TECHNICAL BULLETIN

Pyro-Chem

Dry Chemical Clean-Up Procedures

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Johnson Controls

Dry chemical is a proven firefighting agent used in portable extinguishers and fixed pipe fire suppression systems. Its fast flame knockdown characteristics can be attributed to its chemical makeup and small particle size. These same attributes help dry chemical find its way in and around nearly everything in the vicinity of discharge. This tends to raise two questions:

1) How does dry chemical agent affect the materials in the surrounding area?
2) What are the recommendations for cleaning up and/or neutralizing those areas exposed to the dry chemical agent?

The Effects of Dry Chemical Suppressing Agent

Tests have been conducted to investigate the possible corrosive effects of dry chemical on common metals such as steel and aluminum. Corrosion was not evident on any sample in contact with dry chemical under dry conditions. If dry chemical is left on surfaces which are exposed to moisture, discoloration and dulling of aluminum parts and paint finishes can be expected.

Dry chemical should be cleaned up promptly to avoid being contaminated with moisture whether through direct contact or humidity. Dry chemicals may be corrosive to surfaces which are sensitive to mildly acidic or mildly alkaline materials.

The various base materials used in manufacturing dry chemicals account for the differences in the pH level from agent to agent.

FORAY Dry Chemical is a monoammonium phosphate based dry chemical containing additives that make it free-flowing and water repellent.

- Typical/Average particle size is approximately 20 microns.
- FORAY dry chemical is color coded yellow for identification purposes and can be used on class A and B type fires and is class C rated.
- Monoammonium phosphate is slightly acidic in the presence of moisture resulting in mild corrosive properties.
- Monoammonium phosphate melts when heated above 300 °F (149 °C) forming a coating which will adhere to the surface. The coating will continue to adhere even after the surface has cooled This coating, when exposed to moisture, is also acidic.

PLUS-FIFTY C Dry Chemical is a sodium bicarbonate based dry chemical containing additives that make it free-flowing and water repellent.

- Typical/Average particle size is approximately 20 microns.
- PLUS-FIFTY C Dry Chemical is color coded light blue for identification purposes and is capable of suppressing class B fires, and is class C rated.
- Sodium bicarbonate is mildly alkaline and can be corrosive to surfaces that are affected by alkaline residue.

Purple-K Dry Chemical is a potassium bicarbonate based dry chemical containing additives that make it free-flowing and water repellent.

- Typical/Average particle size is approximately 20 microns.
- Purple-K Dry Chemical is color coded violet for identification purposes and is capable of suppressing class B fires, and is class C rated.
- Potassium bicarbonate is mildly alkaline and can be corrosive to surfaces that are affected by alkaline residue.

Dry Chemical Clean-Up Recommendations

The complexity of the equipment and its susceptibility to corrosive material will dictate the degree of cleanup necessary. For example, an outdoor diked area will require much less clean-up time than a automotive paint spray booth. It may also be necessary to request clean-up recommendations from the manufacturer of the affected equipment. If electrical wiring or equipment is in or around the contaminated area, it must be shut off prior to cleanup.

When dry chemical cleanup is required, it should be accomplished immediately by following these recommended steps.

- Sweep or vacuum the settled residual dry chemical. If vacuuming, use a filter such as a HEPA filter which is capable of trapping the small dry chemical particles. If necessary, wipe with a damp soft cloth.
- To break down the silicone in the dry chemical, spray the area with a solution of 50% isopropyl alcohol and 50% warm water. After the solution has set for a few minutes, rinse with warm water.
- To neutralize sodium bicarbonate and potassium bicarbonate based dry chemicals, spray or wash the area with a solution of 98% hot water and 2% vinegar (one cup of vinegar to three gallons of water). Let stand for a few minutes; then rinse with warm water.
- To neutralize monoammonium phosphate based dry chemical, spray or wash the area with a solution of hot water and baking soda (one cup of baking soda to three gallons of water.) Let stand for a few minutes; then rinse with warm water.
- Wash the area with a mild soap and water solution; then rinse.
- Blow dry to remove residual water.
- If any electrical contacts have been affected by a dry chemical discharge, use an approved electrical contact cleaner.