

# FEATURE ARTICLE

(SEATRADE)

## **SAPPHIRE® - THE DEFINITIVE SHIPBOARD FIREFIGHTING SOLUTION**

Since its introduction by Tyco Safety Products Fire Suppression Group, SAPPHIRE® has been widely adopted as the fire suppression system of choice for protecting marine engine rooms and compartments. It has been installed successfully in hundreds of ships, and has amassed a host of international maritime approvals. Indeed, its most recent accolade was winning the prestigious Seatrade Awards 2007 Safety at Sea Award, sponsored by Lloyd's Register.

SAPPHIRE utilises 3M™ Novec™ 1230 stored in containers as a low vapour pressure fluid that, when discharged, transmutes into a colourless and odourless gas. Unlike other fluid extinguishing agents, it can be used with complete confidence to suppress fires involving electronic equipment. Typical total flooding applications use between 4.6 percent and 6.9 percent by volume of the fluid, well below the agent's saturation or condensation level. When discharged, the agent is dispersed through natural ventilation, leaving no residue to damage sensitive equipment; it is also non-conductive and non-corrosive.

Installations have a footprint similar to that of chemically-based clean agent systems and the Novec 1230 fluid has the lowest level of design concentration and the highest safety margin of any viable Halon 1301 or chemical alternative. While certain HFCs [hydrofluorocarbons] and inert

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gases are used at design concentrations that are below the NOAEL [No Observed Adverse Effect Level] with safety margins from seven percent, no other Halon alternative comes anywhere close to the SAPPHIRE safety margin.

This is important because a fire on a ship frequently involves diesel oil, rather than the Class A combustibles that are common in land-based fires, which require higher suppressant concentration levels. As the volume of the space on a ship is often difficult to calculate accurately – due to the complexity of the machinery – the installation’s designer will often err on the side of caution and include more agent than the volume requires. Additionally, the calculation is based on the minimum anticipated temperature in the protected space, whereas the reality is that the temperature will be higher, which will lead to a further “over concentration”. This combination of factors has the potential for more agent to be provided than the volume truly requires, taking the achieved concentration close to, or above, the agent’s NOAEL level.

SAPPHIRE also has several major environmental advantages over many other suppression agents. It has an insignificant global warming potential that means that 11,900 kilograms of the Novec fluid would have to be released to have the same impact on climate change as just one kilogramme of a typical alternative HFC. It has zero ozone depleting potential and a remarkably low atmospheric lifetime of just five days.

SAPPHIRE is approved by MCA; Germanischer Lloyd; DNV; BV; ABS; RINA; LRS; Icelandic Maritime Administration; MED and Marchant Marine. It is also accepted by NSI; BZI and DMA; and complies with SOLAS, having successfully completed MSC 848 testing. Further

information on SAPPHIRE is available from Tyco by telephone on +44 (0) 1493 417600, by fax on +44 (0) 1493 417700, or via email at [tspmarketing.emea@tycoint.com](mailto:tspmarketing.emea@tycoint.com).

## **END**

### **EDITOR'S NOTES**

*1. Maritime approvals: MCA (Maritime & Coastguard Agency); DNV (Det Norske Veritas); BV (Bureau Veritas); ABS (American Bureau of Shipping); RINA (Registro Italiano Navale); LRS (Lloyds Register of Shipping); MED (Marine Equipment Directive); NSI (National Security Inspectorate); BZI (Belgium Maritime Authority); DMA (Danish Maritime Authority); SOLAS (Safety of Life At Sea); MSC (Maritime Safety Committee).*

*2. To download Tyco Safety Products Fire Suppression Group's latest press releases or photographs or to select any of the brands' EMEA press releases from the NewsManagers (Ansul, FLN, Hygood, Macron, Sabo Foam, Skum, TOTAL, and Total Walther) please visit the Magna Communications International NewsDesk website at <http://newsdesk.magna-communications.com/>*

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