

DAMAR[®]

LAMP MATERIAL INFORMATION SHEET

MATERIAL SAFETY DATA SHEETS (MSDS)

Information and Applicability

The Material Safety Data Sheet (MSDS) requirements of the Occupational Safety and Health Administration (OSHA) for chemicals do not apply to manufactured articles such as lamps. During normal use and operation no materials contained in a lamp are released.

The following contains applicable Material Safety Data Sheet information.

I. PRODUCT IDENTIFICATION

DAMAR[®] ECO Fluorescent Lamps

DAMAR Worldwide 4 LLC
PO BOX 2347
Sarasota, FL 34230-2347

II. LAMP MATERIALS AND HAZARDOUS INGREDIENTS

- A. PHOSPHOR: The ECO product line uses two different phosphor systems. One phosphor system (halophosphate) uses calcium chloro-fluoro-phosphate, with small amounts (less than 1-2% by weight the phosphor) of antimony and manganese, both of which are tightly bound in the phosphor matrix. The second phosphor system (triphosphor) uses a mixture of rare earth elements such as lanthanum, and yttrium as either an oxide or as a phosphate, along with a barium/aluminum oxide. These phosphors produce better lamp efficiency and color rendition.
- B. MERCURY: Mercury is present in small amounts in all fluorescent lamps; the ECO lamp uses the lowest amount of mercury of any DAMAR lamp of the same type. The mercury target for an ECO lamp is over 85% less than the average of traditional fluorescent lamps of the same type. The average target dose for the F34T12CW/RS/ECO lamp is very low and optimized to balance performance requirements with environmental concerns.
- C. GLASS AND METAL: The glass tube used in this fluorescent lamp is manufactured from soda-lime glass and is essentially similar but not identical to that used throughout the glass industry for bottles and other common consumer items. The end-caps on the lamp are generally aluminum while the wires in the lamps are made of tungsten.

III. HEALTH CONCERNS

- A. PHOSPHOR: Except for small modifications, the halophosphor is essentially the same material that has been in use in fluorescent lamps for decades. OSHA characterizes antimony, manganese, yttrium and barium compounds as hazardous chemicals. However, due to their insolubility, relatively low toxicity and small amount present in the phosphor and the lamp, these materials do not present a significant hazard in the event of lamp breakage.
- B. MERCURY: Not applicable for an intact lamp. No adverse affects are expected from occasional exposure to phosphor powder dust and elemental mercury vapor due to lamp breakage. However, breaking a large number of lamps for disposal should only occur with sufficient ventilation. Ventilation and personal protective equipment such as respirators may be needed.

IV. DISPOSAL CONCERNS

TCLP: ECO fluorescent lamps consistently pass the EPA Toxicity Characteristic Leaching Procedure for mercury by a significant margin. Therefore, federal EPA does not classify ECO lamps as hazardous waste.

While ECO lamps will pass the federal EPA TCLP test, state and/or local regulations may still regulate the disposal of mercury-containing products. To check state regulations or to locate a recycler, go to www.lamprecycle.org.