



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 are not applicable to manufactured articles such as lamps. No material contained in a lamp is released during normal use and operation.

The following information is provided as a service to our customers. The following Lamp Material Information Sheet contains applicable Material Safety Data Sheet information.

I. Product Identification

GE Ecolux® Fluorescent Lamps

II. Lamp Materials and Hazardous Ingredients

Glass & 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 (called filaments or cathodes) are made of tungsten.

Phosphor

The Ecolux 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 (SP/SPX) 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. The phosphor components may vary slightly depending on the color of the lamp (cool white, warm white, etc.).

Mercury

While mercury is present in small amounts in all fluorescent lamps, the Ecolux lamp uses the lowest amount of mercury of any GE Lighting lamp of the same type. The amount of mercury present in any

given lamp will vary slightly, but the target dose for Ecolux is over 85% less than the average for traditional fluorescent lamp designs of the same type. The average target dose for the F40T12 Ecolux lamp and the F32T8 Ecolux lamp is very low and optimized to balance performance requirements with environmental concerns..

Metals

Internally, the support wires used in the lamp construction are made from nickel-coated iron, stainless steel, molybdenum, or niobium, while the electrodes are tungsten. Many of the ceramic metal halide types will use a brass base and have lead-soldered connections to that base.

III. Health Concerns

Phosphor

Except for small modifications, the halophosphor is essentially the same material that has been in use in GE lamps for over fifty years. The Industrial Hygiene Foundation of the Mellon Institute found no significant adverse effects, either by ingestion, inhalation, skin contact, or eye implant, in a five-year animal study of the original phosphor. Also, there have been no significant adverse effects on humans by any of these routes during the many years of its manufacture or use. The phosphor is somewhat similar to the inert mineral apatites (calcium phosphate-fluorides) that occur in nature. Antimony, manganese, yttrium and barium compounds are characterized by OSHA as hazardous chemicals, as are most inorganic compounds. 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 breakage of the lamp.

Mercury

Neither the mercury nor the phosphor concentration in air produced as a result of breaking one or a small number of fluorescent lamps would result in significant exposure levels. However, when breaking a large number of lamps for disposal, appropriate industrial hygiene monitoring and controls should be used to minimize airborne levels or surface contamination. Such work must be done in a well-ventilated area. Local exhaust ventilation and personal protective equipment such as respirators may be needed.

IV. Disposal Concerns

TCLP

Ecolux fluorescent lamps consistently pass the EPA Toxicity Characteristic Leaching Procedure¹ for mercury by significant margin. Therefore, federal EPA does not classify Ecolux lamps as hazardous waste.