



Middleburg Heights Fire Department Standard Operating Guideline

Subject: Haz Mat Ops

SOG#:

Category: Hazardous Materials

Approved:

Initiated:

Revised:

Purpose

To identify the roles and responsibilities of The Middleburg Heights Fire Department when working with hazardous materials.

Scope

This SOG applies to all members of the Middleburg Heights Fire Department

Guideline

When operating with hazardous materials, it is important to understand the following five basic functions of the fire department's roles as a first responder to these types of incidents:

- a. **Recognizing** a haz mat incident has occurred
 - Use clues such as dispatch info, vehicle type, occupancy and container shapes
- b. **Identification** of the material if possible
 - Employees, shipping papers, placards, etc. should be used to identify the material. At no point should a firefighter enter the hot zone in order to identify the material spilled
 - What type or classification of hazard is present? Is it toxic, flammable, corrosive, explosive, radioactive...etc
 - Remember the mnemonic "4H MEDIC ANNA", as those are the only gases lighter than air. Most gases are heavier than air.
- c. **Isolation** of the material or people in harms way
 - Decide if people can be sheltered in place or require evacuation. Protect the environment if possible by damming and diking of streams, sewer and storm grates, etc.
 - We have isolation equipment, i.e. Pigs™ and other pads, in the basement, which may need to be brought to the scene by other firefighters who may have been recalled, or brought along prior to responding in anticipation of use.
 - There is a limited amount of haz mat supplies/equipment in the upper coffin container of Engine 2522, that is limited to garden hose and garden hose adapters. There are also a couple of level B suits and a civil defense CD V-777-1 radiation kit.
- d. **Notification** of SERT Haz Mat will be done through Strongsville dispatch
- e. **Initiate ICS** in order to facilitate operations at what may possibly be an extended event

3. If a life safety hazard exists, immediate and appropriate actions must be taken to protect endangered civilians without the assistance of SERT Haz Mat. No firefighters life shall be placed in harms way to protect property when dealing with hazardous materials. The actions taken to protect life safety should be made only after measures have been taken to classify the unknown materials. For example, toxic, corrosive, oxidizer, etc. It is essential that a risk based response be utilized to determine the course of actions taken.

Fire Department Operations

1. After recognition and identification has been made, preliminary zones should be identified, including hot, warm, and cold zones. Use any resources you have available to make those decisions, such as the orange DOT book and the NIOSH guide, which are located in most of our vehicles.
 2. Every attempt should be made to position vehicles uphill and upwind.
 3. A notification decision on the level of response from SERT Haz Mat needs to be made. There are two choices:
 1. **Limited call out** – a minimum of 6 haz mat technicians along with SERT Haz Mat 1
 2. **All Call** – All available SERT Haz Mat team technicians along with Haz Mat 1 and Haz Mat 16.
 3. The number to call will be 440-580-3230, which is the city of Strongsville's public safety dispatch number.
 4. Identify a staging area for responding Haz Mat team personnel
- ❖ The OIC will use his best judgment in deciding what level of response to request. Simple hydrocarbon fuel spills from saddle tanks, sheens of chemicals visible on bodies of water, are only some examples of limited call outs. If you are unsure, you may request assistance from Strongsville dispatch. Utilization of MHFD Haz Mat technicians may be of assistance in determining the level of response.

As much information about the incident should be conveyed to the dispatcher at SFD. Include as much of the following items as possible:

- Name of material involved.
- 4 digit UN/NA number.
- Estimated quantity of spill
- Type of release (explosion, leaking valve, broken bag, etc.).
- Color of vapor or material.
- Whether fuming or not.

- How it is reacting with surrounding material.
- Any other information that may be pertinent.

4. SERT Haz Mat requests that an ALS squad be dedicated to Haz Mat team personnel. A separate ALS squad may be needed for members of the public.

5. Decontamination is a responsibility of the 'host city'. At minimum, two (2) firefighters should be assigned to decontamination. Depending on the level of response from SERT, SERT technicians may be able to fill that role.

Some notes about Decon:

- Firefighters should be comfortable in level B suits, although it may be determined that structural firefighting gear would be adequate. SERT Haz mat will assist in the decision to choose the appropriate level of PPE.
- Engine 2522 needs to secure a water supply. Water is usually the choice for decon.
- Decon is located in the warm zone

6. Due to the length and complexity of hazardous materials incidents, implementation of NIMS may be required to handle incident scene management. For example, if evacuation of an area is required, a separate officer may need to be designated for that position, along with a safety officer, logistics, etc.

7. The hazardous materials team serves as a branch of command. The OIC of the incident will still have ultimate authority and will use SERT haz mat as a reference for decision making.

8. Entry into a hazardous or potentially hazardous area for metering purposes, chemical identification, etc., shall not be done without use of full PPE and SCBA.

9. Clean-Up and Disposal

- The primary responsibility for the assumption of all costs for the clean-up and disposal of a chemical shall be:
 - 1.The person or persons whose negligent or willful act caused such spill or release.
 - 2.The person or persons who own or had custody of the chemical or hazardous materials or waste at the time of the spill or release.
 - 3.The person or persons who owned or had custody or control of the container or transport vehicle that held such chemical or hazardous material or waste.

- The incident commander and Hazmat Control Officer (HCO) shall work together to identify the responsible party. When, in the opinion of the HCO, the substance must be cleaned up according to OSHA and EPA regulations, the responsible party or a representative of his agency must call a reputable and licensed hazardous waste hauler.
- It shall not be the responsibility of the haz mat team to remove any hazardous material. SERT Haz Mat shall remain on scene until arrival of the appropriate and approved agency. The HCO shall oversee the clean-up operation in an advisory capacity to insure that removal of product and containers are done so correctly and safely.

General Meter Considerations

1. Many of the previously mentioned tasks can be best performed with the use of meters. Establishing hazards zones, or simply identifying if a hazard exists can be accomplished using meters. It is strongly recommended that, if possible, pH paper be used when entering an unknown atmosphere in order to protect the meters from damage. Corrosive readings obtained on the pH paper would indicate immediate withdrawal from the area, unless a life safety hazard exists.

2. When turning on the meters for use, do not do a fresh air setup inside a vehicle or in the hazard area. Perform fresh air setups outside the hazard in a clean air environment.

3. Operators of meters should take a reading just outside the affected area and immediately upon entry into the affected area. If readings are safe or within acceptable limits, further entry is then permitted.

4. The following ranges shall be used as action level guidelines when reading the LEL on the combustible gas indicator:

- 0-10 % of the LEL – continue monitoring the atmosphere
- 10-25 % of the LEL – allowable range for life safety actions
- > 25 % - a possible explosion hazard exists. The OIC should use their best judgment in order to determine if life safety maneuvers can be continued

5. The following ranges should be used as action level guidelines when reading the oxygen readings on the combustible gas indicator:

- < 19.5 % - Use SCBA
- 19.5 – 25 % - Continue monitoring with caution
- > 25 % - Discontinue monitoring and evacuate area

Current meters at our disposal:

Altair 4 Multigas Meter

- Generally used to detect flammable and or combustible atmospheres.
- Can only detect gasses for which a sensor has been installed
- Otherwise, the meter cannot identify toxic hazards, only flammable and combustible.
- Meter operators should meter each room/area for at least 60 seconds prior to moving to the next room or area.

Sensit Natural Gas Detector

- Only capable of detecting methane
- Should always be used in conjunction with the Altair 4 or other applicable four gas meter

CD V-777-1 Radiological Kit

- Used to detect beta and gamma sources of radiation. Will not detect alpha particles.
- Hot zone should be anything greater than 2 mr/hr
- The kit contains 2 meters, the CD V-700, for low dose measurement and the CD v-715 for high doses.

Specific Hazard Classification Considerations


Hydrocarbon (Fuel) Spills

- The reportable quantities for spills or releases involving a petroleum product (diesel fuel, gasoline, hydraulic fluid, etc.) are:
 - Any amount of petroleum that causes a film or sheen on a waterway.
 - Any spill or release to the environment (not contained on the spiller's property) of 25 gallons or more.

Radiological Incidents

- When dealing with a radiological incident, there are some important key points to remember:

- Time, distance, and shielding provide the best protection against harmful radiation
- The outside of the hot zone should be established at 2 mr/hr
- If an immediate life safety hazard, the following maximum exposures to radiation should be considered:
 - save property – 5 REM
 - save valuable property – 10 REM
 - save a life – 25 REM
 - voluntary, greater than 25-50 REM
 - Do not enter at levels greater than 50 REM

 It is strongly recommended that all firefighters have a yearly haz mat refresher in order to review the basic fundamentals of haz mat response.