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# Fire Extinguisher Requirements When Transporting Explosives via Vehicle

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## CAGC INFORMATION ALERT

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**Canadian Association of Geophysical Contractors**

1045, 1015 - 4th Street SW

Calgary, Alberta

T2R 1J4

Phone: 403 265 0045

Fax: 403 265 0025

E-mail: [info@cagc.ca](mailto:info@cagc.ca)

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The following information is not a definitive guide to government legislation and does not release users of this document from their responsibilities under applicable legislation.

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The following is the new requirement when transporting explosives via vehicle. At this point there are no provincial legislations that meet or exceed the Federal regulations. Therefore, all personnel transporting explosives in Canada must follow the regulation below as a minimum standard:

### **FEDERAL**

#### **Fire extinguishers**

##### **Section 191**

(8) The carrier must ensure that the vehicle that contains explosives is equipped with two fire extinguishers that have a rating of at least 4-A :40-B:C and are easily accessible.

\* Note for work in Saskatchewan: As per the Mines Regulations, 2003 an employer or contractor must ensure that any vehicle used for transporting explosives is equipped with two 4.5 kilogram, multi-purpose, dry chemical fire extinguishers that are readily available to the driver of the vehicle.

\* Note: The federal regulations do not mention a required size (weight) requirement of the fire extinguishers as long as the number of and type of extinguishers specified in Section 191 (8) is met.

**Fire Extinguisher Overview**

<p><b>1) Fire Extinguisher Classification &amp; UL Ratings</b></p> <ul style="list-style-type: none"> <li>- Class A</li> <li>- Class B</li> <li>- Class C</li> <li>- Class D</li> <li>- Class K</li> </ul>	<p><b>3) Extinguisher Size &amp; Placement</b></p> <ul style="list-style-type: none"> <li>- Hazard/ Hazard Area</li> <li>- Rating &amp; Coverage Area</li> <li>- Allowable Travel Distance</li> </ul>
<p><b>2) Hazard Classification</b></p> <ul style="list-style-type: none"> <li>- Light</li> <li>- Moderate</li> <li>- High</li> </ul>	<p><b>4) Maintenance &amp; Inspection</b></p> <ul style="list-style-type: none"> <li>- Monthly Inspection</li> <li>- Annual Maintenance</li> <li>- 6 Year Maintenance</li> <li>- Hydrostatic Test</li> </ul>

**Tetrahedron: How Fires Start**

Fire is a chemical reaction involving rapid oxidation or burning of a fuel. It needs four elements to occur:

- Fuel- Fuel can be any combustible material- solid, liquid, or gas. Most solids and liquids become a vapor or gas before they will burn.
- Oxygen- the air we breathe is about 21% oxygen. Fire only needs an atmosphere with at least 16% Oxygen.
- Heat- Heat is the energy necessary to increase the temperature of the fuel to a point where sufficient vapors are given off for ignition to occur.
- Chemical Chain Reaction- A chain reaction can occur when the three elements of fire are present in the proper conditions and proportions. Fire occurs when this rapid oxidation or burning takes place. Take any of these factors away and the fire cannot occur or will be extinguished if it was already burning.

## Fire Extinguisher Ratings

The UL rating is broken down into Class A and Class B:C ratings. These numerical ratings allow you to compare the relative extinguishing effectiveness of various fire extinguishers. For example, an extinguisher that is rated 4A:20B:C indicates the following:

- The A rating is a water equivalency rating. Each A is equivalent to 1.25 gallons of water. 4A = 5 gal. of water.
- The B:C rating is equivalent to the amount of square footage that related to the degree of training and experience of the operator, the extinguisher can cover. A 20 B:C = 20 sq. ft. of coverage.
- C indicates it is suitable for use on electrically energized equipment
- When analyzing these ratings, note that there is not a numerical rating for Class C or Class D fires. Class C fires are essentially either a Class A or Class B fire involving energized electrical equipment where the fire extinguishing media must be non-conductive. The fire extinguisher for a Class C fire should be based on the amount of the Class A or Class B component. For extinguisher use on a class D fire, the relative effectiveness is detailed on the extinguisher nameplate for the specific combustible metal fire for which it is recommended.