

# NOVEC 1230

## Gaseous Fire Suppression Solution



## Focused Fire Protection

NOVEC 1230 is the next generation of chemical fire suppressant in place of FM200 which was a market leader for the exchange of Halon 1301. These systems are designed to extinguish fires involving flammable liquids, gases and electrical equipment therefore protecting hazards particularly in applications where high margins of safety and long term sustainability are considered important.

NOVEC 1230 is a colourless and low odour fluid with a density around 11 times greater than air. Systems are designed to hold the NOVEC 1230 in the form of a liquid and nitrogen which is used to super-pressurise the container to 24.8 bar (360 psi) at 20°C. When the system is activated the contents flow into the distribution pipework to the discharge nozzle(s) where it is rapidly dispersed as a vapour (less than 10 seconds). During the discharge the enclosure will be fogged which may reduce visibility. This normally clears rapidly and should not obstruct the ability of personnel to safely exit the protected area. Like most other chemical agents, it rapidly extinguishes through a combination of heat absorption (its main action) and some chemical interference with the flame. It does not significantly deplete the oxygen content in the room and tests have shown it to be less toxic than Halon 1301.

### // Environmental Features

NOVEC 1230 contains no bromine or chlorine and therefore has an ozone depleting potential of zero. The atmospheric lifetime of NOVEC 1230 fluid is estimated to be in the range of 3-5 days and with a global warming potential of 1, it is considered that NOVEC 1230 fluid has no measureable impact on climate change. These attributes ensure that NOVEC 1230 fluid represents a truly sustainable technology.

### // Safety

NOVEC 1230 decomposes at temperatures in excess of 500°C and it is therefore important to avoid applications involving hazards where continuously hot surfaces are involved. Upon exposure to the flame, NOVEC 1230 will decompose to form halogen acids. Their presence will be readily detected by a sharp, pungent odour before maximum exposure levels are reached. It has been concluded from fire toxicity studies that decomposition products from the fire itself especially carbon monoxide, smoke, oxygen depletion and heat may create a greater hazard.

### // Design

The systems are individually designed and appropriate sized storage cylinders chosen according to the hydraulics and quantity of agent required. The components are designed and tested to operate in the temperature range 0°C to 50°C. It is always preferred to store the cylinders out with the enclosure being protected but in some circumstances the certifying authority may agree otherwise with additional precautions.

Each container assembly comprises of a container, valve, siphon tube, safety fittings and container nameplate. NOVEC container assemblies are available in a range of sizes from 8ltr through to 180ltr. Containers are painted signal red to identify them as fire protection equipment.

The valve is designed for high discharge rates to allow the full container contents to be released within ten seconds.

It operates on the pressure differential principle and is constructed with a brass body and stainless steel piston. It is designed to be operated by means of a solenoid actuator, manual actuator or pneumatic actuator. The operation of any of the actuators depresses a Schrader valve which relieves pressure above the pressure differential piston which then opens fully by means of the pressure within the container. The valve is fitted as standard with a pressure gauge and a safety burst disc.

The container design details are stamped on the foot ring of each container to comply with the Pressure Systems Regulations.

### // Room Integrity Testing

The successful performance of a gaseous total flooding system is largely dependent on the integrity of the protected enclosure. It is essential that a room integrity test is performed on any protected enclosure to establish the total equivalent leakage area and enable a prediction to be made of the enclosure's ability to retain NOVEC. The required retention time will depend on the particulars of the hazard, but MSC/Circ.848 states that this should not be less than 15 minutes. Longer retention times may sometimes be necessary if enclosures contain hazards that may readily become deep seated.

For further information on NOVEC 1230 or any other fire extinguishing system email [tfis.marketing.uk@tycoint.com](mailto:tfis.marketing.uk@tycoint.com) or visit the website [www.tycofis.com](http://www.tycofis.com).