Compact Fluorescent Lamp Material Information Sheet

Material Safety Data Sheet (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 Compact Fluorescent Lamps. No material contained in a lamp is released during normal use and operation.

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

1. PRODUCT AND COMPANY IDENTIFICATION

Tospo Compact Fluorescent Lamp

Hengdian Group Tospo Lighting Co.,Ltd.
Hengdian Electronics Industrial Zone, Dongyang, Zhejiang 322118, P.R.China
Tel: +86-571-87950110
Fax: +86-571-87990555
www.tospolighting.com

2. LAMP MATERIALS AND HAZARDOUS INGREDIENTS

Glass & Metal

The glass tube used in a standard compact 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 lamp bases are generally nickel-plated copper or nickel-plated Aluminum. The coils in the lamps (called filaments or cathodes) are made of tungsten. An emission material covers the tungsten coil. The emission materials consists of triple oxide (BaO, CaO, SrO) + ZrO2 in a quantity of 4-12 mg/lamp depending on type. None of these materials would present a hazard in the event of breakage of the lamp, aside from the obvious ones due to broken glass. Some fluorescent lamps use an external coating of polycarbonate to provide a shatter-resistant coating.

Phosphor

The 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. The phosphor components may vary slightly depending on the color of the lamp (SPX30, SPX35, etc.). Compact fluorescent lamps typically have a maximum of 1.5 grams of phosphor. Total phosphor weight will vary by lamp size and type.

Mercury

Mercury is present in small amounts in all fluorescent lamps. The amount of mercury present (typically 5 mg or less)

in any given compact fluorescent lamp will vary depending on the lamp type. The amount is lower than that from several years ago, and Tospo is currently working to further lower the amounts of mercury used in its fluorescent lamp products.

Electronic Ballast for Self-Ballasted Compact Fluorescent Lamp

The electronic ballast is built into the lamp housing. The ballast consists of parts that are essentially similar, but not identical, to those used throughout the electronics industry for other common consumer articles.

Plastic Material

The plastic housing is typically made of PBT (Polybutylene-terephthalate) or PET (Polyethylene- terephthalate) fire retarded plastic with a bromine-containing polymer and antimony oxide. The plastic housing is glass fiber filled. This product consists primarily of high molecular weight polymers that are not hazardous.

3. HEALTH CONCERNS

Phosphor

Except for small changes, it is essentially the same phosphor that has been in use in our lamps for over twenty 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 reported in humans by any of these routes during the many years of its manufacture and use. The phosphor is somewhat similar to the inert mineral apatite (calcium phosphate-fluorides) that occur in nature.

Antimony, manganese, yttrium and tin compounds are characterized by OSHA as hazardous chemicals, as are most metals. 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 compact fluorescent lamps should result in significant exposures to the individual. Where a large quantity of lamps is intentionally broken, for example, in a drum-top crusher, work should be done in a well-ventilated area, and local exhaust ventilation or personal protective equipment may be needed. Also, appropriate industrial hygiene monitoring and controls should be implemented to minimize airborne levels or surface contamination. Tospo recommends lamp recycling when large quantity lamp disposal is required. See: www.lamprecycle.org for a list of lamp recyclers.

UV

The Ultraviolet energy emitted by compact fluorescent lamps complies with the Photobiological safety requirements in IESNA RP-27.1 & IESNA RP27.3. (CFL lamps also comply with CIE S009: 2002.)

4. DISPOSAL CONCERNS

TCLP

A Toxicity Characteristic Leaching Procedure (TCLP) test conducted on traditional compact fluorescent lamp designs for mercury could possibly cause the lamps to be classified as a hazardous waste due to the mercury content or lead content (in the case of screw-based compact fluorescent lamps). While small numbers of these lamps placed in ordinary trash may not appreciably affect the nature or method of disposal of the trash, under many circumstances disposal of large quantities may be regulated. Lamp recycling is recommended for large quantity disposal. Review your waste

handling practices to assure that lamps are disposed properly and 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.

Electronic Ballast

Traditional Electronic Ballast screw-based compact fluorescent lamps would most likely fail the TCLP test for Lead. Dispose in accordance with local regulations; recycling is recommended for large quantity disposal. Lead-free Ballasts meet the EC directive 2002/95/EC for RoHS (Restriction of Hazardous Substances).

Plastic Material

The plastic material used in a compact fluorescent lamp can be recycled during the lamp recycling process.

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GP Batteries

Material Safety Data Sheet for Manganese Dioxide Button Cell

Document number: BQS3000 Revision: 0 1 of 4

Note: Blank spaces are not permitted if any item is not applicable or no information is available, the space must be marked to indicate that.

Section I- Information of Manufacturer

Manufacturer's Name GP Batteries International Ltd.	Emergency Telephone Number
Address (Number, Street, City, State, and ZIP Code) 8/F GP Building, 30 Kwai Wing Road,	Telephone Number for information 852-2484-3333
Kwai Chung, N.T. H.K.	Date of prepared and revision March 23, 2009
	Signature of Preparer (optional)

Section II - Hazardous Ingredients/Identity Information

Hazardous Components

Description:	CAS#	EINECS NO.	Approximate % of total weight
Manganese dioxide	1313-13-9	215-202-6	<36 Wt%
Zinc	7440-66-6	231-175-3	<13 Wt %
Mercury	7439-97-6	231-106-7	<0.58 Wt %
Lead	7439-92-1	231-106-7	<0.0066 Wt %
Cadmium	7440-43-9	231-152-8	0
Sodium hydroxide and potassium hydroxide mixture, 30-35% solution	\	\	<16 Wt%
Cr+6	\	\	0
PBB	\	\	0
PBDE	\	\	0
Phthalate	\	\	0
Others	\	\	<51 Wt%

Section III – Physical/Chemical Characteristics

Form N.A.	Specific Gravity (H2O =1) N.A.
Boiling Point N.A.	Melting Point
Vapor Pressure (mm Hg) N.A.	Evaporation Rate (Buty1 Acetate=1) N.A.
Vapor Density (AIR=1) N.A.	pH N.A.
Solubility in Water N.A.	Appearance and Odor N.A.

Section IV-Hazard Classification

N.A.

Section V – Reactivity Data

Stability Yes= (X)	Unstable ( )	Conditions to Avoid
	Stable (X)	

Incompatibility (Materials to Avoid)

Hazardous Decomposition or By products

When heated, battery may emit hazardous vapour of KOH / NaOH and Hg

Hazardous Reactions	May Occur ( )	Conditions to Avoid

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Yes = (X)	Will Not Occur (X)	

Section VI – Health Hazard Data

Route(s) of Entry Yes = (X)	Inhalation?	Skin?	Ingestion?
	(N.A.)	(N.A.)	(N.A.)

Health Hazard (Acute and Chronic) / Toxicological in formation

In case of electrolyte leakage, skin will be itchy when contaminated with electrolyte.

In contact with electrolyte can cause severe irritation and chemical burns.

Inhalation of electrolyte vapors may cause irritation of the upper respiratory tract and lungs.

Section VII – First Aid Measures

Firs aid Procedures

If electrolyte leakage occurs and makes contact with skin, wash with plenty of water immediately.

If electrolyte comes into contact with eyes, wash with copious amounts of water for fifteen minutes, and contact a physician.

If electrolyte vapors are inhaled, provide fresh air and seek medical attention if respiratory irritation develops. Ventilate the contaminated area.

Section VIII – Fire and Explosion Hazard Data

Flash Point (Method Used)	Ignition temp.	Flammable Limits	LEL	UEL
N.A.	N.A.	N.A.	N.A.	N.A.

Extinguishing Media

Carbon Dioxide, Dry Chemical or Foam extinguishers

Special Fire Fighting Procedures

N.A.

Unusual Fire and Explosion Hazards

Do not dispose of battery in fire – may explode.

Do not short – circuit battery – may cause burns.

Section IX – Accidental Release or Spillage

Steps to Be Taken in Case Material is Released or Spilled

Batteries that are leaking should be handled with rubber gloves.

Avoid direct contact with electrolyte.

Wear protective clothing and a positive pressure Self-Contained Breathing Apparatus (SCBA).

Section X – Handing and Storage

Safe handing and storage advice

Batteries should be handled and stored carefully to avoid short circuits.

Do not store in disorderly fashion, or allow metal objects to be mixed with stored batteries.

Never disassemble a battery.

Do not breathe cell vapors or touch internal material with bare hands.

Keep batteries between -30°C and 35°C for prolong storage.

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Section XI – Exposure Controls / Personal Protection

Occupational Exposure Limits :	LTEP N.A.	STEP N.A.	
Respiratory Protection (Specify Type)	N.A.		
Ventilation	Local Exhausts N.A.	Special N.A.	
	Mechanical (general) N.A.	Other N.A.	
Protective Gloves	N.A.	Eye Protection N.A.	
Other Protective Clothing or Equipment	N.A.		
Work / Hygienic Practices	N.A.		

Section XII – Ecological Information

N.A.

Section XIII – Disposal Method

Dispose of batteries according to government regulations.

Section XIV – Transportation Information

GP batteries are considered to be “Dry cell” batteries and are unregulated for purposes of transportation by the U.S. Department of Transportation (DOT), International Civil Aviation Administration (ICAO), International Air Transport Association (IATA) and International Maritime Dangerous Goods Regulations (IMDG). The only DOT requirement for shipping these batteries is special provision 130 which states: “Batteries, dry are not subject to the requirements of this subchapter only when they are offered for transportation in a manner that prevents the dangerous evolution of heat (For example, by the effective insulation of exposed terminals). The only requirements for shipping these batteries by ICAO and IATA is Special Provision A123 which states: "An electrical battery or battery powered device having the potential of dangerous evolutions of heat that is not prepared so as to prevent a short-circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals; or in the case of equipment, by disconnection of the battery and protection of exposed terminals) is forbidden from transportation." The international Maritime Dangerous Goods Code (IMDG) regulate them for ocean transportation under Special Provision 304 which says : Batteries, dry, containing corrosive electrolyte which will not flow out of the battery if the battery case is cracked are not subject to the provision of this Code provided the batteries are securely packed and protected against short-circuits. Example of such batteries is: alkali-manganese, zinc-carbon, and nickel metal hydride and nickel-cadmium batteries.

Non-dangerous goods.

Such battery has been packed in inner packaging in such a manner as to effectively prevent short circuit and movement that could lead to short circuit.

Section XV – Regulatory Information

Special requirement be according to the local regulatory.

Section XVI – Other Information

The data in this Material Safety Data Sheet relates only to the specific material designated herein.

Section XVII – Measures for fire extinction

In case of fire, it is permissible to use any class of extinguishing medium on these batteries or their packing material. Cool exterior of batteries if exposed to fire to prevent rupture.

Fire fighters should wear self-contained breathing apparatus.

Model No.	IEC
A76	LR44
A76P	LR44
162	LR58
164	LR621
171	LR69
177	LR626SW
186	LR1142
189	LR54
189E	LR54
191	LR1120
192	LR41
PX625A	LR9
10A	\
11A	\
23A	\
29A	\
26A	\
27A	\
476A	4LR44
220A	10F15