SAFETY DATA SHEET
Fluorescent Lamps

SYLVANIA brand fluorescent lamps, manufactured by LEDVANCE, LLC, are exempted from the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS) because they are "articles." The following information is provided by LEDVANCE, LLC as a courtesy to its customers.

I. IDENTIFICATION

Trade Name (as labeled): **SYLVANIA Fluorescent Lamps**

This data sheet covers fluorescent lamp types excluding compact fluorescent (integrated and pin-based).

Safeline lamps are encased in a Polyethylene Terephthalate (PET) heat shrinkable tubing manufactured by EncapSulite International Inc., Stafford, TX.

Manufacturer:
LEDVANCE, LLC
1100 Tyrone Pike
Versailles, KY 40383
859-873-7351

Emergency Contact: EH&S Specialist 859-873-7351

II. HAZARD IDENTIFICATION



THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT.

Hazard Category: 3
SPECIFIC TARGET ORGAN TOXICITY (Single exposure)

Signal Word: Warning

Hazard Statement: May cause respiratory irritation.

Prevention: Avoid breathing dust if lamp is broken. Use only outdoors or in a well ventilated area.

Response: If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell.

Storage: Store broken lamp in well-ventilated place. **Keep container tightly closed. Store locked up.**

Disposal: Dispose of contents in accordance with disposal laws.

Consult the SYLVANIA product catalog or relevant technical data sheets for complete warnings, operating and installation guides for specific lamp types.

III. COMPOSITION – INFORMATION ON INGREDIENTS

There are no known health hazards from exposure to lamps that are intact.

Materials listed on this data sheet are contained in varying percentages in this product. Exact percentages are proprietary and will not be disclosed other than as required in accordance with the regulations. Each amp type may be manufactured with a different glass type. If the glass bulb is broken, the following materials may be released:

Chemical Name	CAS Number	% by wt.
Glass (oxide)	65997-17-3	75-99
(1, 4) Mercury	7439-97-6	0.005-0.019
Aluminum Oxide	1344-28-1	0.06-0.3
Fluorescent Phosphor and cathodes may contain:	---	0.5-3.0
(3) Barium Compounds (as Ba dust)	7440-39-3	0.09-0.4
(3) Magnesium (as dust)	7439-95-4	0-0.6
(3) Zinc (as dust)	7440-66-6	0-0.1
Fluoride (as F)	16984-48-8	0-0.1
(3) Manganese (as dust)	7439-96-5	0-0.1
(3) Tin (as dust)	7440-31-5	0-0.1
(3) Antimony (as dust)	7440-36-0	0-0.1
(3) Yttrium Oxide (as Y dust)	7440-65-5	0.9-1.6
Tungsten (as dust)	7440-33-7	<0.1
(3) Calcium (as dust)	7440-70.2	<0.1
(3) Europium (as dust)	7440-53-1	0-1.6
(3) Cerium (as dust)	7440-45-1	0-0.6
(3) Terbium (as dust)	7440-27-9	0.3-0.6
(3) Aluminum (as dust)	7429-90-5	0.3-0.6
(3) Strontium (as dust)	7440-24-6	<0.1
6" Curvalume® U-shaped Lamps contain a center support strap consisting of all, or a portion of the following:	---	

Carbonic Acid, Polymer with 4,4'-(1-methylethylidene) bis (2,6-dibromophenol) and 4,4'-(1- methylethylidene) bis [phenol]	32844-27-2	<.95
Titanium Dioxide	13463-67-7	<.95

(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).]

***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.

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. Sharpedged particles can irritate the eyes, perhaps the skin, and definitely the mucous membranes of the respiratory tract.

Tin - Contact, ingestion, or inhalation may cause one or more of the following symptoms: eye irritation, skin irritation, and respiratory system irritation.

Fluoride - Fluoride-containing dust may cause irritation of the eyes and respiratory tract. Swallowing fluoride may cause a salty or soapy taste, vomiting, abdominal pain, diarrhea, shortness of breath, difficulty in speaking, thirst, weakness of the pulse, disturbed color vision, muscular weakness, convulsions, loss of consciousness, and death. Kidney injury and bleeding from the stomach may occur. Repeated exposure to fluoride may cause excessive calcification of the bone and calcification of ligaments of the ribs, pelvis, and spinal column. Stiffness and limitation of motion may result. Repeated or prolonged exposure of the skin to fluoride-containing dust may cause a skin rash.

Tungsten - Contact, ingestion, or inhalation may cause one or more of the following symptoms: eye irritation, respiratory system irritation, diffuse pulmonary fibrosis, loss of appetite, nausea, cough, and blood changes.

Antimony - Contact, ingestion, or inhalation may cause one or more of the following symptoms: eye irritation, skin irritation, nose irritation, throat irritation, mouth irritation, cough, dizziness, headache, nausea, vomiting, diarrhea, stomach cramps, insomnia, anorexia, and unable to smell properly.

All other components of this product do not pose a significant risk of respiratory and/or physical effects.

IV. FIRST AID MEASURES:

Glass Cuts: Perform normal first aid procedures. Seek medical attention as required.
Inhalation: If discomfort or irritation to the nose and throat develop, remove from exposure and seek medical attention as needed. If breathing has stopped, perform artificial respiration; keep affected person warm and at rest; get medical attention as soon as possible.
Ingestion: In the unlikely event of ingesting a large quantity of material, seek medical attention immediately.
Contact, Skin: Thoroughly wash affected area with mild soap or detergent and water and prevent further contact. Seek medical attention as needed.
Contact, Eye: Wash eyes, including under eyelids, immediately with copious amounts of water for 15 minutes. Seek medical attention.

V. FIRE-FIGHTING MEASURES:

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.

VI. ACCIDENTAL RELEASE MEASURES:

ONLY APPLICABLE 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 hands and face thoroughly before eating, drinking, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

Follow the US Environmental Protection Agency's fluorescent lamp cleanup guidelines at www.epa.gov/cfl

However, if you are concerned about your health after cleaning up a broken fluorescent lamp, consult your local poison control center by calling 1-800-222-1222. You can call your center any time you have questions or in an emergency. You can also consult your physician about potential health effects from mercury exposures.

VII. HANDLING AND STORAGE - FOR BROKEN LAMPS

ONLY APPLICABLE 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. To avoid exposure to ultraviolet radiation, use only in enclosed equipment designed for this lamp type.
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.
Storage Instructions: Store in well-ventilated place.

According to the US Environmental Protection Agency's CFL cleanup guidelines at www.epa.gov/cfl:

Before Cleanup
•Have people and pets leave the room.
•Air out the room for 5-10 minutes by opening a window or door to the outdoor environment.
•Shut off the central forced air heating/air-conditioning system, if you have one.
•Collect materials needed to clean up broken bulb: stiff paper or cardboard; sticky tape; damp paper towels or disposable wet wipes (for hard surfaces); and a glass jar with a metal lid or a sealable plastic bag.

During Cleanup
•DO NOT VACUUM. Vacuuming is not recommended unless broken glass remains after all other cleanup steps have been taken. Vacuuming could spread mercury-containing powder or mercury vapor.
•Be thorough in collecting broken glass and visible powder. Scoop up glass fragments and powder using stiff paper or cardboard. Use sticky tape, such as duct tape, to pick up any remaining small glass fragments and powder. Place the used tape in the glass jar or plastic bag. See the detailed cleanup instructions for more information, and for differences in cleaning up hard surfaces versus carpeting or rugs.
•Place cleanup materials in a sealable container.

After Cleanup
•Promptly place all bulb debris and cleanup materials, including vacuum cleaner bags, outdoors in a trash container or protected area until materials can be disposed of. Avoid leaving any bulb fragments or cleanup materials indoors.
•Next, check with your local government about disposal requirements in your area, because some localities require fluorescent bulbs (broken or unbroken) be taken to a local recycling center. If there is no such requirement in your area, you can dispose of the materials with your household trash.
•If practical, continue to air out the room where the bulb was broken and leave the heating/air conditioning system shut off for several hours.

However, if you are concerned about your health after cleaning up a broken fluorescent lamp, consult your local poison control center by calling 1-800-222-1222. You can call your center any time you have questions or in an emergency. You can also consult your physician about potential health effects from mercury exposures.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Threshold Value Limits (TVL):

Chemical Name	CAS Number	Exposure Limits in Air (mg/cubic m) ACGIH (TLV)	OSHA (PEL)
Glass (soda lime)	---	10.0 (2)	15.0 (2)
Glass (barium alkalai silicate)	---	10.0 (2)	15.0 (2)
Glass (alkalai alkaline earth silicate)	---	10.0 (2)	15.0 (2)
(1, 4) Mercury	7439-97-6	0.025	0.1 Ceiling
Aluminum Oxide	001-344-281	10.0 (2)	15.0 (2)

Fluorescent Phosphor and cathodes may contain:	---	10.0 (2)	15.0 (2)
(3) Barium Compounds (as Ba dust)	7440-39-3	0.5	0.5
(3) Magnesium (as dust)	7439-95-4	10.0 (2)	15.0 (2)
(3) Zinc (as dust)	7440-66-6	10.0 (2)	15.0 (2)
Fluoride (as F)	---	2.5	2.5
(3) Manganese (as dust)	7439-96-5	0.2	5.0 Ceiling
(3) Tin (as dust)	7440-31-5	2.0	2.0
(3) Yttrium Oxide (as Y dust)	7440-65-5	1.0	1.0
(3) Antimony (as dust)	7440-36-0	10.0 (2)	15.0 (2)
Tungsten (as dust)	7440-33-7	5	---
(3) Calcium (as dust)	---	10.0 (2)	15.0 (2)
(3) Europium (as dust)	7440-53-1	10.0 (2)	15.0 (2)
(3) Cerium (as dust)	7440-45-1	10.0 (2)	15.0 (2)
(3) Terbium (as dust)	7440-27-9	10.0 (2)	15.0 (2)
(3) Aluminum (as dust)	7429-90-5	10.0 (2)	15.0 (2)
(3) Strontium (as dust)	7440-24-6	10.0 (2)	15.0 (2)
6" Curvalume® U-shaped Lamps contain a center support strap consisting of all, or a portion of the following:	-----	Within permissible exposure levels	
Carbonic Acid, Polymer with 4,4'-(1-methylethylidene) bis (2,6-dibromophenol) and 4,4'-(1- methylethylidene) bis [phenol]	32844-27-2		
Fiber Glass	1333-86-4		
Titanium Dioxide	13463-67-7		

(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.

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(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).]

Personal Protective Equiment: OSHA specified cut and puncture-resistant gloves are recommended for dealing with broken lamps.
Eye Protection: OSHA specified safety glasses, goggles or face shield are recommended if lamps are being broken.
Skin Protection: After handling broken lamps, wash hands and face thoroughly before eating, drinking, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.
Respitory 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.

VIV. PHYSICAL AND CHEMICAL PROPERTIES

NOT APPLICABLE FOR LAMPS

X. STABILITY AND REACTIVITY

NOT APPLICABLE FOR LAMPS

XI. TOXICOLOGICAL INFORMATION

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.

XII. ECOLOGICAL INFORMATION

XIII. DISPOSAL CONSIDERATIONS

LEDVANCE LLC recommends that all mercury-containing lamps be recycled. For a list of lamp recyclers and to obtain state regulatory disposal information, log onto www.lamprecycle.org.

It is the responsibility of the waste generator to ensure proper classification and disposal 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.

Lamps that 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 1 (Procedures for Linear Fluorescent Lamp Sample Preparation and the TCLP) testing protocol, ECOLOGIC® lamps, marked "ECO," pass the TCLP test.

*NEMA (National Electrical Manufacturers Association) standard may be obtained from NEMA, 1300 North 17th Street, Suite 900, Arlington, VA 22209.

XIV. TRANSPORTATION INFORMATION

These lamps meet the general dangerous goods criteria for exception from requirements issued with internationally adopted UN Recommendations on the Transport of Dangerous Goods (Rev. 18) subsection 1.1.1.9 "Lamps containing dangerous goods". The quantity of dangerous goods contained in a single lamp is far below 1 g, retail packages of LEDVANCE do not exceed the regulatory limit value of 30 g for mercury.

Dangerous Goods Regulation

Mode of transport	*Mercury per package > 30 g*	*Dangerous Goods Regulation (DGR) Classification*	*Proper Shipping*
Ground Sea	Not relevant	DGR Special Provision 366	Not subject to dangerous goods regulation.
Air	No	IATA-DGR 1.2.11	Not subject to dangerous goods regulation.
	Yes	Class UN3506	Mercury contained in manufactured articles

XV. REGULATORY INFORMATION

LEDVANCE, LLC is committed to compliance with all applicable US and Canadian environmental standards and regulations. In addition, we strive to meet international standards requested by our customers, including the European Union's Directive for the Restriction of Hazardous Substances (RoHS).

All applicable SYLVANIA branded lamps meet the European Union's Directive number 2002/95/CE, Restriction of Hazardous Substances (RoHS) which is referenced in California AB1109 and other state laws. In addition, all of our Light

Emitting Diode (LED) retrofit lamps, retrofit kits and ballasts are compliant with the EU Directive 2011/65/EU per Annex III section 2(b)(4).

EU Regulation No 1907/2006 ("REACH") is a European Directive that has not be adopted in the US. A copy of our conformity letter for the EU is available.

Furthermore, LEDVANCE LLC is in compliance with all state and provincial regulations that require manufacturer-operated lamp recycling of mercury-containing lamps in the US and Canada. LEDVANCE LLC meets its obligations through participation in state-run (or provincial-run), or industry-operated recycling programs available to covered entities under these laws.

Lastly, the lighting industry has determined that lamps are not subject to labeling requirements of California's Prop 65 due to limited consumer exposure.

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XVI. OTHER INFORMATION

Although LEDVANCE, LLC attempts to provide current and accurate information herein, it makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage or injury of any kind which may result from, or arise out of, the use of/or reliance on the information by any person.

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In case of questions please call: EH&S Specialist 978-570-3000

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