# WHAT IS LEAD FLAKE?

Lead flake is sludge generated by the electrowinning process and is shipped off site to a secondary lead smelter for its lead value. Lead flake is exempt from hazardous waste regulations.

**WHAT IS LEAD ANODE?**

Lead anodes are sheets used in the electrowinning process. Once removed from the cell line, lead anodes are shipped off site to a secondary lead smelter for their lead value. Lead anodes are exempt from hazardous waste regulations.

**HOW SHOULD LEAD FLAKE BE MANAGED PRIOR TO SHIPPING OFF SITE?**

* Lead flake should be placed into HDPE 55-gallon open head drums. These drums are allowed to have slits cut in the bottoms of the drums to allow liquid to drain. These drums must be stored inside the tankhouses in an area where solutions will drain back to the process. These HDPE drums should be labeled with the words “Lead Flake”.
* HDPE drums must be stored inside the tankhouses until drying is complete.
* DOT approved roll-off container must be labeled with the words “**RQ UN3264 Corrosive Liquid, Acidic, Inorganic, N.O.S., 8, PG II (contains Sulfuric Acid, Lead) Lead Flakes**” and have the Class 8 hazard labelOnce the lead flake has drained for 7 days, the lead flake is transferred from the open head drum to a DOT approved roll off container. Both drum and roll-off container must be labeled (Lead).
* If roll-off found to be leaking, corrective actions (including but not limited to door tightening, caulking, puttying, etc.) will be deployed before transporting offsite.
* During transfer of lead flake, ensure all debris (insulators, mist balls, etc.) are removed from the lead flake.
* Once transfer is complete, replace the tarp cover on the roll off container and secure it. If tarps are worn and/or damaged it should be reported to transporter.
* When roll off container is full, coordinate with EW Shipping department to schedule change out of the roll off container.
* Debris shall be placed into marked EW debris containers properly labeled with contents (i.e. Contaminated PPE, Contaminated Trash, etc.) and taken to the Environmental Yard for further handling and disposal.

**HOW SHOULD LEAD ANODES BE MANAGED PRIOR TO SHIPPING OFF SITE?**

* All spent lead anode crating and storage should be completed at the tankhouse where they are generated.
* After rinsing, the lead anodes and the attached copper bar should be placed directly onto pallets and stacked neatly. All insulators and edge strips shall be removed prior to placing on pallets. The pallets should be in good condition and should be able to support the anodes. When the anodes have been placed onto a pallet, the anodes should be shrink- wrapped and banded to the pallet and set aside in preparation for shipment. **Anodes placed onto a broken pallet will not be shipped and must be re-packaged onto a good pallet.**
* **Spent lead anodes must be stored in a building at all times.** Building must be an engineered structure with a floor, walls, and roof, all of which are made of non-earthen materials. The roof must be suitable for diverting rainwater away from the foundation of the building. Once palletized, banded and shrink-wrapped, the pallets may be placed in the containment area until shipped.
* When 10-12 pallets have been banded, shrink-wrapped and are ready for shipment, Hydrometallurgical personnel will arrange the shipment to the secondary lead smelter. Use DOT shipping designation: Lead Anodes (Scrap Metal).
* Once the anode shipment has been arranged, the Hydrometallurgical personnel will prepare the pallets for shipment. Hydrometallurgical personnel will transport the anodes to each tankhouse loading dock and load the pallets of anodes into a van-type and/or completely covered trailer and ship to the secondary lead smelter.

**EMPLOYEE TRAINING**

All personnel shall receive training or at the least have access to this BMP when dealing with lead flakes and spent lead anodes on Morenci property.

Training will be provided by Supervisor and/or Team Environmental Representative.

DOT hazardous materials training must be provided to all employees responsible for the preparation and shipments of lead flake. This training is provided from an outside company.

**QUESTIONS OR NEED HELP? CONTACT:**

**Hydrometallurgical Division Representatives**

**Environmental Services Office: 865-6000**