Introduction

Lead is used as a primary shielding material for gamma emitting radionuclides such as $^{125}$I and $^{51}$Cr. Lead is also used as a secondary shielding material for high energy beta and beta/gamma emitting radionuclides such as $^{32}$P and $^{86}$Rb. Lead is considered a hazardous material and when it is no longer required for shielding purposes it must be disposed of appropriately.

This issue of Radiation Notes will help you implement an environmentally sound recycling program directly with the lead recycling company MEDI-RAY. There is no cost for disposal and shipping fees are minimal.

MEDI-RAY Inc. will provide you with boxes and shipping instructions. Contact them at 914-961-8484.

Lead disposal procedure

1. Empty the lead container of any vials or material. Remove any plastic housing or sheathing from lead containers.

2. Wipe all interior and exterior surfaces of the lead container and count samples in the appropriate counter. Use a liquid scintillation counter for beta and beta/gamma emitting radionuclides and a gamma counter for gamma emitting radionuclides.

   Review wipe test results:
   - If wipe tests are < 100 dpm - continue with procedure
   - If wipe test results are > 100 dpm - contact REHS for assistance

3. Meter survey all surfaces of the lead container with the appropriate detector. Use a GM detector for beta and beta/gamma emitting radionuclides; a typical background reading will be 40 to 60 cpm. Use a NaI probe for gamma emitting radionuclides; a typical background reading will be 250 to 300 cpm.

   Review survey results:
   - Meter survey results are ≤ background – continue with procedure
   - Meter survey results > background – contact REHS for assistance

4. Remove any radioactive material tape and thoroughly deface any appearance of the word radioactive or the radiation symbol.

Remember to wear gloves when handling potentially contaminated items and wash your hands thoroughly after handling lead materials. Contact REHS at any time if you are unsure about the procedure or require assistance.

Failure to follow this procedure may result in the return of your lead shipment by MEDI-RAY and refusal to accept future shipments.

* Lightweight acrylic or Lucite or Plexiglas is used as the primary shielding for beta emitting radionuclides.