



Health and Safety

Overview

Conventional compact fluorescent lamps (CFLs) work by using electricity to excite mercury vapour, which then produces light. This process is more energy-efficient than incandescent lamps, but there have been some health concerns over the use of liquid mercury in CFLs.

Since January 2008, MEGAMAN® has only used amalgam, an alloy of mercury in solid form, in manufacturing its full range of CFLs. MEGAMAN® CFLs are therefore all free from liquid mercury. This minimises health risks to anybody who handles CFLs during the production process, when they are in use or on disposal and, in addition, most of MEGAMAN®'s energy-saving lamps are fitted with silicone protection, reducing risk to the user if the lamp is accidentally broken.

Mercury Amalgam

The amalgam used in MEGAMAN® CFLs instead of liquid mercury contains only a small amount of chemically bound mercury in stable solid form. As mercury vapour does not release until it reaches around 100°C under atmospheric pressure, this safer technology protects workers during production and transportation of the lamps, as well as end-users during both usage and disposal. Not only is the mercury more stable, but MEGAMAN® CFLs on average contain 1.63 mg of mercury, which is less than in other household items such as button cell batteries (5-25mg) and thermometers (500mg).

Silicone Protection

Most MEGAMAN® energy-saving covered lamps are enveloped in silicone, which provides extra protection to the lamp and user alike. Silicone is a durable and heat-resistant material that wraps the glass cover of the bulbs to shield against shattered glass and other components if

the bulb breaks accidentally. This safety shield prevents people coming

into contact with the mercury inside the lamp and minimises the hazard from shattered glass upon disposal. A further health benefit of the silicone protection is that it eliminates the use of toxic acids used to produce a traditional frosted finishing.

Safer Production

MEGAMAN® considers the environmental impact of the production process of its lamps, as well as the end product.

All MEGAMAN® CFLs are produced using lead-free soldering and glass tubes, which eliminates harmful solder at the contact point of the lamp base, as well as eliminating lead-contamination upon disposal of the lamp. All sealants used are also water-based, rather than glue, to prevent the emission of odours during production and ensure that no toxic gas is released when the lamp is in operation.

In addition to direct safety benefits, compact fluorescent lamps have been shown to minimise the amount of mercury released into the air by power plants, where it affects health the most. According to statistics released by the US Environmental Protection Agency, the highest source of mercury in our air comes from burning fossil fuels such as coal. 70% of power plants are coal fired and burn fossil fuel for energy. In general, such a plant would emit 10mg of mercury to produce enough electricity to run an incandescent bulb, compared to just 2.4mg of mercury to run a CFL for the same amount of time. All MEGAMAN® lamps are compliant with the EU RoHS directive on the use of hazardous substances in electrical and electronic equipment.

