

## Certificate of Analysis

**AR-3085**  
**ZINC SULFIDE CRM**  
**LOT# 223F**

**% SULFUR (BY PURITY)****32.9 %****Expanded Uncertainty =  $\pm 0.003$** **Purity – 99.99%****% SULFUR (BY ANALYSIS)****MEAN = 32.9 %****Expanded Uncertainty =  $\pm 1.2$** **(k=2, @ 95% confidence) (n=39)**

The intended use is for the Sulfur determination in materials using induction oxidation combustion with infrared detection or other valid test methods. The verification of this CRM was by induction oxidation combustion IR detection using tungsten metal and high purity iron chip for accelerators. Alpha Method ARI-LAB-621.

**Reference materials employed for traceability and validation:****High Purity Zinc Sulfide 99.99% - Lot MKCJ1451****Alpha – AR3085-p19F032, AR3085-08302MA**

The mean analytical values were derived by data sets showing traceability to the above-mentioned reference and reported in mass fraction. Metrological traceability is to the SI derived unit of mass fraction expressed as percent. The precision values are derived using ISO Guide 35, the Guide to Uncertainty Measurement, and ANOVA. Refer to your test method or instrument manufacturer for the expanded method derived uncertainty if needed. When necessary, professional judgment is applied toward consideration of data and statistical information. The statistical analysis and the overall direction and coordination of the analytical measurements leading to certification were performed by K.E. Dyer, Chief Chemist, at Alpha Resources.

Sample size and minimum sample size for this data was 0.05g nominal. Refer to your instrument manufacturer or test method for minimum and typical sample size that can be used. This bottle contains 50g of fine powder to be used directly from the bottle without preparation. Keep sealed tightly and store under normal laboratory conditions. Values are valid until March 14, 2028.

The material used in production of this standard was identified in accordance with ARI-LAB-603. The samples for round robin testing were selected in accordance with ARI-LAB-625. The above values relate only to the material used to produce this standard. Remedies for any claimed defect in this product will be limited to product replacement or refund of the purchase price. In no event shall Alpha Resources be liable for incidental or consequential damages. This certificate cannot be reproduced except in its entirety.

This is a Certified Reference Material and is traceable to the above-mentioned standards. For good laboratory practice, it is recommended that all standards be verified as fit for purpose prior to use. This CRM was produced in accordance with ISO 17034 accreditation (RMP) issued by ANSI-ANAB, refer to certificate AR-1920.

**Certified June 26, 2023**  
**Updated February 21, 2025**  
**Kent Dyer**  
**Chief Chemist**