

# Protecting assets today with the future in mind.

## 3M™ Novec™ 1230 Fire Protection Fluid vs. FM-200®

### FM-200® following the path of halon.

If you are looking for ways to protect your valuable electronic assets and operations, you have already made the smart decision to avoid relying on water for fire protection. Selecting a clean extinguishing agent offers the best opportunity to minimize risk to a business and its critical assets.

However, all clean agents are not the same. For example, HFC-227ea, sold under the FM-200® brand, is a hydrofluorocarbon (HFC) clean agent – which is a potent greenhouse gas. Due to their high global warming potentials (GWP), time is running out for HFCs, including FM-200.

The regulatory path taken by halon provides insight into the future for HFCs. In the past couple years there have been increasing efforts on a global basis to reduce the use of HFCs, including the European Union's implementation of an HFC phase-down under the F-gas Regulation and the U.S.

EPA's advancement of regulations in an effort to reduce use of HFCs. In fact, in December 2015 a collective group of 197 countries at the 27th Meeting of the Parties to the Montreal Protocol committed to act in 2016 to put HFCs on a global phase-down schedule similar to the path taken by halon.

### Unfazed by the HFC phasedown

What do these regulations mean to users of fire suppression systems? For example, in the event of an FM-200 system discharge, facility owners will face the uncertainty and risk of the future supply and costs of FM-200 to continue to protect their valued assets.

Thankfully there are system options that do not use HFCs. With 3M™ Novec™ 1230 Fire Protection Fluid, owners can avoid the uncertainty associated with HFCs like FM-200 and halons. Novec 1230 fluid is NOT an HFC. Novec 1230 fluid is a sustainable clean agent – enabling a transition from HFCs such as FM-200 and halon to a more environmentally sound solution without compromising

performance. In its approval of Novec 1230 fluid, the U.S. EPA noted that Novec 1230 fluid “is *acceptable because it reduces overall risk to public health and the environment in the end use listed.*” In fact, 3M is so confident that Novec 1230 fluid will continue to meet environmental standards far into the future that 3M backs Novec 1230 fluid with 20-year protection: the 3M™ Blue Sky™ Warranty.

Novec 1230 fluid revolutionized the clean agent market in 2001 and now sets a new standard for sustainable clean agent fire suppression. Its unique dielectric properties and low vapor pressure yields design advantages to satisfy your top priority – protecting your assets. These advantages include ease of handling and the flexibility for higher pressure system innovation that is not practical for halons and HFCs. Specifying Novec 1230 fluid leverages these advances in fire suppression to protect your operations while eliminating future risks associated with HFCs such as FM-200.

# 3M™ Novec™ 1230 Fire Protection Fluid vs. FM-200®

## Typical Environmental Properties (Not for specification purposes)

Properties	3M™ Novec™ 1230 Fire Protection Fluid	Chemours FM-200® (HFC-227ea)
Fire Performance vs. Health and Extinguishment Safety (NOAEL)	<b>Class A, B &amp; C<sup>3</sup></b> Class A: 4.5% - NOAEL 10%   Safety Margin 122% Class B: 5.9% - NOAEL 10%   Safety Margin 70% Class C: 4.5% - NOAEL 10%   Safety Margin 122%	<b>Class A, B &amp; C<sup>3</sup></b> Class A: 6.7% - NOAEL 9%   Safety Margin 34% Class B: 8.7% - NOAEL 9%   Safety Margin 3% Class C: 7.0% - NOAEL 9%   Safety Margin 29%
ODP - Ozone Depletion Potential <sup>1</sup>	0	0
GWP - Global Warming Potential <sup>2</sup>	<1	3,350
Atmospheric Lifetime – Years	0.019	38.9
Global Environmental Warranty on Agent (Years)	Yes 3M™ Blue Sky™ Warranty (20 Years)	None
Subject to Phase-Down under EU F-Gas Regulation	No	Yes
Subject to U.S. Proposals for Global Phase-Down under Montreal Protocol	No	Yes
Subject to Potential U.S. EPA SNAP Status Change Proposals Directed at HFCs	No	Yes
Manufacturer Advocating for Global HFC Phase-Down	Yes	Yes

<sup>1</sup> World Meteorological Organization (WMO) 1998, Model-Derived Method

<sup>2</sup> Intergovernmental Panel on Climate Change (IPCC) 2013 Method, 100-year ITH

<sup>3</sup> NFPA 2001

## 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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