

Common Myth #11

Posted on [March 1, 2013](#) by [Amerex](#)

Dry Chemical “smothers” the fire.

Description

Only in certain circumstances. On Class B fires, dry chemical interrupts the chain reaction. During the early stages in the development of dry chemical agents, it was thought that the fire was being smothered. Regular Dry Chemical (sodium bicarbonate) and Purple-K (potassium bicarbonate) break down in the flame front to form carbon dioxide and water vapor. However, there is neither enough carbon dioxide to extinguish the fire, nor is there enough water vapor to extinguish the fire.

On a Class B fire, dry chemical interrupts the chain reaction (kind of like a referee breaking up a fight) and extinguishes the fire. This is why it is important to look for a “flash back” when using dry chemical on a liquid fuel fire. There is still oxygen, fuel and hot surfaces present to allow the fire to re-ignite. On Class B fires, Dry chemical does not cool anything down, does not take away the oxygen and does not take away the fuel.

On Class A fires, only ABC or multipurpose dry chemical is effective. ABC dry chemical (mono-ammonium phosphate) will start to break down at between 350 deg. F and 400 deg. F to form a molten residue that will stick to the burning embers and exclude oxygen. This is the only circumstance that dry chemical may be said to “smother” the fire.

It is also important to remember that the ABC dry chemical must be applied to the burning embers in order to have it work. It may be necessary to “break apart” a Class A fire to make sure that all of the burning surfaces are covered.

For more information on extinguishment theory – see our “Fire and Fire Extinguishment” or the NFPA Fire Protection Handbook.