GE Lighting

1975 Noble Road
E. Cleveland, OH 44112
USA

Product Safety Data Sheet

GE Mercury Vapor Lamps

Safety Data Sheet (SDS), or Material Safety Data Sheets (MSDS)

Information and Applicability

The Product Safety Data Sheet (SDS) requirements, formally known as the Material Safety Data Sheets (MSDS), 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 Product Safety Data Sheet contains applicable Safety Data Sheet information.

Section 1. Product Identification

GE Mercury Vapor Lamps

GE Lighting
1975 Noble Road
Nela Park
E. Cleveland, OH 44112
(216) 266-2222

Section 2. Hazard Identification

Ultraviolet (UV) Radiation

The quartz arc tube, when operating, generates a considerable amount of ultraviolet radiation. The UV is filtered to acceptable levels by the glass outer envelope during normal use. However, if the outer envelope is broken, the UV filtering is lost. Lamps having ordering codes beginning with the letters "HR" or "HSB" have the following warning notice required under Federal Regulation 21 CFR 1040.30:

"WARNING: This lamp can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if outer envelope of the lamp is broken or punctured, and the arc tube continues to operate. Do not use where people will remain for more

than a few minutes unless adequate shielding or other safety precautions are used. General Electric Company has commercially available SAF-T-GARD Mercury and Multi-Vapor lamps that will automatically extinguish when the outer envelope is broken."

The self-extinguishing lamps referred to above have order codes beginning with the letters "HT" or "MVT". If the outer glass envelope of a SAF-T-GARD lamp is broken, although the arc tube will have self-extinguished, its support structure will still be electrically connected and could present an electrical shock hazard. Therefore, regardless of the type, if the outer envelope of the lamp is broken, turn the power off before replacing the lamps.

Section 3 – Lamp Composition and Detailed Ingredient Information

Glass

These lamps consist of an inner quartz arc tube enclosed in an outer envelope of heat-resistant glass. Depending on the lamp type, the envelope is either clear of coated with one of two different materials.

Phosphor

The phosphor used on the outer envelope of the "DX" type lamps consists of yttrium vanadate phosphate.

The phosphor used on the outer envelope of the "WDX" lamps is the same as that in the "DX" lamps but with the addition of a small amount of magnesium germanate phosphor, a toxicologically relatively inert material.

Arc Tube

The quartz arc tube contains a small amount of mercury, ranging from 14 milligrams in a 50 watt up to 250 mg in a 1000-watt lamp. The arc tube contains a small amount of inert gas argon used as a fill gas. It also contains a small amount of other materials, used as an emission mix on the electrodes.

The arc tube also contains small amounts of sodium and scandium iodide, and in some cases thorium iodide. None of these materials are expected to be a hazard in the small quantities present in the arc tube. The coating on the end(s) of the arc tube is aluminum oxide, a material generally considered to have a low order of toxicity.

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Metals

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

Section 4 – First Aid Measures

Not applicable to intact lamps during normal use and operation.

Section 5 – Fire-Fighting Measures

No special precautions necessary for fire fighters.

Section 6 - Accidental Release Measures

Less than 1% of the mercury in a Mercury Vapor lamp is in vapor form and will be released if a lamp is accidentally broken. This extremely small exposure is less than 0.05 mg of mercury and is insignificant to an individual. Removing the broken lamp debris and ventilating the area for 15 minutes (if possible) is recommended. Do not vacuum lamp fragments. Clean-up all visible lamp pieces before vacuuming.

Section 7 – Handling and Storage

New lamps being held for use, or spent lamps being held for recycling, should remain in their original packaging, or other protective packaging, and should be placed in a dry storage area that minimizes any risk of accidental breakage.

Section 8 – Exposure Controls/Personal Protection

No special requirements during normal use and operation.

Section 9 – Physical and Chemical Properties

Not applicable to intact lamps.

Section 10 – Stability and Reactivity

Not applicable to intact lamps.

Section 11 – Toxicological Information

Mercury

The mercury concentration in air produced because of accidentally breaking one or a small number of fluorescent lamps should result in significant exposures to the individual. However, when intentionally breaking a large number of lamps for disposal, appropriate industrial hygiene monitoring and controls should be implemented to minimize airborne levels or surface contamination. We recommend that the work be done in a well-ventilated area, and local exhaust ventilation or personal protective equipment may be needed.

Phosphor

The phosphor used on the outer envelope of the "DX" type lamps consists of yttrium vanadate phosphate. This material, like most vanadium compounds, is relatively insoluble, and appears to have a much lower toxicity than vanadium pentoxide but may elicit some similar symptoms at high exposure levels. Excessive inhalation exposure to vanadium pentoxide may result in irritation of the nasal passages and respiratory tract, cough, difficulty in breathing, and bronchitis. However, the yttrium vanadium phosphate from the breakage of one or a small number of lamps should not result in a significant exposure.

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Section 13 – Disposal Considerations

TCLP

A Toxicity Characteristic Leaching Procedure (TCLP) test conducted on the lamp for lead or mercury could cause the lamp to be classified as a hazardous waste. Mercury lamps use lead solder on the lamp base and mercury in the arc tube. The lead solder or mercury vapor should pose little risk of exposure under normal use and handling. While small numbers of these lamps placed in the ordinary trash should not appreciably effect the nature or method of disposal of the trash in most states, under some circumstances disposal of large quantities may be regulated.

Some states require all mercury containing lamps to be recycled regardless of the quantity of lamps and if they pass the TCLP test. You should review your waste handling practices to assure that you dispose of waste lamps properly. Contact your state environmental department for any regulations that may apply. To check state regulations or to locate a recycler, go to www.lamprecycle.org.

Universal Waste

Used lamps being stored for recycling must be managed as Universal Waste.
(1) Lamps being held for recycling should be held in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps and such containers should remain closed.
(2) Any lamp that is broken or shows evidence of damage should be placed in a container that is closed, structurally sound, and compatible with the contents of the broken lamps.
(3) If storing lamps for recycling, each container in which such lamps are stored must be labeled or marked clearly with one of the following phrases: “Universal Waste--Lamp(s),” or “Waste Lamp(s),” or “Used Lamp(s).”

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Section 16 – Other Information

The Product Safety Data Sheet for GE Mercury Vapor Lamps was prepared in 2017.