ADME NTP Study S0195 Lead (2+) acetate

The contract laboratory used lead acetate trihydrate for the test article.
Sex/Species: adult male Fischer 344 (F-344) rats.
Vehicle: dosed feed, NRC-AIN-76A powder feed.

CASRN 301-04-2

No radiolabel was used. Lead in feed was analysed by an Inductively Coupled Argon Plasma Emission Spectrometer (220.35 nm). Blood samples and femurs were analysed by a Graphite Furnace Atomic Absorption Spectrometer (283.3 nm).

Studies Performed:

- Animals were exposed to dosed feed with 0, 10, 30, or 100 ppm lead (2+) acetate for 30 days (n = 10 per group). Blood and bone (femur) was analyzed for lead on Day 30 and urine for delta-aminolevulinic acid (ALA) on Day 23.

This test article was one of four lead compounds tested together to determine the bioavailability of different chemical forms of lead. The other three test articles were lead (II) oxide, lead (II) sulfide, and an Alaskan lead ore concentrate (NTP studies S0248, S0265, and S0375, respectively).

All four of the test articles were sieved in an 8 inch 400 mesh US Standard Sieve. The fraction of lead (2+) acetate that passed through the sieve (-400) was used in the study. The assay value for lead (2+) acetate (in the form of lead acetate trihydrate) was 65.4% lead by weight. No significant differences were found in food consumption as a function of dose levels for any of the test chemicals.

Analysis of blood samples taken immediately prior to dosing and at the end of the dosing period showed substantial contamination of a significant number of the samples. For this reason, no conclusions can be made from the blood lead data (data not shown).

On exposure day 23, each rat was transferred to an individual metabolism chamber for collection of urine. Animals were provided dosed feed and water while in the chambers and were kept there for up to 24 hours to provide sufficient urine for analysis.