DEPARTMENT OF COMMERCE
BUREAU OF STANDARDS
WASHINGTON

PROVISIONAL CERTIFICATE

of ANALYSIS of

ZINC ORE

STANDARD SAMPLE NO. 2a

Zinc	30.53 per cent

Sample No. 2a was prepared from the sample originally prepared for the Sub-Committee on Uniformity in Technical Analysis of the American Chemical Society. (See Jour. Amer. Chem. Soc., vol. 29, p. 262, 1907). To make the old sample, a pure blend from Joplin, a mixture of Franklinite, willemite, calcite, etc., from Franklin, N.J., and an impure blend from Colorado containing a good deal of iron, copper, and lead, were ground together with enough cadmium sulfide to give about 0.6 per cent cadmium in the sample. This sample, which was known as Sample D, was turned over to the Bureau of Standards and was issued for several years as the Bureau of Standards Standard Sample No. 2. As a result of slow oxidation and hydration its zinc content changed to such an extent that the sample was reground, mixed and reanalyzed. At the time the new analysis was made the sample showed a loss of 0.55 per cent when dried for 3 hours at 103°C.

The determination of zinc was made by: (1) completely decomposing the sample by treating with nitric and hydrofluoric acids, evaporating to dryness, treating with dilute nitric acid and filtering; (2) fusing the small residue with a little sodium carbonate, dissolving the melt in nitric acid and adding the solution to the filtrate; (3) removing the lead and copper by electrolysis; (4) adding sulphuric acid to the electrolyte, heating to fumes, diluting, precipitating the cadmium as sulphide and filtering; (5) boiling the filtrate to remove hydrogen sulfide, neutralizing until 0.009 N, and precipitating the zinc as sulfide; and (6) filtering and igniting the sulphide to oxide.

It is recommended that the sample be kept in a cool, dark place and that it be exposed to the air as little as possible. The zinc content, 30.53 per cent, refers to the sample as received.

(Signed) LYMAN J. BRIGGS, Acting Director.
P.H.W.

Washington, D.C.,
May 1, 1933.