



Coffee Break Training - Fire Protection Series

Fire Dynamics: The A, B, C, D and K's of Fire

No. FP-2014-41 October 14, 2014

Learning Objective: The student will be able to explain fire types by their letter designations.

One of the first tasks that firefighters and inspectors learn is how to classify fires in accordance with the common letter designations. Knowing the correct fire type enables one to select the appropriate fire-extinguishing media to safely suppress a fire.

Fires are classified into one of five categories based on the burning products. The following table explains the classes and the description of the primary contents involved in the fire.

Class	Description
A	Fires in ordinary combustible materials, such as wood, cloth, paper, rubber, and many plastics.
B	Fires in flammable liquids, combustible liquids, petroleum greases, tars, oils, oil-based paints, solvents, lacquers, alcohols, and flammable gases.
C	Fires that involve energized electrical equipment.
D	Fires in combustible metals, such as magnesium, titanium, zirconium, sodium, lithium, and potassium.
K	Fires in cooking appliances that involve combustible cooking media (vegetable or animal oils and fats).

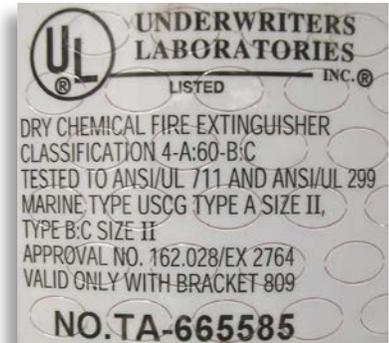
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There are circumstances where:

- More than one class of fire may be involved. For example, a liquefied petroleum gas vessel that is venting as a result of a wildland fire exposure would be a combined Class A (vegetation) and Class B (flammable liquid/gas) fire that might require special fire suppression approaches.
- A fire can change from one class to another. Class C fires are those that involve “energized electrical equipment.” Once the electrical energy is removed, the fire is classified based on the burning material. A flaming television set becomes a Class A fire when the electricity is disconnected.

With the wide variety of extinguishing agents that exist (e.g., water, dry chemical, dry powder, clean agent), it is essential to select the correct agent for the fire type.

For more information, consider enrolling in the National Fire Academy (NFA) course “Fire Protection for the Built Environment” (R/N0135). Information and applications can be obtained at <http://apps.usfa.fema.gov/nfacourses/catalog/details/645>. The course is available at the NFA in Emmitsburg, Maryland, or through your state fire service training agency.



This fire extinguisher's tamper-proof label indicates that the appliance is listed for use on Class A, B and C type fires.



Eligible for Continuing Education Units (CEUs)
at www.usfa.fema.gov/nfaonline

For archived downloads, go to:

www.usfa.fema.gov/nfa/coffee-break/