Chapter 9: Chemical Reactions

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Metal Fires

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Grease Fires

Some fires can be extinguished by a chemical reaction. In kitchen grease fires, the chemicals that are used to fight the fire react with the grease. The reaction produces a foam that puts out the fire.

Grease Fires

Hazardous Reactions

Chemicals may react with water to form poisonous gases or acids. Firefighters might use a foam that extinguishes the fire, cools the area around the fire, and traps gases released by the fire. The symbols shown on the left are among several that show firefighters what chemical dangers may be present.

EXPLORE

Build a carbon dioxide fire extinguisher.

1. Put 3 tsp of baking soda on a tissue and roll it into a tube. Tie the ends and middle of the tube with thread. Leave extra thread at one end of the tube.
2. Mold clay tightly around a straw.
3. Pour some vinegar into a bottle.
4. Hold the thread to suspend the tissue tube above the vinegar. Place the straw inside the bottle. Use the clay molded around the straw to hold the thread in place. Be sure that the straw is not touching the vinegar.
5. Shake and observe the fire extinguisher.

The fire shown above is a magnesium fire in Chicago in 1998. Firefighters used water to protect surrounding buildings, but dumped road salt on the burning magnesium.