

PHILIPS

Philips Lighting Company

MATERIAL SAFETY DATA SHEET

Page 1 of 3

Revised: 8/02

PRODUCT: ALTO™ Fluorescent Lamp T8/TL 70 Series

SECTION 1: MANUFACTURER

Manufacturer's Name and Address: Philips Lighting Company
A Division of Philips Electronics
North America Corporation
200 Franklin Square Drive
P.O. Box 6800
Somerset, NJ 08875

Emergency Telephone Number: (800) 424-9300 CHEMTREC
(732) 563-3197 Safety and Compliance
Other Information Calls: (800) PLC-BULB

SECTION 2: HAZARDOUS INGREDIENTS

	OSHA (PEL)		ACGIH (TLV)	% by Wt.
	mg/m ³		mg/m ³	
Phosphor Powder				
Nuisance Dust	15	10	Approx. 2.5	
Cerium Terbium				
Magnesium Aluminate*	N/A	10	Approx. .25	
Barium Magnesium Aluminate*	N/A	1.0	Approx. .5	
Yttrium Oxide (1314-36-9)	1.0	1.0	Approx. .5	
Antimony+ (7440-36-0)	.5	.5	Approx. .01	
Manganese+ (7439-96-5)	.5	.2	Approx. .02	
Calcium Phosphate (1306-06-5)	15	10	Approx. 1	
Mercury (7439-97-6)	.1	.025	<than 20 ppm	



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200 Franklin Square Drive
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Somerset, NJ 08875-6800
Tel: 732.563.3000

SECTION 2: HAZARDOUS INGREDIENTS(cont'd)

* PEL and TLV are given for Magnesium, Aluminum Oxide, and Yttrium, Barium Aluminate is not a soluble compound.

+These materials are tightly bound within the crystal matrix of the phosphor.

SECTION 3: CHEMICAL/PHYSICAL DATA

Not applicable. This item is a light bulb. The bulb is glass, the base is a coated aluminum. The coating is inert.

SECTION 4: FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION DATA NOT APPLICABLE -- under extreme heat, glass envelope might melt or crack.

SECTION 5: REACTIVITY DATA

Stability: Lamp is stable.

Polymerization: Not applicable.

Incompatibility: Glass will react with Hydrofluoric Acid.

SECTION 6: HEALTH HAZARD DATA

Not applicable to the intact lamp. Breakage of the lamp may result in some exposure to the phosphor powder dust and to a very little amount of elemental mercury vapor. No adverse affects are expected from occasional exposure to broken lamps, but as a matter of good practice, prolonged or frequent exposure should be avoided through the use of adequate ventilation during disposal of large quantities of lamps.

EMERGENCY FIRST AID: NORMAL FIRST AID PROCEDURE FOR GLASS CUTS IF SUCH OCCUR THROUGH LAMP BREAKAGE.

SECTION 7: PRECAUTIONS FOR SAFE HANDLING AND USE

Normal precautions should be taken for the collection of broken glass.

Waste Disposal Method: At the end of rated life, when this lamp is removed from service, it will be subjected to the current Toxic Characteristic Leaching Procedure (TCLP) prescribed by the Environmental Protection Agency. This test is used to determining whether an item is a hazardous waste or a non-hazardous waste under current E. P. A. definition. Philips Lighting will provide the test data on request. This result will allow the generator to evaluate all of the disposal options, which may be available in the particular state in which the generator's facility is located. The generator should check with federal, state and local officials for their guidance. In most states ALTO lamps are considered non-Hazardous subtitle D waste. Philips encourages recycling of its products by qualified recyclers.

SECTION 8: CONTROL MEASURES

Respiratory Protection: Appropriate dust mask should be used if large quantities of lamps are being broken for disposal.

Ventilation: Avoid inhalation of any airborne dust. Provide local exhaust when disposing of large quantities of lamps.

Hand and Eye Protection: Appropriate hand and eye protection should be worn when disposing of large quantities of lamps or handling broken lamps.

Section 9: Regulatory Status

As a product these mercury containing lamps being shipped in the manufacturer's original packaging are not regulated by air, truck or ocean shipment. As a waste, spent ALTO fluorescent lamps maybe regulated in various states and local communities. This material safety data sheet does not constitute "knowledge of the waste", in certain jurisdictions. TCLP data will be furnished upon request.

Date: 1/13/98 S09-98001
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MATERIAL SAFETY DATA SHEET

Revised: 6/01

PRODUCT: METAL HALIDE FAMILY

SECTION 1: MANUFACTURER

Manufacturer's Name and Address: Philips Lighting Company
A Division of Philips Electronics
North America Corporation
200 Franklin Square Drive
Somerset, NJ 08875

Emergency Telephone No.: (800) 424-9300 CHERMTREC
(732) 563-3197 Environmental

Other Information Calls: (607) 776-3311 Ext. 300

SECTION 2: HAZARDOUS INGREDIENTS

	OSHA (PEL) mg/m ³	ACGIH (TLV) mg/m ³	% by Wt.
Mercury (7439-97-6)	.1 Ceiling	.025 8 hr. TWA	Less than .03%
Iodine (7553-56-2)	1.0 mg/m ³ (.1 ppm ceiling)	1.0 mg/m ³ (.1 ppm ceiling)	Less than .02%
Sodium Iodide (NaI) (7681-82-5)		None Established	Less than .02%
Inert ingredients (Glass, Quartz, Metal)			Approx. 97.9% by wgt



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SECTION 3: PHYSICAL DATA

This item is a light bulb. Chemical characteristics are not applicable.

SECTION 4: FIRE AND EXPLOSION DATA

This item is a light bulb; it has no fire data. Under extreme heat, outer envelope might melt or crack.

SECTION 5: REACTIVITY DATA

Stability: Lamp is stable.
Incompatibility: Glass will react with hydrofluoric acid.
Polymerization: Will not occur.

SECTION 6: HEALTH HAZARD DATA

Not applicable to intact lamp. WARNING! These lamps can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes when envelope is broken unless adequate shielding or other safety precautions are used. Certain lamps that will automatically extinguish when the outer envelope is broken are available commercially.

The inner envelope is composed of quartz. Breakage of this envelope may result in some exposure to elemental mercury vapor or iodine compound vapors. No adverse effects are expected from occasional exposure to broken lamps. As a matter of good practice breakage should be avoided. Prolonged or frequent exposure to broken envelopes should be avoided through the use of adequate ventilation during disposal of large quantities of lamps.

EMERGENCY FIRST AID: NORMAL FIRST AID PROCEDURE FOR GLASS CUTS IF SUCH OCCUR THROUGH LAMP BREAKAGE.



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SECTION 7: PRECAUTIONS FOR SAFE HANDLING AND USE

Normal precautions should be taken for collection of broken glass.

WASTE DISPOSAL METHOD: The arc tube contains a small amount of mercury. A toxic characteristic leachate test conducted on based HID lamps for lead and/or mercury will cause the lamp to be classified as a hazardous waste for mercury and lead. These lamps will come under the Universal Waste Rule published by EPA on July 6, 1999. State regulations will vary. Check with local and state authorities. Philips Lighting Company recommends recycling of spent Metal Halide lamps. The lead used in the solder should pose little risk of exposure under normal use and handling.

SECTION 8: CONTROL MEASURES

Respiratory Protection: Appropriate dust mask should be used if large volumes of lamps are broken for disposal.

Ventilation: Avoid inhalation of any airborne dust. Provide local exhaust when disposing large quantities of lamps.

Hand and Eye Protection: Appropriate hand and eye protection should be worn when disposing of large quantities of lamps or handling broken lamps.

SECTION 9: REGULATORY INFORMATION

For Air Shipment: This lamp will require a manifest of dangerous goods if it is a 1000W or higher.



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Philips Lighting Company

MATERIAL SAFETY DATA SHEET

PRODUCT: INCANDESCENT LAMPS

Revised: 6/01

SECTION 1: MANUFACTURER

Manufacturer's Name and Address: Philips Lighting Company
A Division of North America Philips Corporation
200 Franklin Square Drive
P. O. Box 6800
Somerset, N. J. 08875

Emergency Telephone No.: (800) 424-9300 CHEMTREC
(732) 563-3197 Safety and Compliance
Other Information Calls: (800)-PLC BULB

SECTION 2: HAZARDOUS INGREDIENTS

	OSHA PEL	ACGIH TLV	PERCENTAGE
Lead + (7439-92-1)	.05mg/m ³	less than .1mg/m ³	approx. .025

+ Lead is found within the glass tubing inside the lamp and inside the solder.

SECTION 3: PHYSICAL/CHEMICAL DATA

This item is a glass light bulb. The base is generally aluminum, some applications use brass bases. Chemical characteristics not applicable.

SECTION 4: FIRE AND EXPLOSION DATA

This item is a light bulb. It has no fire data. Under extreme heat, bulb might crack or melt.



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Philips Electronics North America Corporation

200 Franklin Square Drive
P.O. Box 6800
Somerset, NJ 08875-6800
Tel: 732.563.3000

SECTION 5: REACTIVITY DATA

Stability: Lamp is stable
Incompatibility: Glass will react with Hydrofluoric Acid.
Base will react with acids.
Polymerization: Will not occur.

SECTION 6: HEALTH HAZARD DATA

Not applicable for the intact lamp, when power is off. When lamp is on, bulb gets hot to the touch.

EMERGENCY AND FIRST AID PROCEDURE: If glass cuts occur due to breakage of lamp, use normal first aid procedure.

SECTION 7: PRECAUTIONS FOR SAFE HANDLING AND USE

When replacing a lamp, be sure the power to the socket is turned off before removing old lamp.

Normal precautions should be taken for the collection of broken glass.

WASTE DISPOSAL METHOD: Under the Toxicology Characteristic Leachate Procedure (TCLP) promulgated by the U.S. Environmental Protection Agency (EPA), tests of used or spent incandescent lamps will fail the TCLP for lead if they contain lead solder. Under the Universal Waste Rule, lamps which fail the TCLP can be treated as a Universal Waste and sent for recycling rather than hazardous waste disposal. If treated under the UWR rules are much simpler and easier from a compliance standpoint. Check with your local and State Authorities for guidance.

Small numbers of these lamps may be covered under the Conditionally exempt small generator classification. Not all States accept this exemption, especially in the East. To determine your status check with your local or State authorities. Households are exempt from Federal hazardous waste jurisdiction, but individual states may vary. Customers should review their waste handling practices to assure that they are properly disposing of waste lamps.



Philips Lighting Company

MATERIAL SAFETY DATA SHEET

PRODUCT: HIGH PRESSURE SODIUM LAMPS

Revised 8/02

SECTION 1: MANUFACTURER

Manufacturer's Name and Address: Philips Lighting Company
A Division of Philips Electronics
North America Corporation
200 Franklin Square Drive
Somerset, NJ 08875

Emergency Telephone No.: (800) 424-9300 CHEMTREC
(732) 563-3197

Other Information Calls: (607) 776-3311 Ext. 300

SECTION 2: HAZARDOUS INGREDIENTS

	OSHA (PEL) mg/m ³	ACGIH (TLV) mg/m ³	% by Wt.
Sodium (7440-23-5)	2.0 8-TWA	Ceiling	less than .01
Mercury (743-97-6)	.1 Ceiling	.025 8 hr. TWA	Less than .02
Lead (7439-92-1)	.05		

SECTION 3: PHYSICAL DATA

This item is a glass light bulb; chemical characteristics are not applicable.

SECTION 4: FIRE AND EXPLOSION DATA

Fire and explosion data not applicable. Under extreme heat outer glass envelope might melt or crack. Inner arc tube is composed of polycrystalline alumina and is refractory material.

SECTION 5: REACTIVITY DATA

Stability: Lamp is stable.

Incompatibility: Glass envelope will react with hydrofluoric acid.

Polymerization: Not applicable

SECTION 6: HEALTH HAZARD DATA

Not applicable to intact lamp. The inner envelope is composed of polycrystalline alumina. Breakage of this envelope may result in some exposure to elemental sodium and mercury. No adverse effects are expected from occasional exposure to broken lamps. As a matter of good practice, breakage should be avoided. Prolonged or frequent exposure to broken envelopes should be avoided through use of adequate ventilation during disposal of large quantities of lamps.

EMERGENCY AND FIRST AID PROCEDURE: Normal first aid procedure for glass cuts if such occur through lamp breakage.

SECTION 7: PRECAUTIONS FOR SAFE HANDLING AND USE

Normal precautions should be taken for collection of broken glass.

Waste Disposal Method: At the end of rated life, when this lamp is removed from service, it will be subjected to the current Toxic Characteristic Leaching Procedure (TCLP) prescribed by the Environmental Protection Agency. This test is used to determining whether an item is a hazardous waste or a non-hazardous waste under current E. P. A. definition. These lamps would fail the TCLP test and would be considered hazardous under the Universal Waste Rules. Generators should evaluate all of the disposal options, which may be available in the particular state in which the generator's facility is located. The generator should check with federal, state and local officials for their guidance. Philips encourages recycling of its products by qualified recyclers

SECTION 8: CONTROL MEASURES

Respiratory Protection: None. NIOSH-approved respirator might be used if large volumes of lamps are being broken for disposal.

Ventilation: Avoid inhalation of any airborne dust.

Hand and Eye Protection should be worn when handling broken glass.

SECTION 9: REGULATORY INFORMATION

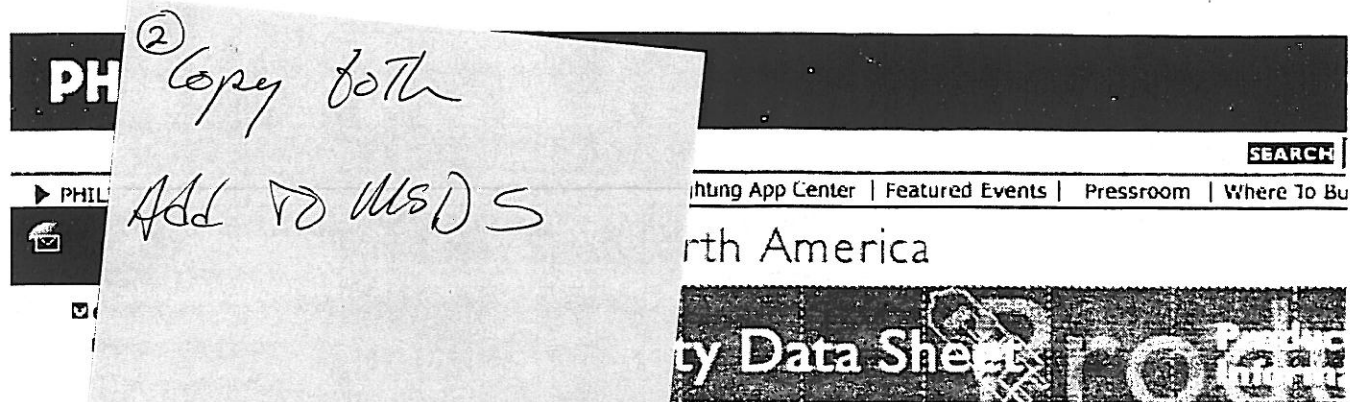
As a product these mercury containing lamps being shipped in the manufacturer's original packaging are not regulated by air, truck or ocean shipment. As a waste, these spent fluorescent lamps would be regulated in various states and local communities. This material safety data sheet does not constitute "knowledge of the waste", in certain jurisdictions.

PHILIPS

Prepared: 12/93

Revised: 8/02

S19-93001



3001

Resonant Lamp T8/TL 70 Series**TURER**

Address: Philips Lighting Company
A Division of Philips Electronics
North America Corporation
200 Franklin Square Drive
P.O. Box 6800
Somerset, NJ 08875

Emergency Telephone Number: (800) 424-9300 CHEMTREC
(732) 563-3197 Safety and C
Other Information Calls: (800) PLC-BULB

SECTION 2: HAZARDOUS INGREDIENTS**LAMP ASSEMBLY**

	OSHA(STEL) mg/m ³	ACGIH(TWA) mg/m ³	%
Phosphor Powder			
Nuisance Dust	15	10	A ₁
Cerium Terbium Magnesium Aluminate*	n/a	10	A ₁
Barium Magnesium Aluminate*	n/a	1.0	A ₁
Yttrium Oxide (1314-36-9)	1.0	1.0	A ₁
Antimony+(7440-36-0)	0.5	0.5	A ₁
Manganese+(7439-96-5)	0.5	0.2	A ₁
Calcium Phosphate (1306-06-5)	15	10	A ₁
Mercury (7439-97-6)	0.1	0.025	<

*PEL and TLV are given for Magnesium, Aluminum Oxide, and Yttrium, Barium Aluminate is not a soluble compound.

+These materials are tightly bound within the crystal matrix of the phosphor.

SECTION 3: PHYSICAL DATA

Not applicable. This item is a light bulb. The bulb is glass, the base is a coated aluminum. The coating is inert.

SECTION 4: FIRE AND EXPLOSION DATA

Not applicable. Under extreme heat, glass envelope might melt or crack.

SECTION 5: REACTIVITY DATA

Stability: Lamp is stable.

Incompatibility: Glass envelope will react with hydrofluoric acid.
Polymerization: Not applicable

SECTION 6: HEALTH HAZARD DATA

Not applicable to the intact lamp. Breakage of the lamp may result in some the phosphor powder dust and to a very little amount of elemental mercury adverse affects are expected from occasional exposure to broken lamps, but of good practice, prolonged or frequent exposure should be avoided through adequate ventilation during disposal of large quantities of lamps.

EMERGENCY FIRST AID: Normal first aid procedure for glass cuts if such occurs lamp breakage.

SECTION 7: PRECAUTIONS FOR SAFE HANDLING AND USE

Normal precautions should be taken for collection of broken glass.

Waste Disposal Method: At the end of rated life, when this lamp is removed service, it will be subjected to the current Toxic Characteristic Leaching Procedure (TCLP) prescribed by the Environmental Protection Agency. This test is used to determine whether an item is a hazardous waste or a non-hazardous waste under current E. P. A. definition. Philips Lighting will provide the test protocol and the result will allow the end user to evaluate all of the disposal options, which are available in the particular state in which the generator facility is located. Disposal is currently regulated in Minnesota, Vermont, Connecticut, Maine (mid 2002), incinerator counties of Florida. The generator should check with local and state authorities for their guidance. In most states ALTO lamps are considered non-hazardous waste. Philips encourages recycling of its products by qualified recyclers.

SECTION 8: CONTROL MEASURES

Respiratory Protection: Appropriate dust mask should be used if large quantities of lamps are being broken for disposal.

Ventilation: Avoid inhalation of any airborne dust. Provide local exhaust ventilation when disposing of large quantities of lamps.

Hand and Eye Protection: Appropriate hand and eye protection should be worn when disposing of large quantities of lamps or handling broken lamps.

SECTION 9: REGULATORY INFORMATION

As a product these mercury containing lamps being shipped in the manufacturer's original packaging are not regulated by air, truck or ocean shipment. As a product ALTO fluorescent lamps would be regulated in Minnesota, Connecticut, Vermont (will regulate disposal as of Mid 2002), and certain communities of Florida. ALTO lamps as non-hazardous in Tennessee requires a permit. Households in most States except Minnesota and Vermont. This material safety data sheet does not constitute "knowledge of the waste", in certain jurisdictions. TCLP data will be provided upon request.

Revised 8/02

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MSDS NUMBER: S09-01004**PRODUCT: PRODUCT: ALTO® Fluorescent T8 U-Bent Lamp F32 T8/TI****SECTION 1: MANUFACTURER**

Manufacturer's Name and Address:

Philips Lighting Company
A Division of Philips Electronic
North America Corporation
200 Franklin Square Drive
P.O. Box 6800
Somerset, NJ 08875

Emergency Telephone Number:

(800) 424-9300 CHEMTREC
(732) 563-3197 Environment
(800) PLC-BULB

Other Information Calls:

SECTION 2: HAZARDOUS INGREDIENTS**LAMP ASSEMBLY**

	OSHA(STEL) mg/m ³	ACGIH(TWA) mg/m ³	%
Phosphor Powder			
Nuisance Dust	15	10	A ₁
Cerium Terbium Magnesium Aluminate*	N/A	10	A ₁
Barium Magnesium Aluminate*	N/A	1.0	A ₁
Yttrium Oxide (1314-36-9)	1.0	1.0	A ₁
Antimony+ (7440-36-0)	0.5	0.5	A ₁
Manganese+ (7439-96-5)	0.5	0.2	A ₁
Calcium Phosphate (1306-06-5)	15	10	A ₁
Mercury (7439-97-6)	0.1	0.025	<

* PEL and TLV are given for Magnesium, Aluminum Oxide, and Yttrium, Bar Aluminate is not a soluble compound.

+These materials are tightly bound within the crystal matrix of the phosphor

SECTION 3: PHYSICAL DATA

Not applicable. This item is a light bulb. The bulb is glass, the base is a coal aluminum. The coating is inert.

SECTION 4: FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION DATA NOT APPLICABLE -- under extreme heat, glass might melt or crack.

SECTION 5: REACTIVITY DATA

Stability: Lamp is stable.
 Polymerization: Not applicable.
 Incompatibility: Glass will react with Hydrofluoric Acid.

SECTION 6: HEALTH HAZARD DATA

Not applicable to the intact lamp. Breakage of the lamp may result in some the phosphor powder dust and to a very little amount of elemental mercury adverse affects are expected from occasional exposure to broken lamps, but of good practice, prolonged or frequent exposure should be avoided through adequate ventilation during disposal of large quantities of lamps.

EMERGENCY FIRST AID: NORMAL FIRST AID PROCEDURE FOR GLASS CUTS OCCUR THROUGH LAMP BREAKAGE.

SECTION 7: PRECAUTIONS FOR SAFE HANDLING AND USE

Normal precautions should be taken for the collection of broken glass.

Waste Disposal Method: At the end of rated life, when this lamp is removed service, it will be subjected to the current Toxic Characteristic Leaching Procedure (TCLP) prescribed by the Environmental Protection Agency. This test is used to determine whether an item is a hazardous waste or a non-hazardous waste under current E. P. A. definition. Philips Lighting will provide the test protocol and the result will allow the end user to evaluate all of the disposal options, which are available in the particular state in which the generator facility is located. Disposal is currently regulated in Minnesota, Vermont, Connecticut, Maine (mid 2002), and incinerator counties of Florida. The generator should check with local and state agencies for their guidance. In most states ALTO lamps are considered non-hazardous waste. Philips encourages recycling of its products by qualified recyclers.

SECTION 8: CONTROL MEASURES

Respiratory Protection: Appropriate dust mask should be used if large quantities of lamps are being broken for disposal.

Ventilation: Avoid inhalation of any airborne dust. Provide local exhaust ventilation when disposing of large quantities of lamps.

Hand and Eye Protection: Appropriate hand and eye protection should be worn when disposing of large quantities of lamps or handling broken lamps.

SECTION 9: REGULATORY STATUS

As a product these mercury containing lamps being shipped in the manufacturer's original packaging are not regulated by air, truck or ocean shipment. As a product these ALTO fluorescent lamps would be regulated in Minnesota, Connecticut, Vermont (will regulate disposal as of Mid 2002), and certain communities of Florida. ALTO lamps as non-hazardous in Tennessee requires a permit. Households in most States except Minnesota and Vermont. This material safety data sheet does not constitute "knowledge of the waste", in certain jurisdictions. TCLP data will be provided upon request.

Revised: 8/02

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