**FEATURES**
- UL/ULC Listed
- Effective Total Flooding on Class A, B, and C Fires
- Clean Agent Suitable for Protection of High-Value Assets
- Long-Term, Sustainable Alternative To Halon, HFCs and PFCs

**APPLICATION**
The SAPPHIRE® Pre-Engineered System utilizes 3M™ NOVEC™ 1230 Fire Protection Fluid as the suppression agent. NOVEC 1230 fluid can effectively be applied in total flooding fire suppression applications in the following areas:
- Data Processing Centers
- Tape Storage
- Vaults
- All normally occupied or unoccupied electronic areas where equipment is either very sensitive or irreplaceable
- Telecommunications including Cellular sites and Switching Centers
- Military Systems including Combat Vehicles and Marine Engine Rooms
- Transportation including Merchant Marine Vessels and Mass Transit Vehicles
- Recreation including Pleasure Craft and Race Cars

**ENVIRONMENTAL IMPACT**
The SAPPHIRE Clean Agent Fire Suppression System utilizes 3M™ NOVEC™ 1230 Fire Protection Fluid. This fluid has 0.0 ozone depletion potential, an atmospheric lifetime of just five days, and a global warming potential of 1.0. NOVEC 1230 fluid is registered with the U.S. EPA under TSCA and European ELINCS. It has met the requirements of registration under SNAP (Significant New Alternatives Policy) and is approved for use as an alternative to Halon 1301 for total flooding applications in occupied spaces.

**DESCRIPTION**
The ANSUL SAPPHIRE Pre-Engineered System is an automatic, fixed nozzle, fire suppression system using 3M™ NOVEC™ 1230 Fire Protection Fluid for Class A, B, and C fires.

The system is designed and installed in accordance with the National Fire Protection Association (NFPA) Standard 2001, “Clean Agent Fire Extinguishing Systems.” It is listed by Underwriters Laboratories, Inc. (UL) and Underwriters of Canada (ULC).
3M™ NOVEC™ 1230 Fire Protection Fluid – NOVEC™ 1230 fluid, referenced as FK-5-1-12 in NFPA 2001 and ISO 14250, is a fluorinated ketone (or fluoroketone) with a chemical structure of CF₃CF₂C(O)CF(CF₃)₂. It is a clear, colorless, odorless, liquid that is super-pressurized with nitrogen and stored in high-pressure tanks as part of the total SAPPHIRE system. Although stored in liquid form, NOVEC 1230 fluid will turn to a gas upon discharge, making it an effective total flooding agent for a variety of hazards. As a clean agent, it leaves no residue behind and will not affect sensitive high-value electronics. Refer to Extinguishing Agent Data Sheet Form No. F-2003127 for more detailed information.

Tank Assembly – The agent storage tanks are manufactured in accordance with DOT4BW450 and consist of a tank fitted with a valve and internal siphon tube. Tanks are available in two sizes: 40 lb. and 80 lb. (18 kg and 36 kg). A nameplate is adhered to the tank displaying the agent weight, and gross weight. Agent quantities are available in 1 lb. fill increments.

Electric Actuator – The 24 VDC electric actuator is required to electrically actuate the tank valve. An electric signal is received from the AUTOPULSE Control Panel which operates the solenoid in the actuator. This causes the actuator to open the tank valve and discharge the agent. On multiple tank systems, only one electric actuator is required, on the master tank valve. The remaining tanks will be actuated pneumatically through 1/4 in. stainless steel hose installed between each pilot pressure port.

Pneumatic Actuator – The pneumatic actuator is required to pneumatically actuate the agent tanks. The actuator operates from the pressure from the nitrogen cartridge located in the ANSUL AUTOMAN II-C release. When the pneumatic actuator is pressurized, the internal actuator piston pushes down on the valve stem, opening the tank valve, allowing the agent to discharge.

AUTOPULSE Control System – The AUTOPULSE Control system is designed to monitor fixed fire hazards. The control system can automatically actuate the fire suppression system after receiving an input signal from one or more initiating devices, i.e., manual pull station or detector. The control system incorporates an internal power supply, in-line emergency batteries, and solid state electronics.

ANSUL AUTOMAN II-C Releasing Device – The ANSUL AUTOMAN II-C releasing Device consists of a metal enclosure which contains a spring-loaded puncture pin release mechanism, an actuation cartridge, electrical circuitry, and on input/output terminal strip for making electrical connections. The ANSUL AUTOMAN II-C releasing device provides automatic pneumatic actuation of the SAPPHIRE System. When wire to an AUTOPULSE Control System, it will provide supervised electric detection and release. It also provides manual actuation using the strike button on the release enclosure.

Nozzles – Two sizes of discharge nozzles are available: 1 1/4 in. thread size to be used on the 80 lb. (36 kg) tank distribution piping and a 1 in. thread size to be used on the 40 lb. (18 kg) tank distribution piping. Nozzles are designed to discharge agent in a 360° pattern.


Availability and Cost

Availability – SAPPHIRE Pre-Engineered Clean Agent Fire Suppression Systems are sold and serviced through a network of independent distributors located in most states and many foreign countries.

Cost – Cost varies with type of system specified, size, and design.

For information on the proper design and installation, contact a local authorized SAPPHIRE System distributor. The ANSUL applications engineering department is also available to answer design and installation questions. Call 800-TO-ANSUL (862-6785).