

PRODUCT SAFETY DATA SHEET
PSDS No. 1.1.5
COMPACT FLUORESCENT LAMPS



Sylvania brand Compact Fluorescent Lamps, manufactured by OSRAM/OSRAM SYLVANIA, are exempted from the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) because they are "articles." The following information is provided by OSRAM SYLVANIA as a courtesy to its customers.

I. PRODUCT IDENTIFICATION

Family Name: Sylvania Compact Fluorescent Lamps (For general lighting applications)
Trade Names (as labeled): Sylvania DULUX EL[®] (Consists of lamp and ballast/adaptor as a unit)
Sylvania DULUX[®] (Lamp alone, no ballast/adaptor)
DULUX EL & DULUX are registered trademarks of OSRAM GmbH.
Manufacturer: OSRAM SYLVANIA Products Inc.
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II. HAZARDOUS INGREDIENTS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT. The following materials, unless specified otherwise, are part of the glass bulb portion of the DULUX EL unit and the entire DULUX unit. The % weight, unless specified otherwise, is relative to the glass bulb portion of the DULUX EL and the entire DULUX. If the glass bulb is broken, the following materials may be released:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>% by wt.</u>	<u>Exposure Limits in Air (mg/cubic m)</u>	
			<u>ACGIH (TLV)</u>	<u>OSHA (PEL)</u>
Glass (Soda-Lime)	---	75-90	10.0 ⁽²⁾	15.0 ⁽²⁾
(1, 4) Mercury	7439-97-6	<0.05	0.025	0.1 Ceiling
(1, 3) Lead Oxide	1317-36-8	0.2-2.0	0.05	0.05
Aluminum Oxide	001-344-281	0-2.0	10.0 ⁽²⁾	15.0 ⁽²⁾
(1, 4, 6) Lead Solder (as Pb)	7439-92-1	0-0.4	0.05	0.05
(5) Krypton-85	7439-90-9	0-<0.01	---	---
Fluorescent Phosphor may contain:	---	0.5-3.0	10.0 ⁽²⁾	15.0 ⁽²⁾
(3) Barium Compounds (as Ba dust)	7440-39-3	0-0.1	0.5	0.5
(3) Manganese (as dust)	7439-96-5	0-0.1	0.2	5.0 Ceiling
(3) Yttrium Oxide (as Y dust)	7440-65-5	0-0.5	1.0	1.0

- (1) These chemicals are subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.
- (2) Limits as nuisance particulate.
- (3) These elements are contained in the material as part of its chemical structure; the material is not a mixture.
- (4) The mercury and lead in this product are substances known to the state of California to cause reproductive toxicity if ingested. [California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).]
- (5) This radioactive isotope is only found in the glass-encapsulated starting switch mounted in the base of 2-pin DULUX lamps, and is *not* found in 4-pin DULUX or DULUX EL lamps.
- (6) This material is found only on the base of the DULUX EL ballast/adaptor unit and the % weight is relative to the entire lamp & ballast/adaptor unit.

III. PHYSICAL PROPERTIES

Not applicable to intact lamp.

IV. FIRE & EXPLOSION HAZARDS

Flammability: Non-combustible.

Fire Extinguishing Materials: Use extinguishing agents suitable for surrounding fire.

Special Firefighting Procedure: Use a self-contained breathing apparatus to prevent inhalation of dust and/or fumes that may be generated from broken lamps during firefighting activities.

Unusual Fire and Explosion Hazards: When exposed to high temperature, toxic fumes may be released from broken lamps.

V. HEALTH HAZARDS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT. No adverse effects are expected from occasional exposure to broken lamps. As a matter of good practice, avoid prolonged or frequent exposure to broken lamps unless there is adequate ventilation. The major hazard from broken lamps is the possibility of sustaining glass cuts.

NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards and/or NIOSH Pocket Guide to Chemical Hazards lists the following effects of overexposure to the chemicals/materials tabulated below when they are inhaled, ingested, or contacted with skin or eye:

Mercury - Exposure to high concentrations of vapors for brief periods can cause acute symptoms such as pneumonitis, chest pains, shortness of breath, coughing, gingivitis, salivation and possibly stomatitis. May cause redness and irritation as a result of contact with skin and/or eyes.

Lead - Ingestion and inhalation of lead dust or fume must be avoided. Irritation of the eyes and respiratory tract may occur. Excessive lead absorption is toxic and may include symptoms such as anemia, weakness, abdominal pain, and kidney disease.

Phosphor - Phosphor dust is considered to be physiologically inert and as such, has an OSHA exposure limit of 15 mg/cubic meter for total dust and 5 mg/cubic meter for respirable dust.

Barium Compounds - Alkaline barium compounds, such as the hydroxide and carbonate, may cause local irritation to the eyes, nose, throat, and skin.

Glass - Glass dust is considered to be physiologically inert and as such, has an OSHA exposure limit of 15 mg/cubic meter for total dust and 5 mg/cubic meter for respirable dust. The ACGIH TLVs for particulates not otherwise classified are 10 mg/cubic meter for total dust and 3 mg/cubic meter for respirable dust.

Manganese - Inhalation of manganese dust may cause local irritation to the eyes, nose, and throat.

Yttrium - Studies of workers exposed to this material showed no evidence of chronic or systemic effects.

Aluminum Oxide (Alumina) - Alumina is a non-toxic material which is very low in free silica content. Sharp-edged particles can irritate the eyes, perhaps the skin, and definitely the mucous membranes of the respiratory tract.

Krypton-85 Contained in Glow Switch - The radiation emitted by Kr-85 is 99.6% beta which is completely absorbed by the glass envelope of the glow switch and 0.4% gamma which is not. This radiation is, however, 100 to 200 times less than that allowable for clocks and watches. In the unlikely event of the glow switch breaking, the traces of krypton-85 gas immediately disperses in the air. Krypton gas and its radioactive isotope are inert (they do not react chemically with other substances) and are not absorbed by the body.

V. HEALTH HAZARDS (Continued)

EMERGENCY AND FIRST AID PROCEDURES

Glass Cuts: Perform normal first aid procedures. Seek medical attention as required.

Inhalation: If discomfort, irritation or symptoms of pulmonary involvement develop, remove from exposure and seek medical attention.

Ingestion: In the unlikely event of ingestion of a large quantity of material, seek medical attention.

Contact, Skin: Thoroughly wash affected area with mild soap or detergent and water and prevent further contact. Seek medical attention if irritation occurs.

Contact, Eye: Wash eyes, including under eyelids, immediately with copious amounts of water for 15 minutes. Seek medical attention.

CARCINOGENIC ASSESSMENT (NTP ANNUAL REPORT, IARC MONOGRAPHS, OTHER): None

VI. REACTIVITY DATA

Stability: Stable

Conditions to avoid: None for intact lamps.

Incompatibility (materials to avoid): None for intact lamps.

Hazardous Decomposition Products (including combustion products): None for intact lamps.

Hazardous Polymerization Products: Will not occur.

VII. PROCEDURES FOR DISPOSAL OF LAMPS

If lamps are broken, ventilate area where breakage occurred. Clean-up with mercury vacuum cleaner or other suitable means that avoid dust and mercury vapor generation. Take usual precautions for collection of broken glass. Clean-up requires special care due to mercury droplet proliferation. Place materials in closed containers to avoid generating dust.

It is the responsibility of the waste generator to ensure proper classification of waste products. To that end, TCLP tests should be conducted on all waste products, including this one, to determine the ultimate disposition in accordance with applicable federal, state and local regulations. Some states have specific disposal requirements for lamps containing mercury.

Lamps which pass the EPA's TCLP test are considered non-hazardous waste in most states. Always review your local and state regulations which can vary. Based upon the NEMA* Standard LL 2 (*Procedures for Pin-Based Compact Fluorescent Lamp Sample Preparation and the TCLP*) testing protocol, lamps marked "ECO" pass the TCLP test.

VIII. SPECIAL HANDLING INFORMATION - FOR BROKEN LAMPS

Ventilation: Use adequate general and local exhaust ventilation to maintain exposure levels below the PEL or TLV limits. If such ventilation is unavailable, use respirators as specified below.

Respiratory Protection: Use appropriate NIOSH approved respirator if airborne dust concentrations exceed the pertinent PEL or TLV limits. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

Eye Protection: OSHA specified safety glasses, goggles or face shield are recommended if lamps are being broken.

Protective Clothing: OSHA specified cut and puncture-resistant gloves are recommended for dealing with broken lamps.

Hygienic Practices: After handling broken lamps, wash thoroughly before eating, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

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In case of questions, please call:

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*NEMA (National Electrical Manufacturers Association) standard may be obtained from NEMA, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209.