



# Sapphire™

## Fire Suppression Technology

### Features

- Sapphire Systems are custom engineered for Novec 1230
- Zero ozone depletion potential
- Global warming potential of one
- Clear, colourless, low-odour agent
- Simple to refill
- Discharges within 10 seconds
- Solenoid, mechanical and pneumatic activation
- Pressure monitoring as standard

### Applications

- Telecommunications sites
- Computer centres
- Museums and archives
- Oil and gas industry sites
- Power generation installations
- Civil and military marine
- Civil and military aviation
- Rail and mass transit

Tyco Sapphire™ Systems, using 3M™ Novec™ 1230 Fire Protection Fluid, are fast emerging as the next - generation solution to all those applications once considered perfect for Halon. Whatever is most precious to you, whether it's the people around you, your business or the very planet you live on, Sapphire Systems are built to deliver.

Times are changing and ozone-depleting substances are no longer acceptable and many are keen to meet their environmental obligations by selecting fire protection systems with minimal environmental impact.

Today's need is for a fast-extinguishing, sustainable clean agent-free of any ozone depletion potential and with the lowest possible emissions of "greenhouse gases" - that can be used in occupied spaces. Novec 1230 fluid, delivered by Sapphire fixed systems from Tyco, meets this demanding profile, precisely. It complies with all statutory requirements, both current and anticipated.

Crucially, Sapphire Fire Protection Systems are designed specifically for Novec 1230, the efficacy of which has been demonstrated by independently witnessed fire tests. It is listed as "acceptable without restrictions" by the US Environmental Protection Agency's Significant New Alternatives Program (SNAP) and is registered under Europe's ELINCS Scheme. The sapphire system has been approved by LPCB, UL and FM, and accepted for inclusion in ISO 14520, Compare its properties with those of Halon - see chart opposite - and you will appreciate why Sapphire Fire Protection Systems, delivering Novec 1230 fluid, provide the best long-term solution to protect what really matters to you.

*a vital part of your world*

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Fire & Integrated  
Solutions

## SPECIFICATIONS

### Fast acting Protection

Tyco Sapphire Systems using Novec 1230 fluid are designed to work fast, rapidly absorbing heat at the point that combustion ceases. Once actuated, Tyco Sapphire systems deliver the extinguishant within 10 seconds, stopping ordinary combustible, electrical and flammable liquid fires before they have a chance to spread. When fire is extinguished this quickly, the result is less damage, lower repair costs and reduced downtime.

### Neighbourly Protection

Almost everything we do has some impact on the environment, from switching on the air conditioning to starting the car. But Sapphire systems are different as the agent contains neither bromine nor chlorine and has ozone depletion potential. With a global warming potential of just one and an atmospheric lifetime of between three and five days, this agent has virtually no measurable impact or climate change.

### Playing Safe

Toxicity testing shows Novec 1230 fluid to be safe for use in occupied areas. Studies conducted in independent laboratories demonstrated that the agent is very low in both acute and chronic toxicity, and because its design concentration is much lower than the No Observable Adverse Effect Level (NOAEL) - this makes Novec 1230 fluid the safest alternatives to Halon currently available.

Typical applications span computer centres, telecommunications installations, oil and gas exploration sites and military vehicles as well as trains boats and planes, both commercial and military.

### System recharging

Filling and recharging Sapphire Systems is straight forward as the agents high boiling point (49 degrees C) means it can be transported in lightweight drums rather than pressurised containers, air-freighting is an option for unpressurised containers.

### Low Pressure Technology

Tyco sapphire systems operated at 25 Bar and have been proven to achieve homogeneous distribution at this pressure resulting in the achievement of internationally recognised approvals. A wide range of cylinders are available and the operating pressure endures that expensive seamless cylinders are not required.

Properties	Sapphire/Novec 1230	DuPoint FE25	Halon 1301
Ozone depletion potential (ODP)	0.0	0.0	12.0
Global warming potential	1	2800	6900
Atmospheric lifetime (Years)	0.014	33	65
SNAP	Yes	Yes	No

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