

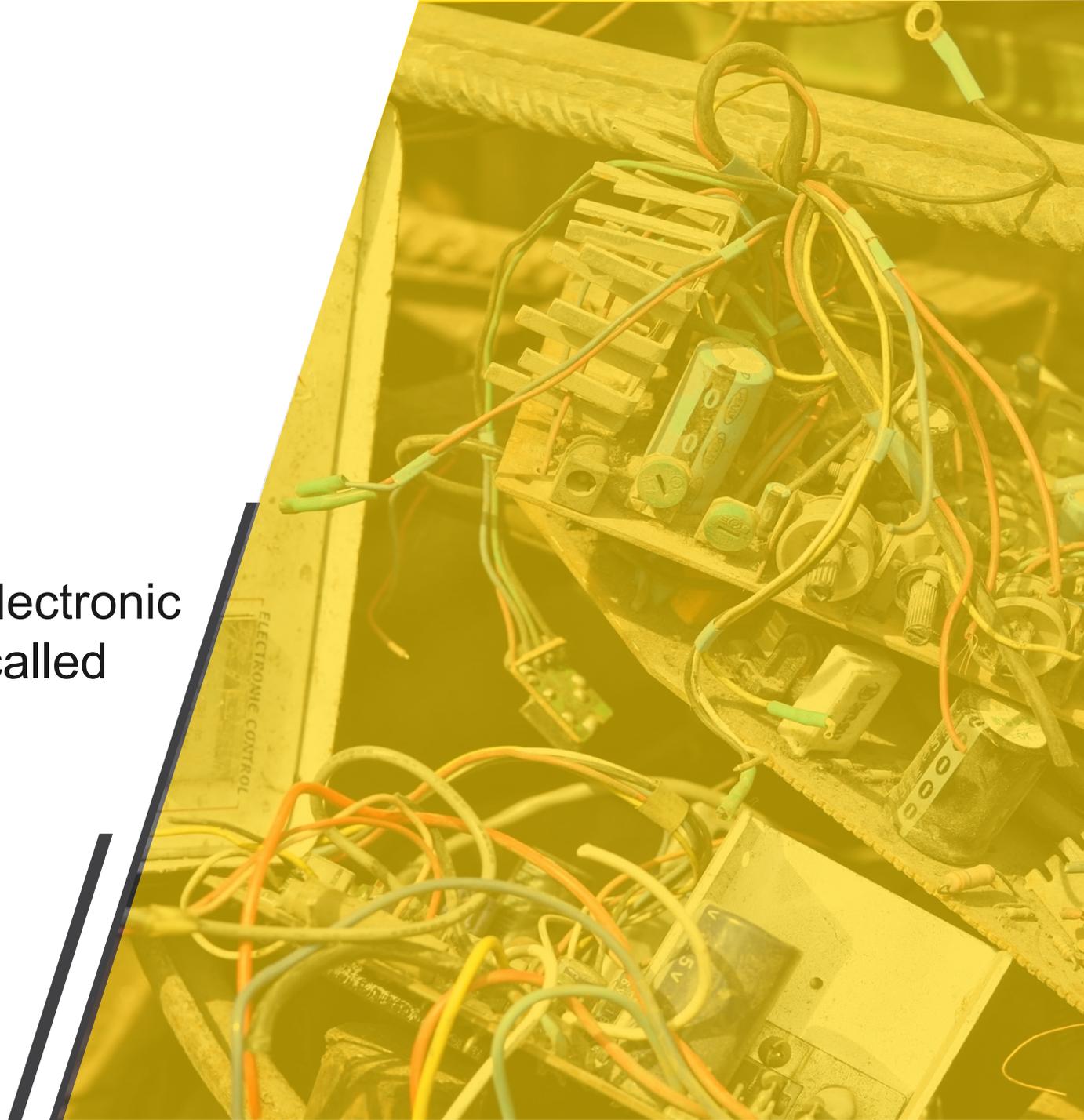
INFORMATION & SAFETY

**ELECTRONIC WASTE  
CONTAINING  
POLYCHLORINATED  
BIPHENYLS (PCBs)**



# WHAT IS E-WASTE?

Waste from discarded electrical and electronic equipment without intent of re-use is called **E-Waste**.



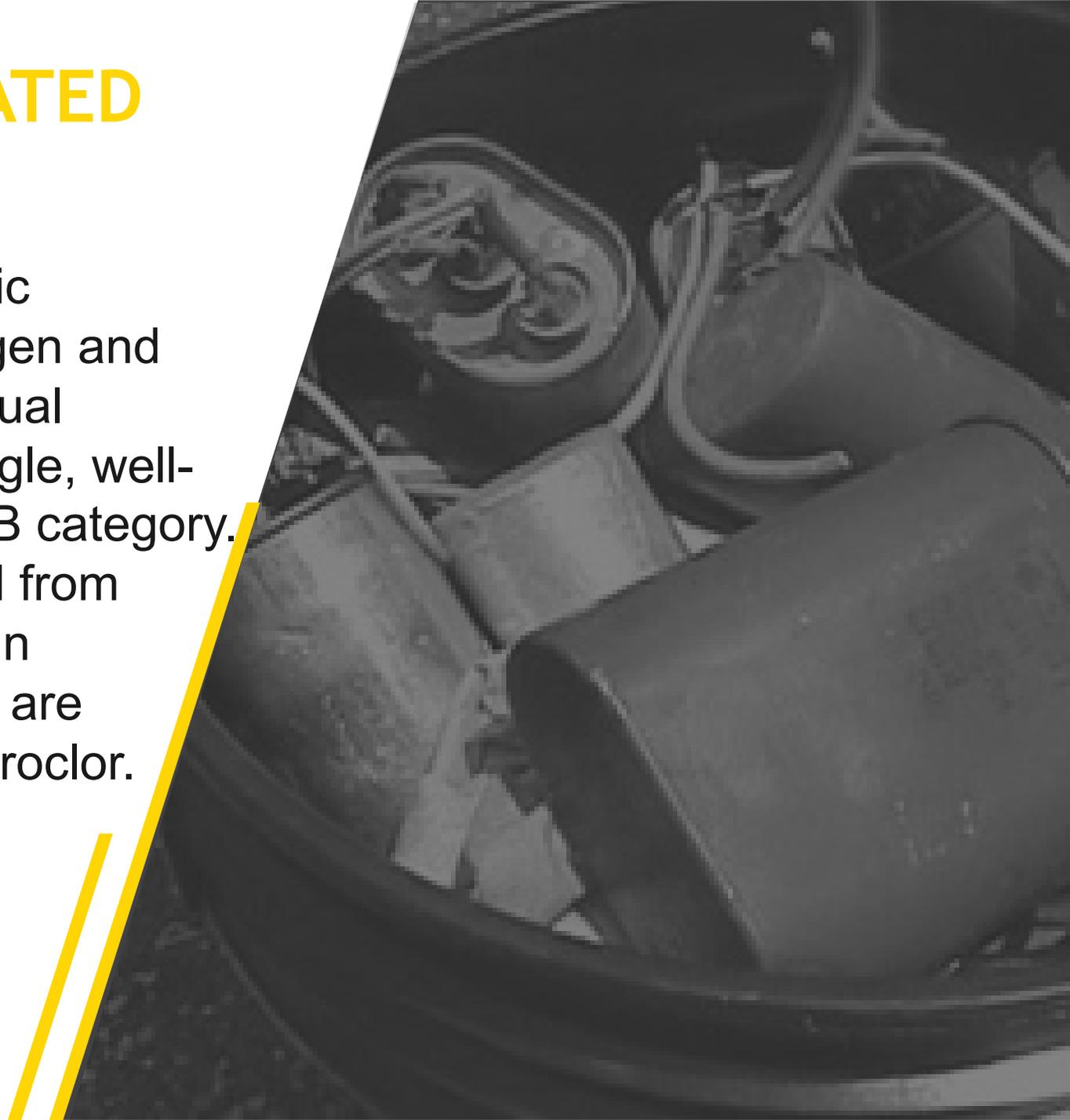
# EXPOSURE IN RECYCLING OF E-WASTE

Recycling of electronics can be a source of many toxic chemicals including: Metals, Organic chemical compounds, Polychlorinated biphenyls (PCBs).

# WHAT ARE POLYCHLORINATED BIPHENYLS (PCBs)?

PCBs are a group of man-made organic chemicals consisting of carbon, hydrogen and chlorine atoms that contain 209 individual congeners. A PCB congener is any single, well-defined chemical compound in the PCB category. PCBs were domestically manufactured from 1929 until manufacturing was banned in 1979. Many commercial PCB mixtures are known in the U.S. by the trade name Aroclor.

They have a range of toxicity and vary in consistency from thin, light-colored liquids to yellow or black waxy solids.



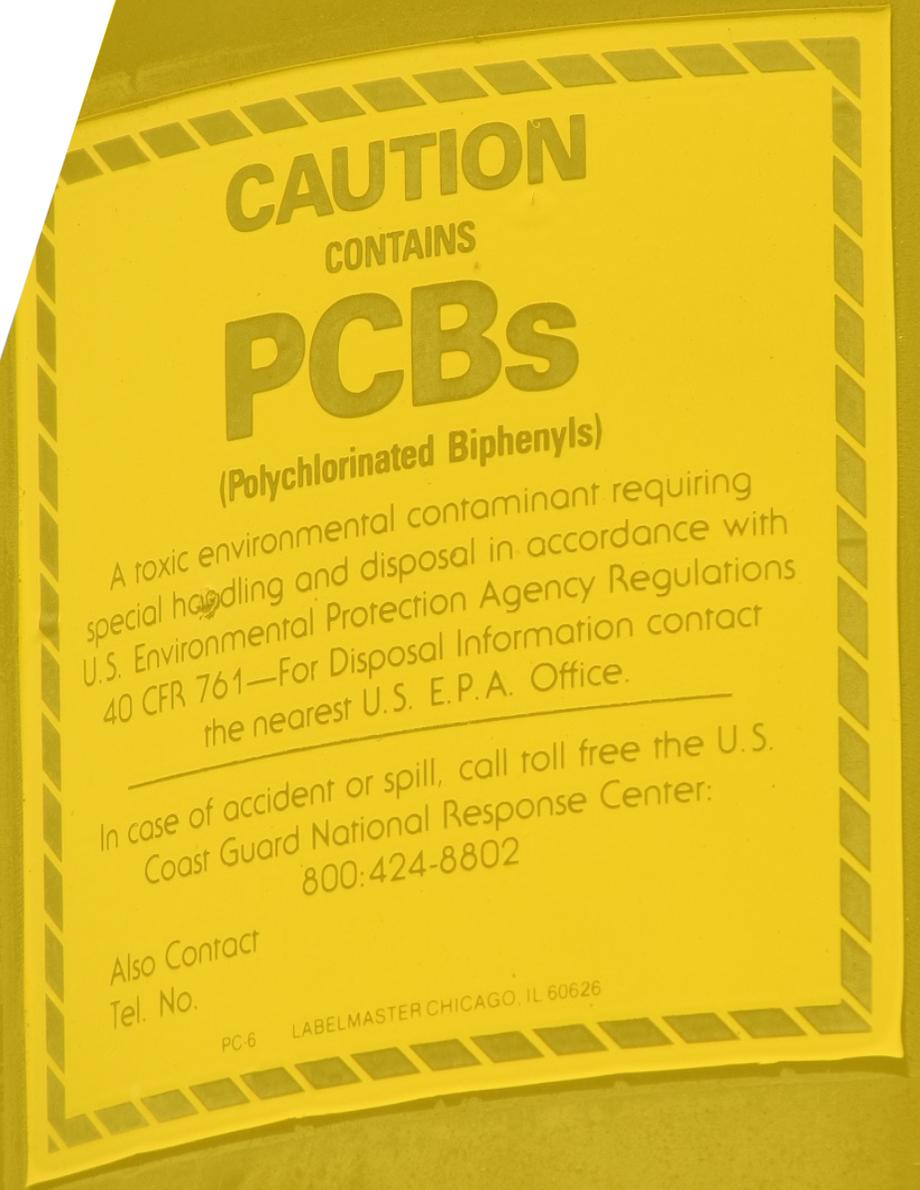
# POLYCHLORINATED BIPHENYLS (PCBs) IN E-WASTE

PCBs are often found in the following e-waste:

- **Transformers**
- **Large Capacitors**
- **Circuit Breakers**
- **Reclosers**
- **Electromagnets**
- **Lamp Ballasts**
- **Voltage Regulators**
- **Switches**
- **Sectionalizers**
- **Motor Starters**
- **Cable**
- **Small Capacitors**

# HOW ARE WORKERS EXPOSED TO POLYCHLORINATED BIPHENYLS (PCBs) IN **E-WASTE RECYCLING?**

Occupational exposure to PCBs occurs mainly via **inhalation** and **dermal routes**.



# POLYCHLORINATED BIPHENYL (PCB)

## HEALTH CONCERNS

The most commonly observed health effects in people exposed to large amounts of PCBs are skin conditions such as acne and rashes.

PCB-related health effects may vary based on length of exposure.

**Short-Term:** Skin conditions & irritations of the eyes.

**Long-Term:** Respiratory tract symptoms, developmental effects, liver and gastrointestinal effects, neurobehavioral and immunological changes in children, cancer, reduced fertility in women, miscarriage, reduced birth weights of babies exposed as fetuses, high exposure may result in coma and death.



# POLYCHLORINATED BIPHENYLS (PCBs)

## SAFETY MEASURES

- 1: If possible, do not accept PCB containing e-waste at your facility. If you accept PCB e-waste, follow these safety measures.
- 2: Identify and label the material. Follow EPA established marking requirements.
- 3: Properly store the material under cover, in leak-proof metal drums with EPA-standard labelling and place in secondary containment
- 4: Properly dispose of the material. EPA has disposal requirements for waste with PCB levels > 50 ppm.
- 5: Record Keeping and Reporting. EPA requires that records be maintained for the storage, transportation, and disposal of PCBs for at least three years.
- 6: Special consideration for PCB-Containing light ballasts: Unless it can be determined to be PCB-free by the manufacturer marking information, it must be
- 7: treated as PCB-containing waste.

If the PCB container is damaged or leaking, avoid skin contact and inhaling vapors and wear Personal Protective Equipment (PPE). Use absorbent to soak up the spill and place in sealed drum. Wash skin thoroughly if exposed.



## For More Information:

Your local OSHA office, your Regional OSHA PCB Coordinator, or the National OSHA Office Number



1-800-321-6742

Educational materials developed by  
Harvard T.H. Chan School of Public Health  
and Boston University School of Public Health