



# The Basel Convention Technical Guidelines on the Environmentally Sound Management of ULABs

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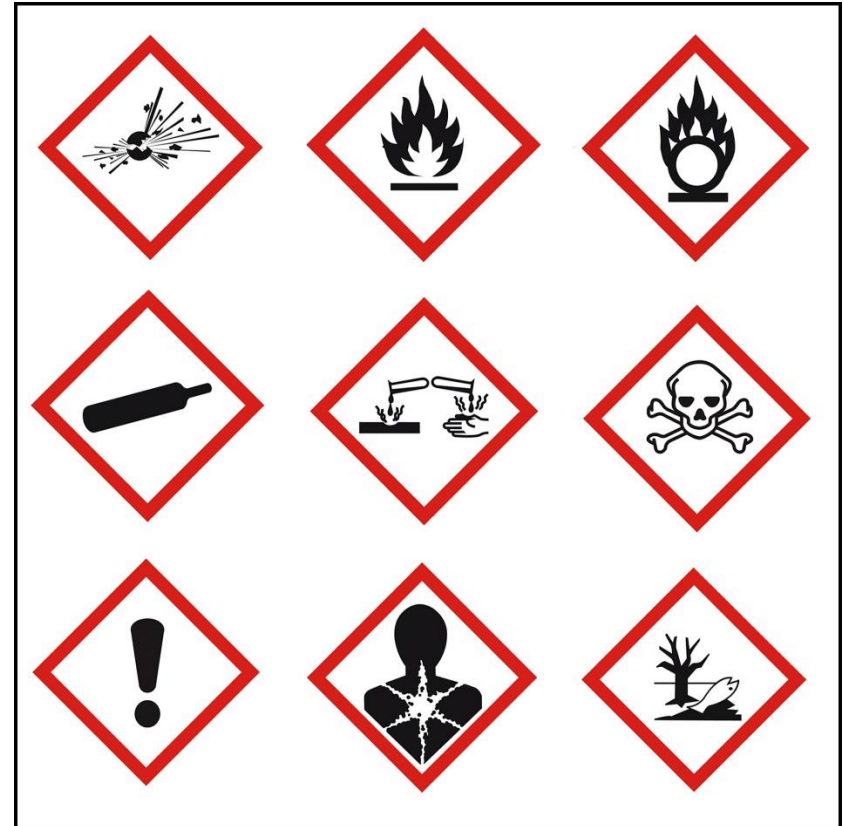
# Basel Convention on the Transboundary Movement of Hazardous Wastes and Their Disposal



- Developed to control the transboundary movement of waste globally and to prevent dumping of hazardous waste in developing countries.
- Entered into force in 1992.
- The key objectives of the Basel Convention are:
  1. Minimize the generation of hazardous wastes in terms of quantity and hazard;
  2. Manage wastes as close to the source of generation as possible;
  3. Reduce the transboundary movement of hazardous wastes.

# Hazardous Wastes

- Hazardous waste is destined to be discarded, but it can also be recovered or recycled.
- The Basel Convention provides a list of wastes which are deemed as hazardous and states the characteristics which render them as hazardous.



Globally Harmonized System (GHS) Pictograms which indicate hazardous characteristics

# Environmentally Sound Management of Hazardous Wastes or Other Wastes

- “Taking all **practicable** steps to ensure that hazardous wastes or other wastes are managed in a manner which will **protect human health and the environment** against the adverse effects which may result from such wastes.”
- This is linked to the concept of the lifecycle management of waste.



Source: Petarčić, 2016  
<http://hi4csr.com/en/blog/life-cycle-thinking-in-sustainable-waste-management/>

# Publications by the Secretariat of the Basel Convention

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## Adopted Technical Guidelines

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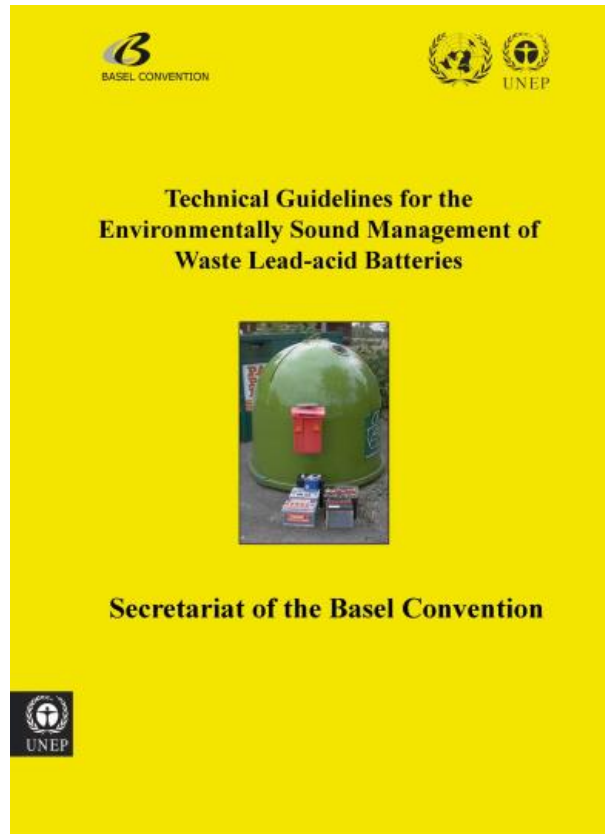
**Technical Guidelines on the Environmentally Sound Management of Biomedical and Healthcare Wastes (Y1; Y3)**  
Adopted by COP.6, Dec 2002  
Y codes, Y1, Y3  
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**Basel Convention Technical Guidelines on Hazardous Waste from the Production and use of Organic Solvents (Y6)**  
Adopted by COP.2, Mar 1994  
Y codes, Y6  
English

- The Secretariat of the Basel Convention has published several guidance documents and **Technical Guidelines** that define the **Environmentally Sound Management** of specific waste streams.
- **Technical Working Groups** are established by the Conference of the Parties to develop Technical Guidelines.

# Basel Convention Technical Guidelines for the ESM of ULABs



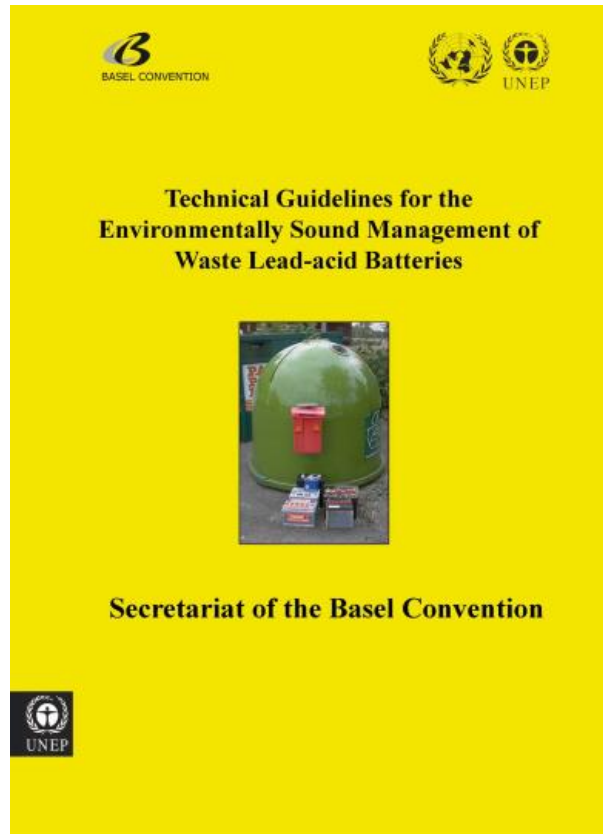
May 2002:

- Technical Guidelines were unanimously adopted by the TWG on the Recycling of ULAB

December 2002:

- Guidelines unanimously adopted at COP 6 (adopted by 170 countries)
- President of the COP invited the Parties to use the guidelines so their practical application could be tested and reviewed

# Basel Convention Technical Guidelines for the ESM of ULABs



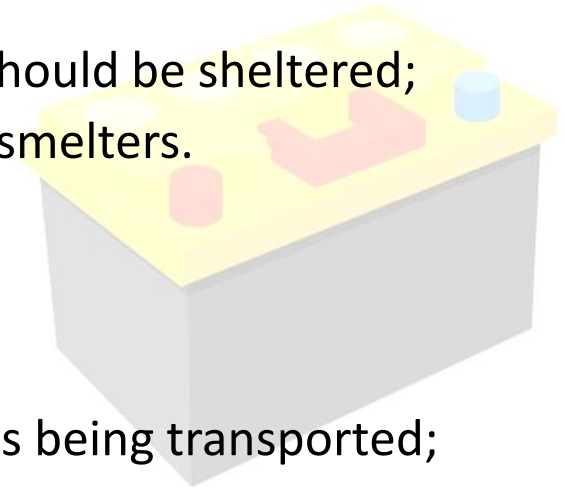
## Contents:

1. Pre-Recycling of ULABs
2. Recycling of ULABs
3. Environmental Controls for the Recycling Plant
4. Health Aspects to be Considered at the Recycling Plant
5. Key Steps for the Implementation of ULABs Recycling Programs

# Pre-Recycling Steps in ULAB Recycling

## 1. Collection

- i. Infrastructure for collection should ensure that a continuous supply of scrap lead materials is provided for recycling;
- ii. Batteries should not be drained;
- iii. Batteries should be stored in acid-resistant containers and should be sheltered;
- iv. Collectors must only sell ULABs to authorized/licensed lead smelters.



## 2. Transportation

- i. Bound, shrink-wrapped and stacked;
- ii. Vehicle should be marked to indicate that hazardous waste is being transported;
- iii. Drivers should be trained, equipped with PPE and spill kits.

3. **Storage at Recycling Plant** - batteries will be drained, segregated, stored in building with acid-resistant flooring and with efficient water collection systems for managing effluents from spills.



# Bound, shrink-wrapped and stacked



# Lead-Acid Battery Recycling Procedure

Guidance on Recycling Processes includes:

- 1. Battery breaking** - ensures that all components, such as lead plates, connectors, plastic boxes and acid electrolyte are easily separated in the subsequent steps.
  - Manual breaking should be avoided.
  - Mechanical- hammer mills or other crushing mechanisms
  - Hydraulic separation.
- 2. Lead Reduction** – to isolate metallic lead from mixture containing lead oxide, lead sulphate and other metals.
  - Pyrometallurgical processes- including blast furnaces, rotary kilns.
  - Hydrometallurgical technologies- electrolysis
  - Hybrid procedures
- 3. Lead Refining** - to remove residual copper (Cu), antimony (Sb), arsenic (As) and tin (Sn). The soft lead standard does not allow more than 10g per ton of these metals.

# Environmental Controls for the Recycling Plant

1. Environmental Impact Assessment (EIA) for Lead Recycling Plant;
2. Technological improvements for pollution abatement;
3. Environmental Monitoring (effluents, gases, soil, air quality, medical examination of workers).

# Health Aspects to be Considered by Recycling Plant

Maintaining high occupational health standards in a lead recovery operation is vital and the Guidelines explain:

1. The adverse health effects of lead exposure;
2. Occupational limits and environmental limits for exposure;
3. The measures necessary to prevent high levels of exposure to lead.
4. Control mechanisms to monitor employee exposure to lead, including surveillance and medical intervention



# Key Steps for Implementation of Lead Recycling Programmes

- The Guidelines include a Chapter on how a program for the environmentally sound recovery and recycling of ULAB should be implemented.:
  - i. Collection and temporary storage pending export to a country which recycles ULABs in an environmentally sound manner
  - ii. Domestic Recycling if there are adequate facilities with sufficient capacity
  - iii. Regional solutions built on complementary synergies
- Policy framework for collection infrastructure should identify stakeholders, their roles in ensuring a continuous supply of leaded material and economic incentives for viability.
- Opportunities for actors in the informal sector to be regularized should also be considered.

# Thank you!

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