



# Fire Protection Training

Procedures Handbook 4300

FIRE PHYSICS & CHEMISTRY

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**TOPIC:** Classification of Fire and Common Extinguishing Agents

**TIME FRAME:** 30 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* A written quiz

*Behavior:* The student will describe the four classes of fire and the common extinguishing agents for each class

*Standard:* With a minimum 70% accuracy

**MATERIALS NEEDED:**

- Appropriate audio visual aid
- Chalkboard

**REFERENCES:**

- IFSTA, Essentials of Fire Fighting, 2nd Edition, Chapter 1
- NFPA, Fire Protection Handbook, 17th Edition

**PREPARATION:** It is important to know what type of material is burning in a fire in order to determine which extinguishing agent and method should be used. Selection of the wrong extinguishing agent or method may lead to serious and unnecessary injuries.





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AGENTS

PRESENTATION	APPLICATION
<ul style="list-style-type: none"><li>2. Effective extinguishing agents include:<ul style="list-style-type: none"><li>a. Foams</li><li>b. Dry Chemicals</li><li>c. Halon</li><li>d. Water</li></ul></li><li>C. Class C Fires<ul style="list-style-type: none"><li>1. Materials involved<ul style="list-style-type: none"><li>a. Energized electrical equipment<ul style="list-style-type: none"><li>(1) Once the equipment is de-energized, the remaining fire should be treated as a Class A, B, or D fire for extinguishing purposes</li></ul></li></ul></li><li>2. Effective extinguishing agents include:<ul style="list-style-type: none"><li>a. Halon</li><li>b. Carbon dioxide</li><li>c. Dry chemical</li></ul></li></ul></li><li>D. Class D Fires<ul style="list-style-type: none"><li>1. Materials involved<ul style="list-style-type: none"><li>a. Combustible metals<ul style="list-style-type: none"><li>(1) Magnesium</li><li>(2) Sodium</li><li>(3) Lithium</li><li>(4) Potassium</li></ul></li></ul></li></ul></li></ul>	



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PRESENTATION	APPLICATION
<p>2. No single extinguishing agent is effective on all Class D materials</p> <ul style="list-style-type: none"><li>a. Care must be taken to use the correct agent.</li><li>b. Container label will indicate which combustible metal fires it is effective against.</li></ul> <p>3. Product identification is very important.</p> <p>4. Common extinguishing agents include:</p> <ul style="list-style-type: none"><li>a. Dry powders</li><li>b. Dry sand</li></ul>	<p>Is there an extinguishing agent which is effective on all Class D Fires?</p>



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## **SUMMARY:**

There are four classes of fire. Class A fires involve ordinary combustibles - wood, paper, plastics. Class B fires involve combustible and flammable liquids such as greases, gasoline and diesel fuels. Class C fires involve energized electrical equipment. Class D fires involve combustible metals - magnesium, titanium, etc.

## **EVALUATION:**

A written quiz.

## **ASSIGNMENT:**

To be determined by instructor(s).