

PBTs in the Northeast & P2 Opportunities for Lead

Karen Thomas
NEWMOA

Background on the Project

- Analyze TRI data to determine PBT that is released or transferred in the largest amount in the NE states
- Identify industry sectors or product categories where chemical originates
- Research P2 opportunities for industry sectors or product categories identified
- Information to assist state TA and regional coordination efforts

Findings

- Lead and lead compounds are released or transferred in larger amounts than any other PBT in the northeast (1998/1999 TRI data)
- The following 8 2-digit SIC codes account for all lead/cmpds released or transferred in the NE

10 Metal mining	28 Chemicals
30 Plastics	32 Stone/glass/clay
33 Primary metals	34 Fabricated metals
36 Electrical equip	37 Transportation

P2 Opportunities for Lead

- Researched web-based resources for opportunities in the sectors identified
- Created a table of information about the lead-emitting technology and the P2 alternative for each sector
- Listed additional information for each lead technology/alternative and the web reference
- Report on NEWMOA website:
www.newmoa.org/publications
(under "other PBTs")

Example of Table for Metal Mining

Lead-emitting Technology	P2 Improvement or Alternative
Two-step sintering and blasting in a lead smelting furnace	One-step, continuous "QSL Process" to smelt lead sulfide concentrates, lead sulfate and mixed oxide sulfate secondaries
Open operations, wet scrubbers and electrostatic precipitators used in lead smelting	Doghouse enclosures and fabric filters
Lead-based thread compounds used on drill pipe	Zinc-based thread compounds

Metal Mining "Additional Information" section Process Improvements for Smelters

- Use of doghouse enclosures where appropriate and preference to fabric filters over wet scrubbers or wet electrostatic precipitators. ("Lead and Zinc Smelting," P2 and Abatement Handbook, World Bank Group, 1998
[http://wbIn0018.worldbank.org/essd/essd.nsf/GlobaIView/PPAH/\\$File/64_leadz.pdf](http://wbIn0018.worldbank.org/essd/essd.nsf/GlobaIView/PPAH/$File/64_leadz.pdf))
- <http://www.cleanerproduction.com/industries/nonferrous.html>
- Missouri's Doe Run lead smelter is implementing changes to further control fugitive emissions from the blast furnace and refinery portions of the smelter. From the St. Louis Business Journal, 8/1/02: "the improvements included installing a new air filter system to reduce air emissions; additional building enclosures, and completely enclosing the blast furnace/dross paint building."
(contact Tony Petruska, EPA Region 7 Air, RCRA and Toxics, Petruska.Anthony@epamail.epa.gov)

Example of Table for Fabricated Metal Products

Lead-emitting Technology	P2 Improvement or Alternative
Lead-based primer for manufacture of ammunition	Lead-free primer
Lead bullets	Bullets made of tungsten/polymer, tungsten iron and steel shot shells
Lead solder for manufacture of copper and steel radiators	Lead-free solder
Molten lead annealing for wire manufacture	Induction heating in inert atmosphere

Conclusions

- A few P2 technologies exist for most of the sectors researched – 22 in the table
- Lead P2 opps difficult to find in web-based P2 resources
- Certain programs in the region have expertise in lead reduction in specific industry sectors
- Regionally, SIC 36 Electrical Equip and 33 Primary Metals may offer best options for coordination
 - Largest number of NE states
 - Largest quantities released/transferred/recycled
 - Available P2 options