# First Responder®

User's Manual


PERIPHERAL MANUFACTURING, INC.

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**USA**

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## INTRODUCTION

Thank you for your purchase of ***Stat-X*** First Responder® 500 units. This manual is designed to provide you with a general understanding of the product, as well as, general information on its use.

## DESCRIPTION

### General

The First Responder 500 is a new and innovative tool designed to aid in the suppression of fires in confined spaces and for use as a personal protection device for fire fighters in emergency egress or entrance situations. It is physically and functionally similar to a smoke grenade with the major difference that it delivers a highly effective aerosol fire suppression agent - *Stat-X*..

### Size

The units are 1.1 kg (2.5 lbs), 8.1 cm in diameter (3-3/16$^{th}$inches), and 17.75 cm high (7 inches).

### Fire Suppression Agent

The aerosol produced upon activation of the First Responder suppresses fire by a combination of chemical and physical mechanisms similar to Halon 1301 without any negative effect on the environment. Because of the aerosol's ultra-fine particle size (□2 micron) there is a dramatic increase in the surface area interaction between the agent and the fire. Potassium based aerosol has been shown in numerous tests and scientific studies to be five times as effective as Halon 1301 and more than ten times as effective as any currently available Halon alternatives or Carbon Dioxide.

Unlike gaseous agents the aerosol does not decompose in the presence of fire nor does it extinguish by oxygen deprivation. The aerosol is considered non-toxic to humans when applied in concentrations necessary to suppress most fires; however, certain safety restrictions should be observed when applying and handling the units. Exposure to the aerosol should be limited and unnecessary exposure to the particulate without a filter mask or SCBA should be avoided. Exposure to the aerosol is of much less concern than is exposure to the decomposition products of a fire.

**Toxicity:** Tests conducted by the Institute of Biophysics (Department of Public Health and Medicine Russian Federation) as well as others have shown that the aerosol does not present a health hazard due to limited accidental exposure at normal design concentrations.

For a victim in a fire, the aerosol will be the least of their problems. While the aerosol may cause minor mucous membrane irritation at high concentrations (over 100g/m3) or if there is long exposure, the combustion products and heat of a fire can be, and often are, deadly. In a real world fire scenario the by-products and composition of the aerosol are insignificant relative to those of a fire. At a 100g/m3 density the gas products of the aerosol are many orders of magnitude less than that allowed for automobile airbag systems. However, the First Responder should not be thrown close to the victim as it emits a hot cloud of aerosol close to the unit. 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. Tests have shown no long-term negative effects from exposure to the aerosol. In addition the aerosol has a high obscuration factor.

***Stat-X*** is approved by the US EPA.

### Typical Application Scenarios

The First Responder is designed, first and foremost as a fire suppression unit. It is not a fire extinguisher. The *Stat-X* compound is the most effective fire extinguishing agent currently available – many times more effective than conventional agents by mass. The *Stat-X* First Responder contains the same compound used in our ULC listed fixed fire extinguishing units. However, due to the tremendous variability of conditions in a firefighting situation, the purpose of the First Responder is, first and foremost, for use as an extremely effective tool to suppress and limit the growth of fires and to provide significant knockdown and temperature reduction until other traditional methods are available to put out the fire - any extinguishment is a bonus.

Typical application scenarios include:

- Emergency Entrance or Exit
- To Help Delay or Stall Flashover
- Shipboard Fires in Enclosed Spaces
- Shipping Container Fires
- Attic Fires
- Cellar Fires
- Vehicle Fires

First Responders are **not suitable** for the following conditions; or, where the following materials may be present:

- Outdoors or volumes with significant openings.
- High wind conditions
- Use on Metal Hydrides, Pyrophoric substances, and Chemical substances that smolder and burn without air
- Use on Metal powders (magnesium, titanium, etc.)
- Use in Explosive Atmospheres

## OPERATION

**General.** A solid charge of the aerosol generating composition is contained within the First Responder. Upon activation by removing the safety clip and pulling the Ringpin, the charge begins a controlled burn after a five-second delay - producing an ultra-fine aerosol, which is ten times as effective as any agent currently on the market. The aerosol passes through a cooling bed where the temperature of the aerosol is reduced before it escapes through the radial discharge ports at low pressure. The radial alignment of the ports allows the First Responder to remain located properly during discharge and insures effective distribution of the suppression agent throughout the area.

### WARNING

**THE FIRST RESPONDER CONTAINS A PYROTECHNIC ELEMENT AND MUST ONLY BE HANDLED AND USED BY TRAINED PROFESSIONAL PERSONNEL USING THE INSTRUCTIONS CONTAINED IN THIS SECTION. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD CAUSE A PREMATURE DISCHARGE AND POTENTIAL INJURY**

**Operating Procedures. (See Illustrations Page 4)**

Operate as follows:

1. Grasp the First Responder firmly.
2. Remove Safety Clip.
3. Pull the Ring-pin firmly. This will activate the First Responder and start a 5-second time delay.
4. **Immediately** toss the First Responder near the fire.
5. **Do not toss near any victims that may be incapacitated in the area!**
6. If possible close the door or bulkhead. This will enhance performance of the suppression agent by keeping it contained within the volume.
7. Monitor the fire and apply additional First Responders at intervals, as necessary, to keep the fire at bay until conventional means can be applied to extinguish the fire.
8. To avoid unwanted inhalation of fire by-products and aerosol, a protective breathing apparatus or mask should be worn if it is necessary to enter prior to complete ventilation of the hazard volume.
9. Inspect the area to insure the fire is completely extinguished and that there are no localized hot spots or other sources of re-ignition present.
10. Remove spent First Responder(s), being sure to wear gloves or other hand protection. The units will remain quite warm to the touch for a time after actuation.
11. Dispose of spent First Responders according to applicable federal, state, and local regulations
12. Contact your *Stat-X* distributor immediately for replacement First Responders.

**WARNING**

**Do not enter a hazard area with an open flame or Lighted cigarette. The possible presence of flammable vapors may cause re-ignition or explosion. Ensure fire is completely extinguished before ventilating. Ventilate thoroughly before permitting anyone to enter the hazard area, or use self-contained breathing apparatus**

**Other Safety Considerations:** The aerosol discharged into the hazard area upon activation is relatively "cool". However, the aerosol stream is above 200□C for a very short distance from the outlets. The housing is approximately 100°C immediately after discharge and care should be taken if handling the units post-discharge.

**Storage:** Each *Stat-X* First Responder is sealed and is unaffected by fluctuations in temperature and humidity. The charge is viable for more than 10 years under conditions ranging from - 20°C to + 45°C and cycled relative humidity levels up to 98%.

**Operating/Temperature Range:** Peripheral Manufacturing, Inc. *Stat-X* First Responders are tested to Mil-Standard 331 to Operate within a temperature range of - 20 °C to +45 °C.

**Service Life**

Replacement from Service. The aerosol generators have an instal ed service life of 10+ years. They are to be replaced 10 years from the date code in the lower right corner of the product label.

**Recycling after Discharge**

In most cases the First Responder can be disposed of in any landfill that handles industrial waste. However, local regulations must be researched and observed. Each discharged First Responder will contain the following material:

1. Steel outer shell, spacer ring, cross spacers
2. Activated Alumina: CAS 1333-84-2 (Aluminum Oxide non-fibrous) < 200g.
3. Ceramic Paper < 15g
4. Trace Chemicals: $K2^{CO}3$ (water-soluble particulate "trapped" in unit during discharge).

Contact Peripheral Manufacturing, Inc. if there are any questions relative to the above.

**LIMITED WARRANTY STATEMENT**

**Peripheral Manufacturing, Inc. represents that this product is free from defects in material and workmanship, and it will repair or replace any product or part thereof which proves to be defective in workmanship or material for a period of twelve (12) months from the date of first shipment from our factory. Defective units should be returned shipment prepaid to the factory:**

**Peripheral Manufacturing, Inc.**
**4775 Paris Street, Ste. A**
**Denver, CO 80239**

**Peripheral Manufacturing, Inc. will repair or replace and return shipping prepaid. Return or repair shall be the purchaser's sole remedy for defect.**

**Limitations of Liability**

**This warranty does not cover equipment damaged during shipment or by misuse, accident, or negligence, or which has been repaired or altered by others. Peripheral Manufacturing, Inc. shall not under any circumstances be liable for special or consequential damages such as, but not limited to, damage or loss of property or equipment, loss of profits or revenue, cost of capital, cost of purchased or replacement goods, or claims by customers of the original purchaser. Remedies set forth herein to the original purchaser and all others shall not exceed the price of the equipment supplied. This warranty is exclusively and expressly in lieu of all other warranties, whether expressed or implied, including warranty of merchantability or fitness. Questions concerning the information presented in this manual may be addressed to your authorized distributor or:**

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