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## Dry Chemical Units Handline and Fixed Systems

### APPLICATION

The following data is based on maximum anticipated area of spill or contained area of hazard and the fire fighters being experienced professionals. If the fire fighter is a novice, only 40% of the area of spill in square feet should be used for anticipated extinguishing capability.

The following data is based on using Purple-K (Potassium Bicarbonate) dry chemical agent. Capabilities of other agents will vary slightly in number of square feet.

UNIT MODEL NO.	CAPACITY IN POUNDS	AREA OF SPILL IN SQUARE FT.	NO. & SIZE HANDLINES
CDC200	200	640	(1)3/4" X 50
CDC500	500	1600	(1)1" X 75'
CDC1000	1000	3200	(2)1" X 100'
CDC1500	1500	4800	(2)1" X 150**
CDC2500	2500	8000	(2)1" x 150***

\*Recommend optional 60 lb./sec. turret nozzle.

\*\*Recommend optional 90 lb./sec. turret nozzle.

Dry chemical is an excellent extinguishing agent due to its rapid flame suppressing capability on hydrocarbon, three-dimensional and natural gas pressure fires. Large skid mounted dry chemical units can be provided for fixed location handling operations or fixed systems installations. The fixed system units are provided without hose reels and with the nitrogen cylinders standing upright in a rack for accessibility. The handline units are provided with hose reels mounted on the unit under a weather hood and the nitrogen cylinders lying horizontally underneath the reel(s). They can also be mounted on trucks or trailers if mobile capability is required.

### TWIN AGENT UNITS

Should the fire hazard have class "A" material

or an excess amount of metal in the fire area which may cause hot spots, it would be desirable to consider a twin agent unit to obtain the securing capability of a foaming agent. A twin agent unit allows a single operator to apply dry chemical agent for rapid extinguishment and a foaming agent to secure the hazard simultaneously.

### TWIN AGENT CAPABILITY

CTA500/50	1500 SQ. FT.	(1) 1"X 1"X100' HANDLINE
CTA500/100	3000 SQ. FT.	(1) 1"X 1"X100' HANDLINE
CTA1000/100	3000 SQ. FT.	(1) 1"X 1"X100' HANDLINE
CTA1000/150	4500 SQ. FT.	(2) 1"X 1"X100' HANDLINE
CTA1500/150	4500 SQ. FT.	(2) 1"X 1"X100' HANDLINE
CTA1500/250	7500 SQ.	(2) 1"X 1"X100' HANDLINE*

\* Twin Turret Nozzle Recommended

### TYPICAL APPLICATIONS FOR DRY CHEMICAL UNITS AND SYSTEMS

- Compressor Stations
- Oil and Gas Well Servicing
- Drilling Operations
- Off-Shore Platforms
- Fuel Loading Racks
- Storage Tank Vents
- Electrical Transformers
- Chemical and Petro-Chemical
- Plants
- Storage Facilities
- Airports and Heliports
- Manufacturing Facilities

### SELECTING AND APPLYING UNITS AND/OR SYSTEMS

The first steps in determining the requirements for protection of a hazard is to identify the hazard and determine size and any conditions requiring special consideration such as wind

exposure or objects blocking discharge of agent to the hazard.

### **COMMON TYPES OF FIRE HAZARDS:**

- Spill fires: Hydrocarbon and paint products from storage drums, transformers, and processing and bulk storage tanks.
- Liquid in depth: Drip pans dip tanks, cleaning solvent tanks and quench tanks.
- Three dimensional fires: Ruptured containers, bulk storage tank overflows and broken piping.
- Pressure fires: Faulty seals or packing, broken flanges or piping, blown gaskets and operating pressure relief valves.
- Class "A" fires: Trash containers, pallets, tires, dust collectors and paint filters.

### **TYPE OF EQUIPMENT AND APPLICATION REQUIRED:**

The type of system required (Handline application, total flooding, manual, semi-automatic or full automatic) is normally a judgment call based on the following:

- Is the facility manned full time?
- Are experienced fire fighting personnel available at all times?
- Visibility of hazard in the event of fire
- Power source available for automatic systems
- Hazard to personnel that might be in area during discharge of equipment
- Obstacles which would prevent extinguishment using handlines

When handline type protection is used, the unit must have the capacity to maintain flow through the handlines for a minimum of 30 seconds. A fixed system providing total flooding must reach

total concentration of the agent in less than 30 seconds (Ref: NFPA 17 Standard for Dry chemical Extinguishing Systems).

To determine the unit size required for a fixed system on a hydrocarbon spill fire, multiply the number of square feet to be protected times .039.

For ABC fires use 500 pounds of dry chemical per 2,000 cubic feet.

To determine requirements for dry chemical systems, obtain hazard type, size of hazard, location of hazard, preferred method of application and forward this information to equipment manufacturer for specific details and pricing.

### **TYPICAL DRY CHEMICAL SYSTEMS**

Attached are three typical dry chemical installations:

FIGURE 1 - Typical Dry Chemical System for Compressor Station.

FIGURE 2 - Typical Installation of Handline Unit with Remote Hose Reel Station on Off-Shore Platform (Remote Reel Stations may be located on decks other than that of the unit).

FIGURE 3 - Typical Deluge System for Drilling Nipple or Well Head on Drilling Rig.