

## DRY CHEMICAL TYPE FIRE EXTINGUISHERS

### 1. GENERAL

1.01 This section describes a multi-purpose dry chemical fire extinguisher for use on Class A, B or C fires, i.e. those involving general trash material such as wood, paper etc., flammable liquids, such as gasoline, oil, naptha, etc., and electrical equipment.

1.02 The dry chemical extinguisher is quite effective on tire and gasoline fires. For this reason it should be used primarily in garages. It can also be used in Paint Storage areas, Tire Storage rooms, Heater Rooms and Kitchens. The advantage of the Dry Chemical over the Carbon Dioxide extinguisher is its ability to prevent the re-ignition of a fire. This characteristic is not present in the Carbon Dioxide extinguisher.

1.03 This extinguisher should not be used in or near telephone equipment areas. It is almost impossible to remove all traces of the chemical after use, without actually washing down the area. Also the fine chemical could be carried by air currents to every nook and cranny in an equipment room, thus possibly disablping telephone relays and electrical contacts.

1.04 This extinguisher could replace the Foam Type unit, since it is a bit more effective and is easier to re-charge and is also not subject to freezing.

1.05 The Dry Chemical unit is available, as a portable unit, in several weights and sizes, starting with approximately 5 pounds to 30 pounds. Wheeled Dry Chemical units are generally available from 75 to 350 pounds. The fire extinguishing agent is usually a very finely divided chemical composed of ammonium phosphate with added chemicals to provide for free-flowing capabilities and having water repellent properties. There are several manufacturers that market a small 2-1/2 or 3 pound Dry Chemical extinguisher that does not carry a class "A" rating. This is only because they have an insuf-

ficient effectiveness to earn a 1-A rating even though they have some value in extinguishing small class "A" fires.

1.06 On occasion a class "D" fire will be reported. This fire requires a special chemical for extinguishment because of the relatively high heat generated by the burning metal. There are several dry chemicals available to extinguish metal fires, but to date only a chemical identified as MET-L-X, can be applied to the burning metal with a standard type fire extinguisher. Basically the chemical is sodium chloride with additives to render it free flowing and cause heat caking. A 30 pound extinguisher is the smallest hand model available, only through the Ansul Company, in Marinette, Wisconsin.

### 2. DESCRIPTION

#### 2.01 *Underwriters Laboratories and Factory Mutual Listings*

Each extinguisher shall bear the approval of the Underwriters Laboratories and/or Factory Mutual. The extinguisher (average 10 pound unit) consists of a steel cylinder which may vary in size from 16" to 21-1/2" long and from 5" to 8-1/2" wide, depending on the outboard hardware. Some units are pressurized by an external gas cartridge when a lever is depressed, thus puncturing the cartridge which allows the gas to flow into the cylinder placing the dry chemical under approximately 175 psi. This chemical is released when another lever at the end of the hose is depressed, permitting the dry chemical to be aimed at the fire. Releasing this lever stops the flow of the chemical. Other units are pressurized with either dry air or dry nitrogen and are operated by simply pulling the safety pin and then squeezing the hand grips and aiming the hose at the fire. Releasing these grips stops the operation of the extinguisher. The chemical should shoot from the nozzle to a distance of not less than 12 feet. Underwriters Laboratories requires no less than 85% of the chemical be discharged, by weight, at 70°F.

**2.02 Rating**

For an extinguisher to be used in the Bell System, the unit should have a minimum rating of 1A-10BC. This is not to say that a smaller unit is not effective in a small home type fire. It should be remembered that if a small fire is checked in time, a conflagration can be avoided.

**3. OPERATION**

**3.01** In all cases, aim the stream of dry chemical at the base of the fire. Approach as close as safety will permit and play the stream slowly from side to side closing in until the fire is extinguished. If the fire has burned to a vertical position, start the chemical stream at the bottom of the column and work up the fire making sure the bottom fire is out before proceeding upwards. When the fire is extinguished, release the hand lever. This will shut off the flow of chemical, thus preventing the dry chemical from unnecessarily contaminating the area. As is the case with all fire extinguishers, once the unit has been used, do not return it to its normal building location. Set it aside for immediate recharging.

**4. LOCATION**

**4.01** Dry Chemical fire extinguishers are not subject to freezing so its location in an unheated area is immaterial.

**4.02** Extinguishers should not be located where they are subject to mechanical injury from moving objects.

**5. MOUNTING**

**5.01** The extinguisher should be mounted so that the bottom of the extinguisher shall be not less than 18 inches from the floor, or the top of the unit not more than 60 inches from the floor. A hanging loop should be an integral part or an extension of the valve assembly. It should properly engage in the center peg of the Bell System 30A Fire Extinguisher Bracket.

**6. MAINTENANCE AND INSPECTION**

**6.01 A. For Cartridge Dry Chemical Extinguisher**

1. Remove extinguisher from wall mounting.
2. Remove cartridge guard.
3. Unscrew cartridge and inspect seal to see that it has not been punctured. (Cartridge may have left hand threads)
4. Weigh Cartridge. If weight is 1/2 ounce less than weight stamped on cartridge, replace with new cartridge.
5. Operate the puncture lever several times to insure free movement.
6. Check gasket in cartridge receiver to see that it is in good condition.
7. Remove hose from elbow and blow through hose to insure a clear passage.
8. Replace hose and make sure the hose is screwed on tight.
9. Remove fill cap. Make sure that the dry chemical is in proper condition and the chamber filled to the proper level.
10. Examine fill cap threads and gaskets to see that they are in good condition.
11. Screw fill cap tightly in place.
12. Replace cartridge and guard.
13. Attach E-5962 form, properly filled out.

14. Return extinguisher to its position on the wall.
- B. For Dry Chemical, stored pressure.
1. Remove extinguisher from wall hanger.
  2. Observe pressure gauge. Add either dry air or nitrogen to increase pressure if below operable range and test for leakage. (see C-14).
  3. Weigh extinguisher. Weight should be within 1 pound of that shown on maintenance plate.
  4. Unscrew hose from extinguisher and blow through hose to insure a clear passage.
  5. Replace hose, tighten firmly.
  6. Return extinguisher to its location on wall.
- C. Recharging a stored pressure Dry Chemical extinguisher.
1. Release any residual pressure and dry chemical by inverting the extinguisher and opening the nozzle at the end of the hose.
  2. Remove hose.
  3. Remove operating head assembly. Do not damage the seating surfaces in fill collar on the extinguisher.
  4. Recharge the extinguisher to the rated capacity with the proper dry chemical.
  5. Clean the dry chemical off the seating surfaces and threads.
  6. Clean and lubricate "O" ring with a thin film of a good grease or oil.
7. Replace operating head assembly and tighten head ring firmly. Have gauge facing operating instructions on cylinder.
  8. Replace ring pin.
  9. Install charging adapter. Connect to nitrogen cylinder through pressure regulator dead set at 225 psi.
  10. Pressurize to 195 psi by slowly opening the nitrogen supply valve.
  11. Close nitrogen supply valve. Release charging line by loosening hose coupling to adaptor. Remove charging adaptor.
  12. Check hose and nozzle for obstructions or damage and replace on operating head, tightening firmly.
  13. Record recharge date on E-5962 form.
  14. Observe the pressure 48 hours after recharge. If gauge shows pressure loss, check for leakage by
    - a. Remove hose assembly.
    - b. Install recharge adaptor.
    - c. Apply a soap solution film to adaptor end.
    - d. Apply a soap solution around top and bottom of head ring joint.
    - e. Bubbles indicate point of leakage.
    - f. If tightening the ring or hose connection does not stop the bubbling then it might be necessary to replace the "O" ring.

**7. APPEARANCE**

**7.01** The finish of the extinguisher should be examined and cleaned (not painted) to restore good appearance, if required.