

A stylized graphic of a flame, with blue and white wavy lines on the left transitioning into orange and yellow wavy lines on the right, suggesting fire.

**3M**

**Novec™ 1230**

**Fire Protection Fluid**  
**For Oil and Gas Applications**

Created for life.

## Advanced fire protection technology – for all the valuable assets in your care

3M™ Novec™ 1230 Fire Protection Fluid is an advanced, “next generation” clean agent halon replacement, suitable for use in a wide range of offshore and land-based oil and gas operations to protect occupied spaces and critical equipment.

Based on a patented chemistry from 3M, Novec 1230 fluid offers a number of important advantages over conventional clean agents such as HFCs and CO<sub>2</sub>. Its low acute toxicity, combined with high extinguishing efficiency, gives Novec 1230 fluid the widest margin of safety of any other halocarbon agent, CO<sub>2</sub> or inert gas mixture, even at relatively high extinguishing concentrations. This makes Novec 1230 fluid ideal for normally and occasionally occupied spaces, where personnel may be exposed to the agent upon system discharge.

Novec 1230 fluid is non-corrosive, non conductive and evaporates rapidly, so it will not damage high value assets such as delicate electronics, controls and navigational equipment. It vaporizes greater than fifty times faster than water. And unlike competitive foams and powders it does not leave messy residues to clean up, allowing systems to remain operational.

### Created for Life

Perhaps most important, Novec 1230 fluid helps address the global demand for a halon replacement that has a high margin of safety, is effective and is not subject to regulatory restrictions or phaseout. Novec 1230 fluid has zero ozone depletion potential, a short atmospheric lifetime of 5 days and a global warming potential of 1 – about the same as naturally-occurring carbon dioxide, making it exempt from restrictions on so-called “greenhouse gases” imposed by the Kyoto Protocol. It is proving to be the first halocarbon halon replacement to offer a viable, long-term sustainable technology for special hazards fire protection in the oil and gas industry.

### 3M™ Novec™ 1230 Fire Protection Fluid

***The right choice for offshore,  
marine and land-based special  
hazards fire protection***

- Zero Ozone Depletion Potential
- Global Warming Potential of 1
- Not restricted by the Kyoto Protocol
- High safety margin vs. other extinguishing agents
- Fast extinguishment
- Saves space and weight
- No restrictions on shipping by air, sea or truck
- Local refill possible



## Typical Applications

In addition to its favorable safety and environmental profiles, 3M™ Novec™ 1230 Fire Protection Fluid is a highly-effective fire extinguishant, designed to knock down fires quickly, before they have a chance to disrupt production or spread to Class B hazards. This unique combination of properties has caused Novec 1230 fluid to gain increased acceptance in offshore drilling, production, storage and transportation vessels – both for new builds and refurbishments. It is an ideal choice for many “special hazards” applications where personal safety and maintaining continuity of operations are of vital concern, including:

- **Engine rooms**
- **Generator rooms**
- **SCR – e lectrical control rooms**
- **Inventory rooms**
- **Paint rooms**
- **Propulsion systems & thrusters in pontoons**
- **Pilot houses**
- **All diving systems rooms**
- **Pump rooms**
- **Workshops and storage areas**

## Simplified Storage and Handling

Because it is a liquid at room temperature, and stored at low vapor pressure, agent handling and charging of systems using Novec 1230 fluid is greatly simplified, and can be accomplished without removing the cylinders offsite. This can be an especially important consideration for servicing offshore facilities – saving you time, and ensuring uninterrupted protection of your assets. The liquid state of Novec 1230 fluid also allows for efficient use of space, requiring about the same number of cylinders as conventional halocarbon agents. The product can be shipped safely by air in bulk quantities, without regulations or restrictions.



## Regulatory Status

3M™ Novec™ 1230 Fire Protection Fluid is approved for use in commercial and industrial total flooding systems by the U.S. EPA and most major regulatory bodies around the world. The product complies with chemical notification requirements in the following regions:

✓ United States

✓ Canada

✓ Australia

✓ China

✓ Europe

✓ Korea

✓ Japan

In addition, fire protection systems incorporating Novec 1230 fluid, developed and sold by the world's leading systems manufacturers, have been registered and certified by a growing number of marine approval authorities.

## 3M™ Novec™ 1230 Fire Protection Fluid Environmental Properties

Properties	Novec 1230 fluid	HFC-125	HFC-227ea	HFC-23
Atmospheric Lifetime (years)	0.014	29	33	260
Ozone Depletion Potential <sup>1</sup>	0	0	0	0
Global Warming Potential <sup>2</sup> (100 yr. ITH)	1	3400	3500	12000

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

<sup>2</sup> Intergovernmental Panel on Climate Change. (IPCC) 2001 Method, 100 Year ITH, CO<sub>2</sub>= 1.

## 3M™ Novec™ 1230 Fire Protection Fluid Safety Margin – Class B Hazards

Agent	Use Conc.	NOAEL <sup>1</sup>	Safety Margin
Novec 1230 fluid	4–6%	10% <sup>2</sup>	67–150%
HFC-125	8.7–12.1% <sup>3</sup>	7.5%	—
HFC-227 ea	7.5–8.7%	9%	3–20%
Inert Gas	38–40%	43%	7–13%
CO <sub>2</sub>	30–75%	<5%	lethal@design conc.

<sup>1</sup> NOAEL for cardiac sensitization (halocarbons) and effects specific to CO<sub>2</sub>.

<sup>2</sup> NOAEL for acute toxicity, including cardiac sensitization.

<sup>3</sup> Based on heptane cup burner.

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