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EucoLight – LightingEurope Platform on Article 15 WEEE Directive - Product Sheet on Product Categories

Introduction

The lighting industry, represented by such industry associations as EucoLight (representing European lighting WEEE compliance schemes) and LightingEurope (representing manufacturers of lighting products, equipment and luminaires) has long been involved with the recycling of lighting products and equipment. For example, it played an influential role in the development of the Waste Electrical and Electronic Equipment (WEEE) Directive.

The WEEE Directive sets collection, recycling and recovery targets for several categories, including large household appliances, small household appliances and lighting equipment (lamps/LEDs).

In addition to the legal obligations established by the WEEE Directive, EucoLight and LightingEurope have collaborated to facilitate an exchange of information relevant to the recycling of lighting products. The present document aims to illustrate the information producers already provide for various lamp types and lighting products, based on the Art. 15 WEEE Directive requirements regarding the presence of substances, mixtures, components and other information needed to prepare a product for environmentally-sound recycling.

Disclaimer: The information contained within this document is meant to be used as an indication of what information recyclers need to have to ensure the correct treatment of lighting products. For more detailed information, please contact the manufacturers directly.

Category: Fluorescent lamps without ballast

Items to be removed from any separately collected WEEE:

- Substances: metallic mercury and phosphor powders
- Mixtures: fluorescent powder and mercury

Additional information needed to prepare components or whole appliances for environmentally-sound recycling:

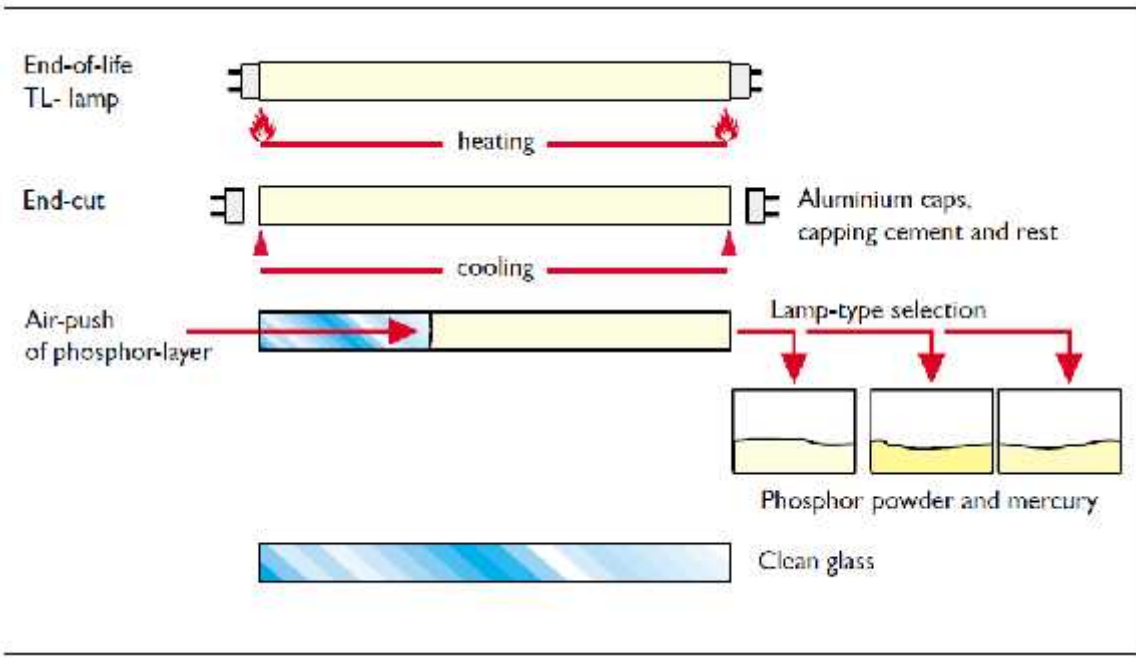
- End-of-life fluorescent lamps are considered to be a hazardous waste because they contain small quantities of such environmentally-sensitive materials as mercury.
- In EU Member States, these lamps are disposed of and collected separately from universal waste. Lamps are marked with the WEEE label, in compliance with Article 14(4) of Directive 2012/19/EU and European standard EN 50419. Local regulations can further help ensure compliance with collecting and recycling these lamps.
- Tubular linear lamps contain chemicals like metallic mercury and phosphor powders. In most countries, they are considered chemical waste and treated accordingly, (i.e, collected separately from universal waste). Today, these lamps are disassembled by specialised companies, with the recovered materials being either disposed of as chemical waste or recycled outside the lighting industry.
- End-of-life tubular linear lamps are disassembled by local companies.
- The most commonly used technique for tubular linear lamps is end-cutting:
    - In the end-cut/air-push disassembly process, the lamp's endcaps are removed by heating and/or cutting. The contents of the lamp tube are then removed by an air blast, which results in a mixture of fluorescent powder and mercury. What remains after this stage is the clean glass tube. Using this end-cut/air-push disassembly process makes it possible to achieve a good separation of the fluorescent powder and mercury mixture from the lamp's glass tube.

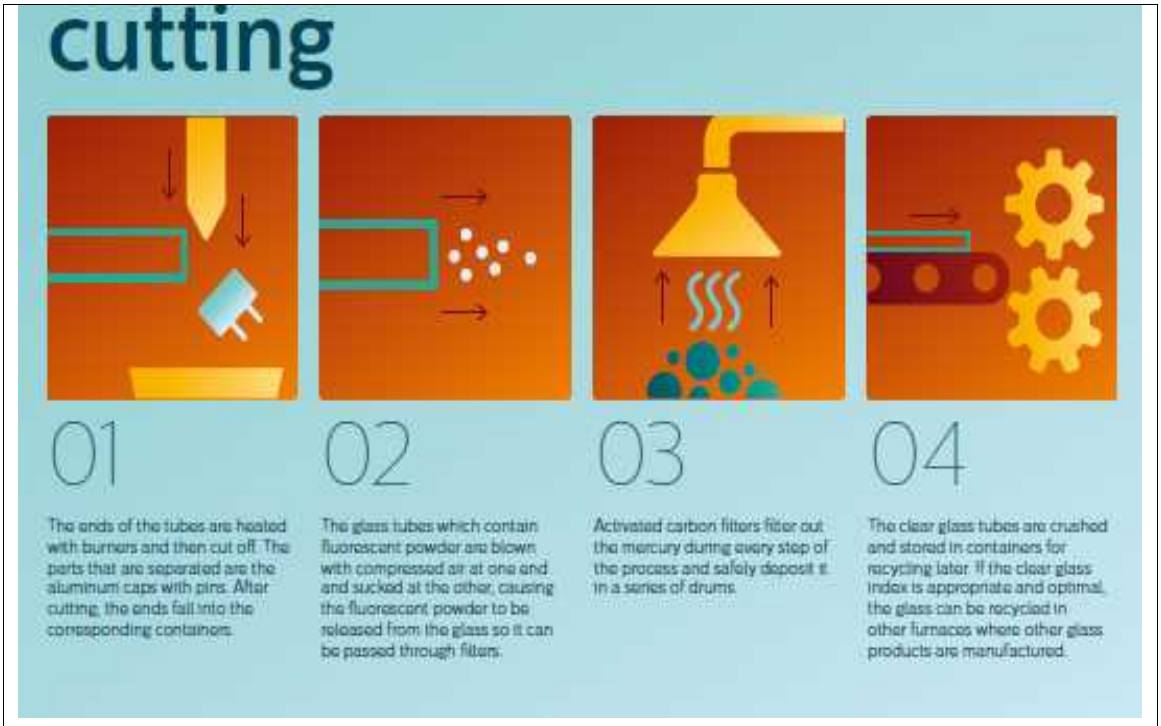
Special handling information:

- If tubular linear lamps are broken, ventilate the area where the breakage occurred.
- Use adequate general and local exhaust ventilation to minimize exposure levels. Open windows and doors and use fans to displace vapours.
- Use an appropriate, NIOSH-approved respirator.
- Use OSHA-approved safety glasses or goggles, puncture resistant gloves and protective or old clothing.
- Avoid generating dust during clean-up.

- Avoid generating mercury dust. To avoid dispersing spilled mercury, do not spray water on it. Use specially equipped mercury vacuum systems or eyedroppers.
- Do not use standard vacuum cleaners during clean-up. Optionally, sweep up all particles using disposable gloves or wipe up with a damp cloth or paper towel. Place all waste in a puncture-resistant closed container or double-bag. Dispose of materials according to local regulations.
- Practice personal hygienic protocol. Wash hands thoroughly before eating, drinking, smoking, handling tobacco products, applying cosmetics, or using toilet facilities. Dispose of contaminated clothing.
- Seek competent medical assistance for any concerns or in the case of an exposure.

Figures (source: Signify)





What happens to the fractions:

Output Fraction	Purpose	Recipient
Glass	Glass	Glass industry Lamp industry
	Glazing	Ceramic industry
	Fusion agent within black copper foundry	Metal industry
	Abrasive sand for cleaning	Cleaning
	Clinker	Building/cement industry
	Sand replacement	
	Under layer for asphalt road	
	Glass wool	
	Silicon substitute	Incinerators
Caps and metallic components	Metal foundries	Metal industry
Plastics	(Mix of) plastic	Plastic industry
	Plastic waste	Energy recovery Controlled incineration Controlled landfill
Fluorescent powders	Recycling	Rare earth industry
	Recycling	Lamp industry
	Waste	Controlled landfill
Mercury	Cathode	Chlorine and caustic soda industry
	Mercury	Lamp industry
	Waste	Controlled landfill