

SYLVANIA brand LED Luminaires, manufactured by LEDVANCE, LLC, 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 LEDVANCE, LLC as a courtesy to its customers.

I. IDENTIFICATION		
Trade Name (as labeled):	SYLVANIA LED	
	This data sheet covers all LED luminaire types (with lithium metal battery packed in equipment).	
Manufacturer:	LEDVANCE, LLC 200 Ballardvale Street Wilmington, MA 01887 978-570-3000	
Emergency Contact:	EH&S Specialist 978-570-3000	
II. HAZARD IDENTIFCATION		
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Warning!

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LUMINAIRES THAT ARE INTACT AND ARE USED AS INTENDED.

Warning! Risk of exposure to electric shock hazard if luminaire is broken while connected to power. Inner light components may continue to operate with a broken outside optic. Disconnect luminaire from power before attempting to replace.

Normal precautions should be taken when handling any broken luminaire components. Avoid contact with skin and use gloves to handle broken glass, plastic or metal components. Apply normal first aid if lacerations occur when handling of broken luminaires.

Avoid prolonged eye exposure to direct light from LEDs, especially for fixtures with high light output. Injury may occur if product is changed or damaged resulting in lengthy direct exposure to the eyes of unfiltered light from LEDs.

These light fixtures contain rechargeable Nickel Cadmium or Lithium Ion batteries; they may be categorized as dangerous goods during transportation when Lithium Ion batteries are used. Please check product labels and/or installation manuals for disposal/recycle instructions, or consult with appropriate contacts in your federal, state, or local governments for disposal guidelines and regulations. For additional information, consult with your LEDVANCE contact.

Storage: N/A

III. COMPOSITION – INFORMATION ON INGREDIENTS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO EMERGENCY LUMINAIRES THAT ARE INTACT AND ARE USED AS INTENDED.

SYLVANIA brand LED luminaires are lighting equipment that consist of a LED light source, and electrical, mechanical and optical components, and a battery backup unit that includes rechargeable (Ni Cd or Li Ion) batteries and an emergency power driver. Some examples of SYLVANIA LED emergency luminaires are edge lit panels, troffers, high bays, wall packs, and vapor tight linear luminaires.

Composition:

Electrical Components:

LED Luminaires with emergency power backup include several electrical/electronic components such as LED drivers/power supplies and transformers, emergency power driver, wires and sockets. They may also include light or motion detectors. These parts are essentially similar, but not identical, to those used throughout the electronics industry for other common consumer electronic equipment, and they are not considered hazardous.

<u>Rechargeable Battery Pack</u>: Rechargeable battery packs consist of Ni-Cd or Li Ion rechargeable batteries, which are enclosed in the emergency driver unit or provided as a separate unit.

Light Source:

LED luminaires contain an array of solid-state light emitting diodes (LEDs) mounted on a metal or plastic printed wiring board, which functions as the light-generating source. The LED's composition consists of metals, phosphor, plastics and InGaN (Indium Gallium Nitride) semiconductor chip. Due to their insolubility and inertness, these materials do not present a significant hazard.

Mechanical Components:

LED Luminaires usually include metal or plastic housing, and other structures that support other components in the fixture.

Optical Components:

LED luminaires also contain optical components such reflectors, refractors (diffusers/lenses), shields and baffles. Materials used are aluminum, plastic and glass and are not considered hazardous.

IV. EMERGENCY AND FIRST AID PROCEDURES:

In case of cuts due to sharp edges of broken luminaire:

Skin: Wash with soap and water. Treat lacerations using standard first aid procedures. Seek medical attention as needed.

In case of battery rupture or leakage:

Risk of exposure will only occur if the battery cell is mechanically, thermally, or electrically abused and the enclosure is compromised. If this occurs, exposure to electrolyte solutions contained within the battery cell may occur by inhalation, eye contact, skin contact and ingestion.

Eyes: Wash affected eye with lukewarm water for at least 30 minutes. Rinse with saline solution if possible. Seek medical attention.

Skin: Wash affected area with lukewarm water for at least 30 minutes. If irritation or pain persists, seek medical attention.

Ingestion: Seek medical attention.

Inhalation: Move victim to fresh air and remove source of contamination from area. Seek medical attention

V. FIRE-FIGHTING MEASURES:

<u>Flammability</u>: These fixtures are non-flammable. Under extreme heat, some material such as plastic or glass lenses or diffusers may melt or crack. Exposing battery cells to excessive heat, fire or over voltage condition may cause a leak, fire, hazardous vapors and hazardous decomposition products.

<u>Fire Extinguishing Materials</u>: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unusual Fire and Explosion Hazards:

Materials may be electrically conductive.

When exposed to high temperature, toxic fumes may be released from broken fixtures.

Damaged or opened cells or batteries can result in rapid heating and the release of flammable vapors.

VI. ACCIDENTAL RELEASE MEASURES:

ONLY APPLICABLE FOR BROKEN LUMINAIRES

Pieces of broken fixture components may have sharp edges and fine particulate matter can be generated. Sweep up loose material while wearing eye protection, respiratory protection, and gloves as needed to prevent irritation and/or lacerations. Place gathered material in an impermeable container and label appropriately.

ONLY APPLICABLE IN CASE OF BATTERY CELL RUPTURE OR LEAKAGE

Batteries in emergency luminaires are not expected to expose users to hazardous material under normal use. In the rare event of battery rupture or leakage, contain the spill and cover spill or leakage with dry sand. Rubber gloves must be used to handle all battery components.

Avoid inhalation of any vapors that may be emitted.

Damaged batteries that are not hot or burning should be placed in a sealed plastic bag or container and disposed of as described in section XIII below.

VII. SPECIAL HANDLING INFORMATION

Use common sense and good handling practices to avoid fixture breakage.

APPLICABLE FOR BROKEN LUMINAIRES AND/OR RUPTURED BATTERY CELLS

Electric Shock Hazard: Ensure broken luminaire is disconnected from power prior to handling.

<u>Ventilation</u>: 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.

<u>Respiratory Protection:</u> 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.

<u>Eye Protection</u>: OSHA specified safety glasses, goggles or face shield are recommended if fixtures are broken or batteries are damaged.

<u>Protective Clothing</u>: OSHA specified cut and puncture-resistant gloves are recommended for dealing with broken luminaires or damaged batteries.

<u>Hygienic Practices</u>: After handling broken fixtures or damaged batteries, wash thoroughly before eating, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

A flammability hazard exists if the package/article is damaged. Do not short circuit, crush or disassemble battery.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Luminaire related Information:

Eye Protection:

If a fixture is damaged in a manner where direct exposure to the LED light emissions is possible and can cause uncomfortable lighting levels, remove power from the fixture, and repair or replace the damaged portion before returning it to service.

If service personnel need to work with powered fixture without light diffusers and filters installed, appropriate light filtering eyewear should be used.

OSHA specified safety glasses, goggles or face shield are recommended if fixtures are being broken.

<u>Personal Protective Equipment:</u> OSHA specified cut and puncture-resistant gloves are recommended for dealing with broken luminaires.

<u>Skin Protection</u>: After handling broken luminaires, wash hands and face thoroughly before eating, drinking, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

<u>Respiratory Protection:</u> 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.

Battery related information:

<u>Eye Protection</u>: None needed under normal conditions. If handling damaged or broken batteries use chemical splash goggles.

<u>Skin Protection</u>: None needed under normal conditions. If battery case is damaged use rubber or plastic gloves. <u>Respiratory Protection</u>: None required under normal conditions. If battery is ruptured and concentrations of components are known to exceed PEL use NIOSH or MSH approved respiratory protection.

<u>General Hygiene Considerations</u>: Handle batteries carefully to avoid damaging the case. Do not allow metallic articles to contact the battery terminals during handling. Avoid contact with the internal components of the battery.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Solid Odor: None Boiling Point: None Volatile by Weight: Not determined Sublimes at: Not applicable/determined Evaporation Rate: 0 Vapor Pressure: Negligible at room temp. Vapor Density: Negligible at room temp. Solubility in Water: Insoluble. Density: Not applicable

Luminaire related information:

Reactivity:	None known.
Chemical Stability:	Stable

Battery related information:

Reactivity: Stable under recommended storage and handling conditions. Chemical Stability: Stable under normal conditions. Conditions to avoid: Avoid exposing battery to high temperatures. Do not incinerate, deform, mutilate, crush, pierce, short circuit or disassemble. Incompatible materials: Strong oxidizing agents, strong acids, strong bases.

XI. TOXICOLOGICAL INFORMATION

Carcinogenicity: Some components within the LED Driver of the Luminaire may contain carcinogens listed by IARC, but these quantities typically are well below 0.1% of the total product weight.

Irritation related to damaged batteries: No toxicological impacts are expected under normal use conditions. Risk of irritation only occurs if battery cells are mechanically, thermally or electrically abused and the enclosure is compromised. The electrolytes contained in batteries can irritate eyes with any contact if released. Prologned contact of electroytes with lung tissue, skin or mucous membranes may cause irritation.

XII. ECOLOGICAL INFORMATION

No ecological impact expected under normal use conditions, and when appropriate disposal and battery recycling procedures are used.

XIII. DISPOSAL CONSIDERATIONS

For disposal of these luminaires in EU-states, apply European Directive 2002/96/EC "WEEE" (Waste, Electrical and Electronic Equipment). In non-EU-states, disposal must comply with national, state and local laws and regulations. For more information, ask your LEDVANCE contact directly.

Battery cells must be collected separately from other waste and must be recycled. Never incinerate batteries or dispose as landfill. For more information contact <u>www.call2recycle.org</u> or 1-800-822-8837.

XVI. TRANSPORTATION INFORMATION

Lithium and lithium ion cells and batteries are regulated in the U.S. in accordance with Part 49 of the Code of Federal Regulations, (49 CFR Sections 105-180) of the U.S. Hazardous Materials Regulations. Transportation of luminaires with emergency battery backup units that contain Lithium Ion batteries must be in compliance with regulations that include special identification and labeling. For more information, ask your LEDVANCE contact directly.

For shipment, dangerous goods declaration may be required for UN 3091 as follows:

Mode of transport	Classification	Provision	Remarks
Air IATA-DGR	UN 3091, Hazard Class 9, Lithium metal battery packed with equipment	IATA PI970	The number of cells or batteries in each package must not exceed the appropriate number for the equipment's operation plus two spares Each package shall be capable of withstanding a 1,20 m drop test
Road / Rail DOT 49 CFR		173.185 c	
Road ADR		SP 188	
Rail RID			Additionally for aerial transport, special text required in air waybill.
Sea IMDG-Code			

XVII. REGULATORY INFORMATION

RoHS:

All SYLVANIA and OSRAM Luminaire types listed above meet the EC directive Restriction of Hazardous Substances: (RoHS II) Directive 2011/65/EU.

<u>TSCA</u>: Ingredients in typical rechargeable batteries are listed on the US Toxic Substances Control Act (TSCA) inventory.

<u>40 CFR part 273</u>: Used nickel cadmium (Ni-Cd) batteries are managed as Universal Waste. The Universal Waste Rule prohibits handlers (e.g., contractors) from disposing of waste Ni-Cd batteries and further indicates that these batteries must be sent for recycling.

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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