

Extinguishing Class D Fires

Class D fire extinguishers can be used on combustible metal fires and can be specially ordered if you have reactive class D materials. All research labs are stocked with dry chemical class ABC extinguishers. ABC extinguishers are not appropriate for metal fire or class D fires because they combine a projectile blast from the extinguisher with an agent it is incompatible with. This will spread and intensify the fire. Researchers are responsible for following best practices to prevent laboratory fire and prepare for them.

Class D extinguishers



- Identifiable by the yellow star and letter D.
- Have a long wand or arm to keep the operator's hands away from the extreme heat and prevent inhalation of toxic fumes caused by burning materials.
- The wide cone dispenser is designed to fully cover a source without disturbing it.
- Are used on combustible metals such as magnesium, titanium, sodium, etc., which require an extinguishing medium that does not react with the burning metal.
- They do not spray outward like other extinguishers, instead **powder falls via gravity**.

Other methods of extinguishing

- Bucket of sand.
- Lid or cover.
- Common dry powder substances that effectively douse metal fires include graphite in powder form and sodium chloride in granular form.

Preparing for a possible class D fire

- Any time you are planning on working with a reactive metal, you should place methods of extinguishing small fires near where you will be working, and a method of extinguishing larger fires at a safe, but easily accessible distance away from where you'll be working.
- If you have a class D extinguisher, try picking it up. If you cannot move it, don't try to use it. A cart can be used to move heavy extinguishers.
- Make sure the class D extinguisher is readily accessible, but not directly where you are using metals.
- Only remove as much reagent as necessary.
- Close, cap or cover the reagent as soon as possible.

If a fire breaks out: You are not required to try to extinguish it!

Volunteers may extinguish it, if safe to do so:

- If the fire is small and not spreading rapidly.
- There is no immediate danger and there is a clear escape path.
- The appropriate type extinguisher is available.

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If you choose to extinguish the fire:

1. First, use the extinguishing agent which is quickest and easiest to manipulate, often sand.
2. If the fire is too hot or you are more than 3 feet away, use the class D extinguisher
3. If the metal fire has ended but caused the ignition of combustible or flammable materials, use an ABC extinguisher.
4. If both metals and combustible or flammable materials are burning it is a compound fire. Do not attempt to extinguish these fires, EVACUATE.
5. If you evacuate, confine the fire (i.e. shut hood sash, close doors in the fire area), report it by dialing 911, and activate a fire alarm pull station (if available).

If you choose to use a class D extinguisher:

1. Keep your eye on the fire.
2. Stay between the fire and an exit. Leave if the fire starts to come between you and the exit.
3. Get upwind (if outside), 8-10 feet from the fire.
4. Place the nozzle **directly above** the fire at its edge.
5. Activate and slowly sweep inward as a crust forms.
6. To avoid re-ignition allow metal to cool before cleanup.
7. After extinguishing, always keep your eyes on the fire, incase it flares up again, as you walk away.
8. Evacuate and ventilate the area immediately after use. The fumes and smoke from any fire may be hazardous and can be deadly.

A fire that requires more than one fire extinguisher is too serious for you to fight!

Evacuate and call 911. Pull the fire alarm, if available.

For more information regarding the proper use of ABC fire extinguishers when there is no metal fire present, please see the [Fire Extinguisher Fact Sheet](#)