depletion Potential (ODP) or Global Warming Potential (GWP), is neither targeted for phase-down by the Montreal Protocol nor subject to the European F-gas Regulation implementing the phase-down of production and import of HFCs into Europe and will not be affected by U.S. EPA SNAP regulations.

Designed for easy transport and storage

Unlike other clean extinguishing agents, Novec 1230 fluid is a liquid with a low vapor pressure at room temperature, which optimizes agent delivery to the seat of the fire, even in difficult conditions. Additionally, due to its liquid nature Novec 1230 fluid is not regulated for transportation and can even be shipped by air.

Setting a new standard

When discharged from an approved wheeled fire extinguisher, Novec 1230 fluid helps protect people and equipment from fire without damaging aircraft – and sets a new standard in environmental sustainability for wheeled unit fire extinguishers.

The science

	Clean Agents			Non Clean Agent
	Novec 1230	Halon 1211	Halotron® (HCFC Blend B) ² >96% HCFC 123, <4% CF ₄ , <4% Ar	Purple K Potassium bicarbonate
ODP – Ozone Depletion Potential (WMO – 1998)	0	3	0.019	N/A
GWP – Global Warming Potential ¹	<1	1750	341 79 HCFC 123 6630 CF ₄ 0 Ar	N/A
Atmospheric Lifetime – Years ¹	0.019	16	1.3 HCFC 123 50,000 CF ₄ 0 Ar	N/A
Phased out under Montreal Protocol	No	Yes	Yes, HCFC-123 is a Class II ODS	N/A
US phase out date	N/A	Phased Out	HCFC 123 Jan. 1, 2020	N/A
Cardiac Sensitization NOAEL/LOAEL %	10/>10 ³	0.5/1.0 ⁴	1.0/2.0 ⁴	N/A
Propellant	Nitrogen	Nitrogen	Argon and Perfluoromethane	Nitrogen or Dried Air per NFPA 10

¹ IPCC 5th Assessment Report, 100 yr integrated time horizon, CO₂=1

² UNEP 2010 Report of the Halons Technical Options Committee; 2010 Assessment Table 2-10, p26.

³ 2012 edition of NFPA 2001, Table 1.5.1.2.1(a)

⁴ Metchis, Karen, USEPA, "Regulation of Halon and Halon Substitutes", p21, Proceedings of Halon Options Technical Working Conference, Albuquerque, NM, 3-5 May, 1994

Designed to reduce your total cost of ownership

You don't need a crystal ball to predict whether a fire suppression system will remain cost effective over the course of its useful life. But you do need the facts. And the fact is, there are shut down, recharge and maintenance requirements that must be followed to keep wheeled units in top operating condition.

Each type of wheeled unit produced for the aviation market has its own unique inspection and maintenance requirements. Units designed for clean agents, such as 3M™ Novec™ 1230 Fire Protection Fluid, have simplified inspection and maintenance requirements compared to dry chemical wheeled units.

For example, dry chemical wheeled units must be blown down after use to keep their discharge hoses unobstructed. Failure to perform the blow down procedure can potentially clog the hose with tightly-packed powder, rendering the unit inoperative.

Because it is a liquid, Novec 1230 fluid cannot clog hoses. Consequently, there is no maintenance or cost associated with systems caking and packing.

Novec 1230 fluid is not corrosive and leaves no residue. Dry chemical, on the other hand, is corrosive and destructive to high-value electronics. This presents a risk of catastrophic loss to high-value assets in areas where dry chemical fire protection agents are used.

The loss of one aircraft resulting from misuse of a dry chemical extinguisher could far surpass any premium paid for an advanced, high-performance wheeled fire extinguisher system incorporating Novec 1230 fluid. That's why, when evaluating any fire suppression technology, it's important to assess its ability to reduce your long-term costs while minimizing risk to your high-value assets.

Wheeled units using Novec 1230 fluid are similar to conventional Halon 1211 units, making the transition to Novec 1230 fluid easier.

of secure.



3M™ Novec™ 1230 Fire Protection Fluid is an advanced clean agent fire suppression material, based on a proprietary chemistry from 3M. It was designed to address industry needs for clean agent fire protection that is safe and effective, while offering a sustainable environmental profile that no other halocarbon agent can match. This includes: Zero ozone depletion potential; a 5-day atmospheric lifetime, and; a Global Warming Potential of 1. Because of these properties, Novec 1230 fluid is not targeted for phase-down or regulatory restrictions anywhere in the world. It is approved for use in total flooding fire suppression systems by the U.S. EPA and most major regulatory bodies. All of this makes Novec 1230 fluid today's sustainable choice for clean agent fire protection.

The 3M™ Novec™ Brand Family

The Novec brand is the hallmark for a variety of proprietary 3M products. Although each has its own unique formula and performance properties, all Novec products are designed in common to address the need for safe, effective, sustainable solutions in industry-specific applications. These include precision and electronics cleaning, heat transfer, fire protection, protective coatings, immersion cooling, advanced insulation media replacement solutions and several specialty chemical applications.

3M™ Novec™ Engineered Fluids • 3M™ Novec™ Aerosol Cleaners • 3M™ Novec™ 1230 Fire Protection Fluid • 3M™ Novec™ Electronic Grade Coatings • 3M™ Novec™ Electronic Surfactants • 3M™ Novec™ Dielectric Fluids

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