



GE Lighting

Marketing & Sales Division
General Electric Company
New Park, Cleveland, OH 44112

Your recent letter requested Material Safety Data Sheets for our ballast or lamp products.

Under the OSHA Hazards Communication Standard these products would be exempted under the definition of an "article" since they are 1) formed to a specific shape and design, 2) have end use functions dependent upon their shape and design, and 3) do not release or otherwise result in an exposure to a hazardous chemical under normal conditions of use.

Most state and local regulations also contain similar exemptions for such articles.

Should you have any additional questions, please feel free to contact me at (216) 266-3349.

A. M. Zielinski
Lighting Environmental Operation

LUCALOX LAMP AND CONTENTS

These lamps consist of an inner, high purity alumina ceramic tube enclosed in an outer envelope of heat-resistant glass which contains 5-10% lead. Depending on the lamp type, the envelope is either clear or coated with a diffusing material. The material used as a diffuser on the coated lamps is a specially prepared aluminum oxide.

The ceramic tube contains a small amount of sodium/mercury amalgam, ranging from 8.3 milligrams in a 50 watt up to 25 mg in a 1000 watt lamp. The sodium/mercury ratio varies from approximately 1/10 to 1/3. The fill gas used in the ceramic tube is high purity xenon gas, considered to be inert. The electrodes in the arc tube are manufactured from tungsten and are coated with an emission mix of barium calcium tungstate. Neither of these materials present a significant exposure due to their physical form and insolubility.

The air concentration of mercury resulting from the breakage of one or a small number of tubes should result in no significant exposure to the individual. This is due in part to the small amount of mercury amalgam present in the lamp, and also to the use of an external amalgam reservoir. All of the sodium/mercury amalgam, except for the amount that is present as a vapor in the arc tube during operation, remains in the external reservoir. However, when breaking a large number of lamps for disposal, appropriate monitoring and controls should be implemented to control airborne levels or surface contamination. We recommend that such work be done in a well ventilated area, and local exhaust ventilation or personal protective equipment may be needed.

Other than the normal concerns for electrical safety, there are no safety issues involved with Lucalox lamps during normal use. As for disposal, no special precautions are necessary since the amalgam is contained in the external amalgam reservoir and the inner arc tube and, unlike low pressure sodium lamps, will not react violently with water.

Although the lamp does contain a small amount of mercury, present as an amalgam with the sodium, there is very little ultraviolet light emitted by the lamp as compared to the mercury or metal halide lamp types. UV is a concern with both the mercury and the metal halide lamps since they can produce considerable amounts of UV if the outer jacket of these lamps is broken and the lamp continues to operate. This is not the case with a Lucalox lamp.

A Toxic Characteristic Leachate Test (TCLP) conducted on the lamp for lead could cause the lamp to be classified as a hazardous waste. Lucalox lamps use lead solder on the base of the lamp. The lead used in the solder should pose little risk of exposure under normal use and handling. While small numbers of these lamps placed in ordinary trash should not appreciably effect the nature or method of disposal of the trash, under some circumstances disposal of large quantities may be regulated. You should review your waste handling practices to assure that you dispose of waste lamps properly.

I hope this will answer any concerns that you may have regarding these lamps. Should you have any further questions, please feel free to contact me at (216) 266-3349.

A. M. Zielinski
Lighting Environmental, Health
and Safety Department

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