



Flat Panel Display TV Types and Content Fractions

Written By: Thomas Opsomer



INTRODUCTION

There are three basic types flat panel TVs:

- **Plasma display panel (PDP)** TVs, which use use small cells containing electrically charged ionized gases to display the image;
- **Thin-film-transistor liquid-crystal display (TFT LCD)** TVs, which use small LCD shutters to selectively filter light emitted from cold cathode fluorescent lamps (CCFLs) or light-emitting diodes (LEDs), which can in turn be mounted either to the side of the display or behind the LCD screen;
- **Organic light-emitting diode (OLED)** display TVs, which use individual LEDs for each pixel of the image and therefore do not require any backlight.

Material value

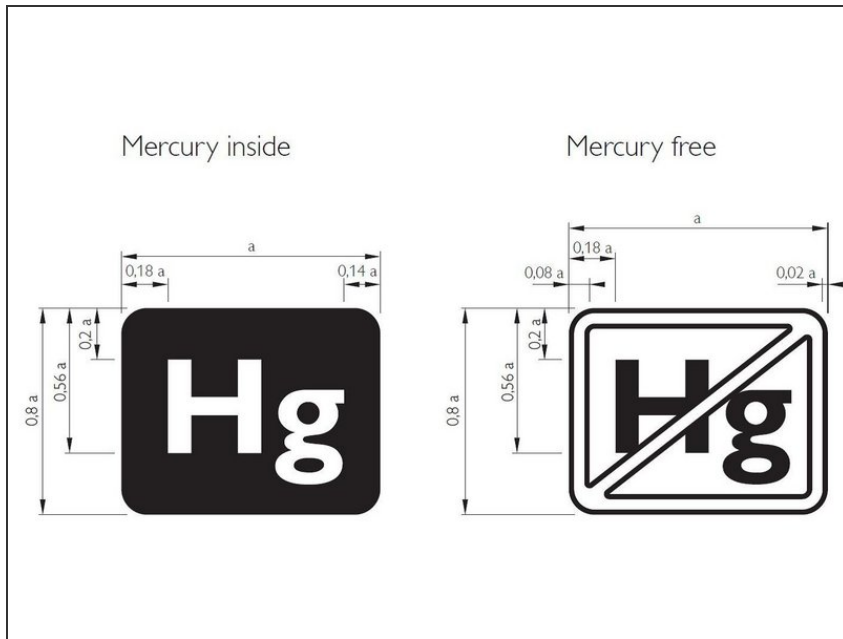
Although many materials contained in LCD screens are of a high quality (e.g. electronics, highly transparent plastic within LCD module, etc.), there exist only few appropriate recovery technologies to further process them. Thus purchasers have to be selected carefully to be able to operate an economic viable dismantling process for flat screens.

Step 1 — Heavy with glass screen and metal back cover: plasma TV



- You can usually recognize plasma TVs without disassembling them.
- If the TV is relatively heavy (around 20kg for a screen with a 40" or 100cm diagonal), it is probably a plasma TV.
 - Plasma TVs use more power than other types of flat screen, therefore they have a fairly large built-in power supply unit.
 - Plasma TVs have a solid glass screen which also contributes to the weight. The glass feels cold to the touch and isn't flexible.
 - Plasma TVs also have a sheet metal back cover instead of a plastic back.
- Plasma TVs are packed with electronic components containing valuable materials. They do not normally contain any hazardous substances.

Step 2 — Identifying LCD TV's with CCFL



- CCFLs contain mercury and should therefore be handled and treated with particular caution. A single lamp contains 1 to 5 mg Hg, meaning a 36" LCD display can contain up to 80mg of Hg.
- If a flat panel TV is not a plasma TV (see previous step), look for the Mercury Inside or Mercury Free logo. These were introduced in 2014 by Digital Europe and Wrap to aid in segregating TVs containing Mercury.
- If no Mercury Inside or Mercury Free logo is visible, you will need to take off the back cover of the TV in order to look for CCFL mounting clips protruding through the display panel.