

CUPEL BEAD ANALYSIS

Objective

The bead from the fire assay will be analyzed for Au. The result will be in terms of Troy ounces per ton.*

Principles Demonstrated

Leaching
Precision balance use
Amorphous-to-crystalline transformation
Selective leaching

Background

The bead from the fire assay will be flattened to expose large surface area. The bead will then be leached with nitric acid solutions of increasing concentration so as to remove the Ag. The resulting bead is then heated to anneal it into the crystalline form. The bead is then weighed. The weight in mg is the ounces per ton of Au.

Safety

PROTECTIVE EYE WEAR IS REQUIRED WHEN USING ACIDS

Procedure

1. Flatten the bead.
2. Leach in 1:8 nitric acid.
3. Leach in 1:4 nitric acid.
4. Leach in 1:1 nitric acid.
5. Rinse with distilled water.
6. Dry in the drying oven.
7. Bring to red heat in a parting cup.
8. Weigh the bead.

* 2000 lbs.