

Novec 1230 fire protection fluid chosen as 'safest solution' for HDC34 data centre in France

In August 2015, HDC34, the new data centre in Saint-Aunes near Montpellier (France) opened its doors. The founder, Luc Vidal, has used his credentials in the IT cabling and data centre industry to create his own data centre, specialising in data storage for small and medium size companies local to Montpellier.

Today, the data centre, built in partnership with IBM® and Prosodie™, can accommodate 30 racks within the 100m² IT room, representing 3.5 kW per rack. Luc Vidal forecasts to double this capacity with a 2nd IT room.

Safety was a critical consideration in the design of the data centre. In addition to the electrical supply, the cooling system and the physical security of the premises (access control, CCTV), fire protection has also been a priority.

Following consultation with several companies, Luc Vidal selected Novec 1230 fire protection fluid as the clean agent in the automatic extinguishing system combined with a very early detection system.

Novec 1230 fluid is stored as a liquid in the cylinders and pressurised with nitrogen. The total flooding takes place in <10 seconds. "We studied three solutions: water mist, inert gas and Novec 1230 fluid" explains Luc Vidal. Water mist was initially eliminated, due to its cost. With the costs of the remaining solutions being comparable, several arguments helped him choose Novec 1230 fluid:

- Human safety: The extinguishing concentration of Novec 1230 fluid (5.3% of the room volume) is lower than the No Observed Adverse Effect Level (10%). Therefore the fluid presents a safety margin of 88% versus 7% for inert gas. "If an operator remains in the room for longer than the

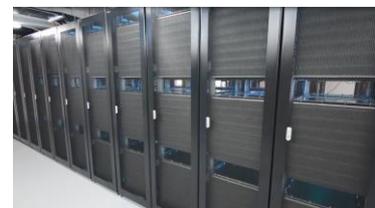
timeout delay of 30 seconds, the air remains safe" explains Julie Boizot, 3M application engineer and Novec 1230 fluid 'expert'.

- Protection of equipment: Non-conductive, the fluid does not corrode or damage electronic equipment. It evaporates cleanly without residue. Luc Vidal decided to combine the fluid with Siemens Sinorix™ silent nozzles, to reduce the noise level to around 90 decibels when discharged.
- Space saving, with very few modifications to install the system: Inert gas extinguishes fires by decreasing the level of oxygen and so is introduced in large quantities in the room (40.3% of room volume). In comparison, Novec 1230 fluid extinguishes by removing heat with only 5.3% of fluid in the room. For Luc Vidal, that meant 6 cylinders of Novec 1230 fluid to store (instead of 18 cylinders for inert gas), and only one vent to absorb the overpressure.

In addition, Novec 1230 fluid does not deplete stratospheric ozone and, compared to halons and hydrofluorocarbons (HFCs), reduces the global warming impact of a fire suppression system by greater than 99%.

As a result, the Novec 1230 fluid is exempt from the EU F-gas regulation that phases down HFCs, including those used in fire protection. "We implemented a 20 year 3M™ Blue Sky™ warranty" says Julie Boizot. "If the Novec 1230 fluid becomes affected by this, or any GWP (Global Warming Potential) or ODP (Ozone Depleting Potential) regulation, 3M will refund the cost of the Novec fluid".

For Luc Vidal, the cost of the detection and extinguishing systems represent about 8% of the technical investments of his data centre.



This is based on an article originally written by Gaëlle Carcaly and published in Face au Risque n° 518 publication www.faceaurisque.com

3M™ Novec™ 1230 Fire Protection Fluid is an advanced clean agent fire suppression material, based on a proprietary chemistry from 3M. It was designed to address industry needs for clean agent fire protection that is safe and effective, while offering a sustainable environmental profile that no other halocarbon agent can match. This includes: Zero ozone depletion potential; a 5-day atmospheric lifetime, and a Global Warming Potential of 1. Because of these properties, Novec 1230 fluid is not targeted for phase-down or regulatory restrictions anywhere in the world. It is approved for use in total flooding fire suppression systems by the U.S. EPA and most major regulatory bodies. All of this makes Novec 1230 fluid today's sustainable choice for clean agent fire protection.

The 3M™ Novec™ Brand Family

3M™ Novec™ Engineered Fluids are designed to balance performance with favourable environmental and worker safety properties. They are available for a wide variety of applications, including heat transfer, cleaning, testing, and lubricant deposition. Novec fluids offer excellent dielectric properties; wide range of boiling points; good materials compatibility; low toxicity and non-flammability; low global warming potential; and zero ozone depletion potential.

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™ Insulating Gases

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