

3M

Novec™

Brand

Fire suppression systems.

**The total cost
of ownership.**



A best practice guide

3M Science. Applied to Life.™

Focus on the bigger picture.

Selecting the right fire suppression system requires careful consideration. No single solution exists and unit cost is only one factor among many. While each project should be assessed on its own merits there are some common factors worth considering to ensure effectiveness and value.

A realistic checklist would include system reach, storage, safety, compliance with regulations and how best to protect your assets. Unless you consider all of these elements, you won't see the real cost of your solution.

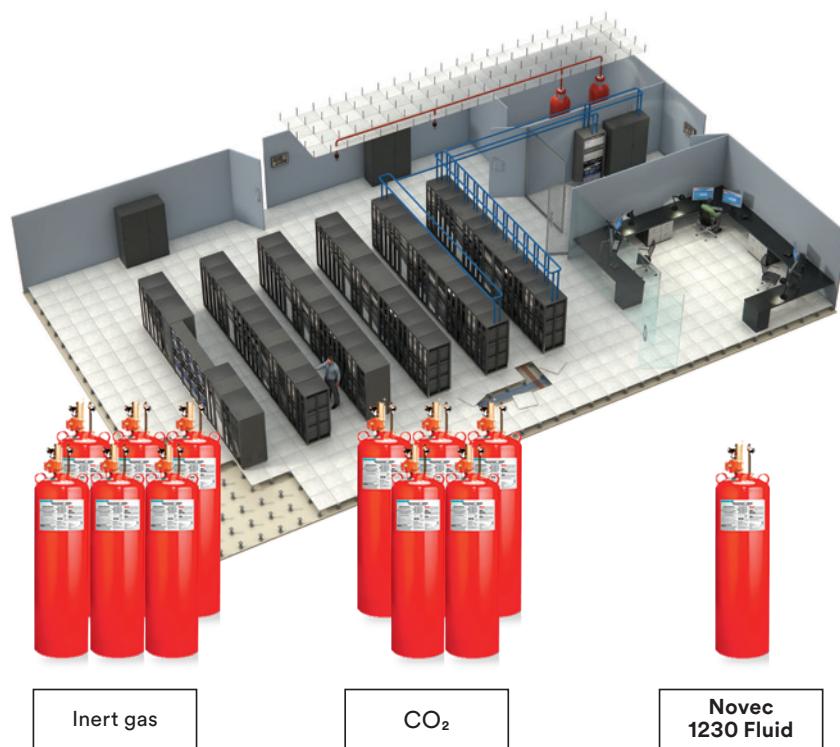
What, where and how

Think about your project's needs – they may differ from job to job. How many rooms need protection? What reach is required? Is a single system enough? Will you store the system in the protected area or in a dedicated space? Once you start considering the associated costs of site and application you may start thinking differently about your solution.

Don't waste space

Consider how much space you'll require and whether the flooring may need reinforcement. An inert system will require 'over pressure' exhaust systems and vents, and potentially a reserve system to cover delays in recharging the system. All these extras require more space and add to costs. 3M™ Novec™ 1230 Fire Protection Fluid is stored as a liquid rather than a gas, and fire suppression systems using Novec 1230 fluid typically require 80% less space compared to an inert gas system. This can lead to valuable real estate savings over the lifetime of the system.

Required cylinders for a typical Higher Hazard Class A extinguishing system (200 m³)



Less downtime

Business outage in a data centre has been estimated to cost \$11k a minute.¹ Consider water damage, long clean-up times, the potential loss of revenue, assets or both and what they would mean for your business. 3M™ Novec™ 1230 Fire Protection Fluid is designed to extinguish a fire even before it reaches 'flame' stage, minimising clean-up and downtime.

Maintenance

Periodic maintenance and pressure checks are essential for any fire extinguishing system to ensure it remains 'fit for purpose'. The greater the number of cylinders and the larger the system footprint, the more time and costs rise. Proposed maintenance contracts of a system should be evaluated as part of the upfront system cost. A system incorporating Novec 1230 fluid can be refilled in-situ in emergency situations, and offers a clear advantage for ensuring continuity of service and keeping maintenance costs down.

Peace of mind

Sustainability and regulations are a high priority, but not all clean agent systems are equal. 3M developed Novec 1230 fluid with sustainability in mind. As hydrofluorocarbons (HFCs) with high Global Warming Potentials are being phased down on a global basis, and on an even faster pace in Europe, 3M offers a global environmental warranty. The 3M™ Blue Sky™ Warranty is the industry's first-of-its-kind global environmental warranty. If 3M™ Novec™ 1230 Fire Protection Fluid is banned from or restricted in use as a fire protection agent within 20 years after installation due to its Ozone Depletion Potential (ODP) or Global Warming Potential (GWP), we'll refund the purchase price of the fluid (backed by a system warranty offered by specific OEM partners).

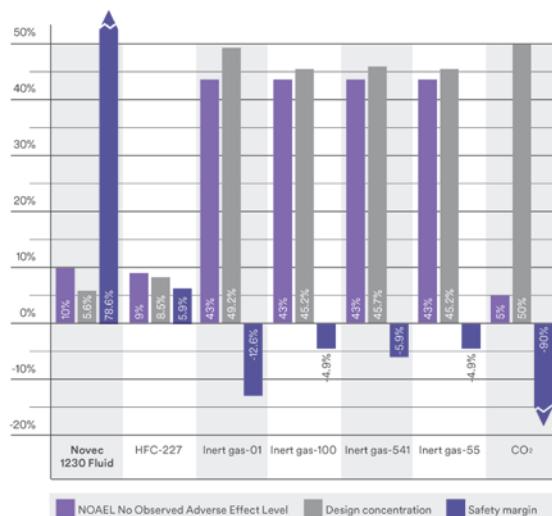
Safety

Fire extinguishing agents are not equal in the safety they provide for occupants. Reviewing the permitted limit for humans and the design concentration gives the best guide to an agent's safety margin. The NOAEL (No Observed Adverse Effect Level) is the internationally established limit for the various extinguishing agents. The design concentration is the amount of extinguishing agent required to extinguish the fire safely. The margin of safety for humans arises from the relative difference between the design concentration and the specific NOAEL.

As the chart shows, Novec 1230 fluid offers, by far, the highest human safety margin.

Novec 1230 fluid provides widest safety margin for use in occupied spaces

Based in EN 15004 Higher Hazard Class A, and NFPA 12 for CO₂



Weighing up the alternatives.

Whether you're looking to replace a halon fire protection system, find a HFC replacement, install an environmentally sustainable system or increase the margin of safety for your workers, consider the following:

HFCs

The high global warming potential (GWP) and long atmospheric lifetime of hydrofluorocarbons (HFCs) can cause significant environmental impact. As a result, HFCs are being phased out, leading many to a search for an alternative. 3M™ Novec™ 1230 Fire Protection Fluid offers high performance combined with low GWP, and is globally recognised as a sustainable alternative to HFCs.

Inert gas

Inert gas fire suppression systems can be expensive to install and maintain, take up more space, have a very limited safety margin for people, and require more high pressure canisters (300 bar) which need to be shipped, handled and installed. Novec 1230 fluid can be air shipped and provides a higher margin of worker safety.

Water and water mist

Water in any form can cause significant damage and data loss especially for electronics, electrical systems, control rooms and archives. Extensive clean-up and recovery make it challenging to maintain critical operations. Help reduce these extra costs with Novec 1230 fluid – a fast and dry extinguishing method, designed to reduce clean up and down-time.

Carbon dioxide

Fire protection should address the safety of both people and property. Using carbon dioxide (CO₂) based systems can compromise worker safety and incur extra costs for testing, training, inspection, maintenance, and space requirements. Novec 1230 fluid is CO₂ free.

Summary

Purchasing and running a fire suppression system isn't just about the initial investment cost. Safety, effectiveness, space, storage and maintenance all combine to represent the true cost of ownership. A long term investment deserves a considered, long term solution – weigh up the true costs before choosing your solution.

¹ Cost of Data Centre Outages' (2016), Ponemon Institute, quoted by www.itracs.com

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 speciality chemical applications.

3M™ Novec™ Engineered Fluids | 3M™ Novec™ Aerosol Cleaners | 3M™ Novec™ 1230 Fire Protection Fluid | 3M™ Novec™ Electronic Grade Coatings | 3M™ Novec™ | 3M™ Novec™ Insulating Gases

Safety data sheet: Consult safety data sheet (SDS) before use.

Regulatory: For regulatory information about this product, contact your 3M representative.

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