



# T8 Linear & U-Bend Safety Specifications

## Material Safety Data Sheet (MSDS) Linear Fluorescent T8 Lamps MSDS-001 – Issue Date: 1/2/05

### INFORMATION AND APPLICABILITY

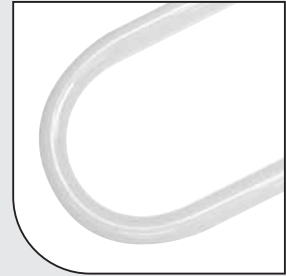
Technical Consumer Products believes that under the Occupational Safety and Health Administration (OSHA) Hazards Communications Standard, a lamp (light bulb) is exempted as an "article", and that as such, does not require an MSDS. The original OSHA Standard defined an article as something that:

- (1) is formed to a specific shape and design
- (2) has end use functions dependent upon its shape and design
- (3) does not release or otherwise result in an exposure to a hazardous chemical under normal conditions of use.

In February 1994, OSHA amended the Hazard Communication Standard and modified part 3 of the above to read:

- (3) does not release more than very small quantities of a hazardous chemical under normal conditions of use. State and local regulations also contain similar exemptions for such articles.

Materials contained in the lamp are not released during normal use and operation. The following information is provided as a courtesy to our customers.



### PRODUCT AND COMPANY INFORMATION

Description: TCP T8 Linear Fluorescent  
 Manufacturer: TCP, Inc. • Shanghai, Jensen LTD. • 325 Campus Drive • Aurora, Ohio 44202 • 1-800-324-1496

### COMPOSITION/INFORMATION ON INGREDIENTS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT.  
 If the lamp is broken, the following materials may be released:

Chemical Name	CAS Number	% by Wt.	Exposure Limits in Air (mg/M <sup>3</sup> )	
			ACGIH (TLV)	OSHA (PEL)
Glass (soda-lime)	-----	75 - 95	10 <sup>(2)</sup>	15 <sup>(2)</sup>
Mercury <sup>(1,4)</sup>	7439-97-6	0.002 – 0.02	0.025	0.1 Ceiling
Lead Oxide <sup>(1,3,4)</sup>	1317-36-8	0.2 – 2.0	0.05	0.05
Aluminum Oxide	001-344-281	0 – 2.0	10 <sup>(2)</sup>	15 <sup>(2)</sup>
<b>Fluorescent Phosphor and Cathodes may contain:</b>				
• Fluoride (as F)	-----	0 – 0.1	2.5	2.5
• Manganese <sup>(3)</sup> (as dust)	7439-96-5	0 – 0.1	0.2	5.0 Ceiling
• Tin <sup>(3)</sup> (as dust)	7440-31-5	0 – 0.1	2.0	2.0
• Yttrium <sup>(3)</sup> (as dust)	7440-65-5	0 – 0.5	1.0	1.0
• Barium <sup>(3)</sup> (as dust)	7440-39-3	<0.1	0.5	0.5
• Tungsten <sup>(3)</sup> (as dust)	7440-33-7	<0.1	1	15 <sup>(2)</sup>
• Strontium <sup>(3)</sup> (as dust)	7440-24-6	0 – 0.1	10 <sup>(2)</sup>	15 <sup>(2)</sup>
• Magnesium <sup>(3)</sup> (as dust)	7439-95-4	0 – 0.1	10 <sup>(2)</sup>	15 <sup>(2)</sup>
• Calcium <sup>(3)</sup> (as dust)	-----	0 – 0.1	10 <sup>(2)</sup>	15 <sup>(2)</sup>
• Antimony <sup>(3)</sup> (as dust)	7440-36-0	0 – 0.1	10 <sup>(2)</sup>	15 <sup>(2)</sup>
• Zinc <sup>(3)</sup> (as dust)	7440-66-6	0 – 0.1	10 <sup>(2)</sup>	15 <sup>(2)</sup>
• Cerium <sup>(3)</sup> (as dust)	7440-45-1	0 – 0.1	10 <sup>(2)</sup>	15 <sup>(2)</sup>
• Europium <sup>(3)</sup> (as dust)	7440-53-1	0 – 0.1	10 <sup>(2)</sup>	15 <sup>(2)</sup>
• Lanthanum <sup>(3)</sup> (as dust)	7439-91-0	0 – 0.1	10 <sup>(2)</sup>	15 <sup>(2)</sup>
• Terbium <sup>(3)</sup> (as dust)	7440-27-9	0 – 0.1	10 <sup>(2)</sup>	15 <sup>(2)</sup>
• Aluminum <sup>(3)</sup> (as dust)	7429-90-5	0 – 0.1	10 <sup>(2)</sup>	15 <sup>(2)</sup>
<b>U-Bend Lamps contain a center support strap consisting of all, or a portion of the following:</b>				
• 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	13463-677			

- (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).]

### PHYSICAL PROPERTIES Not applicable to intact lamp.



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## FIRE & EXPLOSIVE HAZARDS

**Flammability:** Non-combustible.

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

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

**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.

## HEALTH CONCERNS

**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 ingested, inhaled, or contacted with skin or eye:

**Glass** – Glass dust is considered to be physiologically inert and as such has an OSHA exposure limit of 15 mg/M<sup>3</sup> for total dust and 5 mg/M<sup>3</sup> for respirable dust. The ACGIH TLVs for particulates not otherwise classified are 10mg/M<sup>3</sup> for total dust and 3 mg/M<sup>3</sup> for respirable dust.

**Mercury** – Contact, inhalation, or ingestion may cause one or more of the following symptoms: skin irritation, eye irritation, cough, chest pain, dyspnea, bronchitis, pneumonitis, tremor, insomnia, indecision, irritability, fatigue, headache, weakness, stomatitis, salivation, GI tract disturbance, anorexia, weight loss, and proteinuria.

**Lead** – Contact, ingestion, or inhalation may cause one or more of the following symptoms: weakness, lassitude, insomnia, facial palor, pal eye, anorexia, weight loss, malnutrition, constipation, abdominal pain, colic, anemia, gingival lead lime, tremor, wrist paralysis, ankle paralysis, encephalopathy, kidney disease, eye irritation, and hypotension.

**Aluminum Oxide** – Alumina is a non-toxic material. Sharp-edged particles can irritate the eyes, skin, and respiratory system.

**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.

**Manganese** – Contact, ingestion, or inhalation may cause one or more of the following symptoms: Parkinson's, asthenia, insomnia, mental confusion, metal fume fever, dry throat, cough, chest tightness, dyspnea, rales, flu-like fever, low-back pain, vomiting, malaise, fatigue, and kidney damage.

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

**Yttrium** – Contact, ingestion, or inhalation may cause one or more of the following symptoms: eye irritation, pulmonary irritation, and possible liver damage.

**Barium (soluble compounds)** – Contact, ingestion, or inhalation may cause one or more of the following symptoms: eye irritation, skin irritation, upper respiratory system irritation, skin burns, gastroenteritis, muscle spasm, slow pulse, extrasystole, and hypokalemia.

**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.

**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.

## EMERGENCY & FIRST AID ACTIONS

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

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

**Inhalation** – If discomfort, irritation or symptoms of pulmonary involvement develops, remove from exposure and seek medical attention.

**Contact Skin** – Thoroughly wash affected area with mild soap or detergent and water for 15 minutes 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.

## PROCEDURES FOR DISPOSAL OF LAMPS

Technical Consumer Products 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](http://www.lamprecycle.org). If lamps are broken, ventilate the area where breakage occurred. Clean-up with a special mercury vacuum cleaner (not a standard vacuum cleaner) or other suitable means that avoids 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. A Toxicity Characteristic Leaching Procedure (TCLP) was conducted on these products showing a result of mercury content that is not considered hazardous waste. For field disposal the lead in the soldering is considered hazardous waste and must be disposed of by applicable federal, state, and local regulations.

## 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.

**Protective Clothing** – 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.

**Hygienic Practices** – After handling broken lamps, wash hands and face thoroughly before eating, smoking or handling tobacco products, applying cosmetics, or using toilet facilities.

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TCP, Inc

325 Campus Drive | Aurora, Ohio 44202 | P: 800-324-1496 | F: 330-995-6188 | [tci.com](http://tci.com)

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