



## Safe Use of Metal Halide Lamps in Commercial Occupancies Questions and Answers

### **Why worry about the use of metal halide lamps?**

Metal halide lamps consist of a clear quartz arc tube containing mercury and other metals that are enclosed within a glass bulb. The arc tubes can operate at temperatures of 900 – 1100 C. If the arc tube ruptures, it can do so with enough force to fracture the outer glass bulb, releasing quartz fragments hot enough to ignite nearby combustibles, and cause serious burns to anyone nearby.

### **I've never heard of a lamp rupture, is there really a risk?**

Metal halide lamp manufacturers are very clear on all of their packaging that the risk of rupture is real and can be reduced by following the manufacturers' instructions. A metal halide lamp rupture in Barrie recently caused over \$350,000 damage and forced the business to close for almost a month.

### **What actions should I take to reduce the risks associated with metal halide lamps?**

1. Always group re-lamp metal halide installations at the time recommended by the lamp manufacturer. That is, replace all the lamps at the same time and on a regular basis. Although some spot re-lamping may be necessary for any installation, using spot re-lamping as the only replacement practice increases risk and is strongly discouraged.
2. Follow lamp manufacturer instructions for lamp cycling as may be applicable for specific lamp types. Cycling means turning off lamps at least once per week for a minimum of fifteen (15) minutes when they are in continuous operation.
3. Special care should be taken when storing flammable, combustible or oxidizing materials under metal halide lamps. For example: in warehouse applications locate lamps over the centre of aisles instead of over storage racks.
4. There are 3 metal halide lamp classifications. Type E lamps are to be used only in suitably rated enclosed luminaires (light fixtures). Type O lamps may be used in open or enclosed luminaires. Type S lamps have historically been used in both open and enclosed luminaires. In 2005 the National Electrical Code introduced changes restricting the use of Type S lamps to closed luminaires. The 2005 change in the NEC reflects experience with the newer technology Type O lamps in actual installations. The experience is that, even in those rare instances when an arc tube ruptures, the Type O lamp construction is effective in preventing the rupture particles from penetrating the outer bulb, thus preventing hot particles from falling into the surrounding space. Replacement lamps should have the appropriate classification to match the fixture in use.

**For more information contact your local Metal Halide Lamp supplier, or the Barrie Fire & Emergency Service Fire Prevention Division at (705) 728-3199.**

Barrie Fire & Emergency Service  
P.O. Box 400 Barrie, ON L4M 4T5  
(705) 728-3199