



### **WHAT IS A Stat-X AEROSOL GENERATOR?**

An aerosol generator is a self contained extinguishing unit that contains an aerosol forming compound which, during a controlled combustion process within the generator, produces an ultra-fine aerosol extinguishing agent that is significantly more effective than currently available alternatives. The units are constructed of stainless steel components, are listed for both area and volumetric coverage, and require no piping, nozzles, or other distribution equipment. In effect, the generator acts as its own storage, production and delivery device.

### **ARE THE AEROSOL GENERATORS RE-CHARGEABLE AFTER DISCHARGE?**

No. The units are designed for single use only. After discharge turn around time is minimized as re-connection of a new generator is quickly and easily accomplished.

### **HOW DOES IT WORK?**

A highly stable solid charge of the aerosol forming composition is contained within the sealed generator. Upon activation of the initiator, the charge begins a controlled burn producing an ultra-fine aerosol, which is ten times as effective as any agent currently on the market. The effective aerosol passes through a series of oxidation and cooling filters, where the temperature of the aerosol is rapidly reduced before it escapes through the discharge ports of the generator at low pressure. Generator placement within the hazard area provides proper flow and distribution of the highly effective aerosol within the protected volume.

### **DOES IT REDUCE THE OXYGEN LEVEL?**

No, oxygen levels are not affected.

### **HOW DOES IT EXTINGUISH FIRES?**

Unlike other agents that work by reducing oxygen levels or by cooling, the aerosol extinguishes by chemical interaction with the free radicals that fuel the growth of the fire – in the same manner as halon did. The aerosol stream contains ultra-fine (1-2 micron) particles of potassium compounds that provide a large surface area interaction with the fire. In the fire zone the free potassium radicals bind with the free radicals of the fire (O, OH, H) to rapidly slow and extinguish the fire.

### **HOW EFFECTIVE IS IT?**

Stat-X is extremely effective. Tests on class B fires have shown it to be 5 times more effective than halon and 10+ times more effective than other currently available halon alternatives. This dramatically reduces weight and space requirements.

### **WHERE CAN IT BE USED?**

Stat-X is an aerosol and shares many of the flow characteristics of a gas. It is suitable for use in un-occupied and normally un-occupied enclosed volumes and has the added advantages of extended hold times and less susceptibility to leakage. In addition, Unlike HFC's, which can break down and produce deleterious compounds such as hydrofluoric acid when exposed to elevated temperatures, Stat-X does not break down when exposed to a fire.

### **IS IT SAFE FOR THE ENVIRONMENT?**

Yes. **stat-x** has no global warming potential and no ozone depletion potential.

### **IS IT APPROVED BY THE EPA?**

Yes. **stat-x** has been approved for sale and use in un-occupied and normally un-occupied spaces by the United States Environmental Protection Agency.

### **IS IT SAFE FOR SENSITIVE EQUIPMENT?**

**Stat-X** aerosol has been tested on a wide range of materials including structural, aviation composites, and materials commonly used in electronics, and circuit boards. In all cases it has been shown that **Stat-X** has no deleterious effect on the operating capability of equipment.

Due to the ultra-fine particle size and the method of generation, the particulate is quite buoyant and suspends in the gas/air mixture within the protected enclosure. Because of this "buoyant" effect the aerosol does not begin to "settle" for an extended period and, therefore, is extremely easy to vent from the protected area. Only very minor amounts of particulate may be deposited on equipment and, generally, there is no need to do anything beyond extraction of the air within the protected volume through a fan or air handling system – followed by a blow down with compressed air. Any particulate deposited on horizontal surfaces will be  $\leq 2\mu\text{m}$  and will not form a continuous layer. Large gaps will exist between particles - leaving no potential for electrical conductivity issues to develop.

As a precautionary measure, however, it is always good practice to inspect and clean the site thoroughly following a discharge. While the aerosol itself is quite "clean", environmental factors are also a consideration. The unknown, and potentially harmful, by-products of an actual fire pose the biggest risk to sensitive electronic equipment. Because unknown products from the fire itself may be present, it is always recommended that equipment be blown down with air or vacuumed following a discharge to insure that no unwanted by-products from the fire itself are present.

### **IS IT SAFE FOR PERSONNEL?**

The aerosol, itself, consists of solid and gas combustion products. The solid phase is composed of highly dispersed particles that present insignificant health hazards for humans at normal design concentrations. The gas phase may contain very small amounts of carbon monoxide CO, carbon dioxide CO<sub>2</sub>, nitrogen oxides NO<sub>x</sub>, and ammonia NH<sub>3</sub>. Production of these gases is minimal in the case of **stat-x** due to its patented construction, chemical formulation, and its manufacture in the United States using only technical and reagent grade chemicals. In tests conducted by a certified, accredited testing facility in the United States, **stat-x** generators were shown to produce gas levels several orders of magnitude less than the standard allowed for automobile airbag systems for passenger vehicles.

While the components of the aerosol are not considered toxic at normal concentration levels, ingestion of the ultra-fine particulate may cause short-term discomfort and unnecessary exposure should be avoided. Exposure to the aerosol is generally of less concern than is exposure to the decomposition products of a fire. Accidental exposures under ten minutes are normally considered safe. There is a high obscuration factor with the aerosol and a 30 second time delay and system lock out switch should be used whenever personnel may be present in the protected space.

### **IS IT A CLEAN AGENT?**

The term "clean agent" has traditionally referred to gases. The term itself is inaccurate as all agents may pose post discharge issues. The **stat-x** aerosol does contain ultra-fine suspended particulate which is very buoyant and hangs in suspension for extended periods. Because of this, settling is minimal and removal of the aerosol can be accomplished easily by venting. While the aerosol itself is quite "clean", environmental factors are also a consideration. The unknown, and potentially harmful, by-products of an actual fire pose the biggest risk to sensitive equipment. Because unknown products from the fire itself may be present or because of unwanted environmental conditions, it is always recommended that the area is thoroughly cleaned to insure that no unwanted products are present. For example, on site maintenance and housekeeping may have been lax allowing accumulation of dirt in the enclosure. During discharge, any dirt within the enclosure will be blown around and then deposited as unwanted residue throughout the area.

Also, in rare cases, unit orientation may have been altered improperly or equipment may have been re-oriented within the protected enclosure resulting in an improper discharge directly onto a wall or equipment surface. This could result in the deposit of small, localized areas of highly concentrated agglomerated particulate on that surface. If left untended, an agglomerated mass may take on moisture and may cause non-progressive surface discoloration (copper, bronze) of unprotected metal surfaces. It is therefore, important that any agglomerated particulate be cleaned up with a water/alcohol solution no later than 24 hours following a discharge.

### **HOW IS A SYSTEM DESIGNED?**

**stat-x** are designed by trained, certified, and authorized distributors using a computer aided design program that uses data on dimensions, areas of leakage and location of un-closeable openings, fire class, and other factors to arrive at a system tailored to the clients specific requirements. The design methods of calculation are part of our listing.

### **WHAT ARE THE SPACE REQUIREMENTS?**

The generators are small, self-contained, and mounted at ceiling height. They do not take up valuable floor space as conventional systems do.

### **IS A **stat-x** SYSTEM EXPENSIVE?**

No. **stat-x** systems are extremely cost effective. While actual costs will vary based on the size of the enclosure, leakage, and class of hazard, in general, an installed system will be significantly less expensive than alternatives. This is due to the small amount of agent required and the fact that installation costs are dramatically reduced because of the elimination of distribution manifolds, piping, and nozzles. **stat-x** thermal units, where appropriate further reduce costs due to the elimination of detection and releasing devices.

### **WHAT IS THE SERVICE LIFE?**

The service life of **stat-x** generators is 10 years+.

### **WHAT IS A **stat-x** THERMAL UNIT?**

**stat-x** thermal units are suitable for small enclosed spaces such as electronic enclosure, hazmat storage, switchgear cabinets, etc. The units are self contained and utilize a patented thermal detector that is integral to the generator – eliminating the need for ancillary detection and releasing devices. Units are available in several temperature settings to insure applicability to the hazard being protected.

## WHAT ARE TYPICAL APPLICATIONS?

- Telecommunications Facilities
- Process Control Rooms
- Marine Engine Rooms
- High Value Mobile Equipment
- High Value Industrial Equipment Areas
- Flammable Liquid Storage Areas
- Data Processing Facilities
- Mining
- Power Plants
- CNC machines

## WHAT ABOUT MAINTENANCE COSTS?

Maintenance costs related to the generators themselves are minimal and involve only periodic visual examination of the generators and protected space to insure that the generators have not been damaged and that the system installation and space remains in the same configuration as that originally designed. Electrically activated systems require a regular check of the detection and control system, including all ancillary devices.

## IS THERE AN NFPA STANDARD FOR AEROSOL EXTINGUISHING SYSTEMS?

Yes. The aerosol extinguishing systems are covered by NFPA 2010 Standard on Aerosol Fire-Extinguishing Systems, 2006 Edition.

## DOES **stat-x** HAVE ANY LISTING OR APPROVALS?

Yes. **stat-x** is the only condensed aerosol currently listed by Underwriter's Laboratories (UL). It is also listed/approved by Underwriter's Laboratories of Canada (ULC), the Maritime and Coast Guard Agency (MCA) in UK, CSIRO/ActivFire in Australia, American Bureau of Shipping (ABS), European Control Board (ECB), and many more. In addition, it has been approved for sale by the local AHJ in many areas of the world including Asia, the Pacific Rim, the Middle East, South and Central America, Europe, the United States, and Canada. Other listings around the world are currently in process and will be completed shortly.

## HAVE **stat-x** SYSTEMS PUT OUT FIRES IN THE REAL WORLD?

Yes. We have had a number of very successful incidents particularly with CNC machines where a relatively small investment in a **stat-x** system has saved high value (\$250K - \$500k) equipment with very minimal downtime. We have also saved high value mining equipment and **stat-x** is installed on several thousand military vehicles serving in Afghanistan where reliable fire protection is mission critical.

