

NE-24-34975 – Development of Oxygen IR Calibration Standards for High-Purity Chloride Salts

Sigma-Aldrich Inc doing business as MilliporeSigma (MS), located in St. Louis, MO, impacts life and health with science. Their vision is a world where our innovative products, services, and digital offerings help create solutions for people globally and a sustainable future for generations to come.

Corrosion caused by oxide impurities in molten salts, such as chlorides and fluorides, presents a significant challenge in various high-temperature industrial applications in the nuclear energy field. Most high-purity salts manufactured lack oxide impurity data. MS must be able to accurately test for the content of oxide impurities in salts, so that further purification and drying can be conducted as needed.

Idaho National Laboratory (INL) is only one of two labs that can test the oxygen content in chloride salts. MS will partner with INL to verify alignment of test results between MS and INL regarding oxygen content of very high-purity chloride salts utilizing oxygen analyzers, identify, capture, and document best practices into a preliminary framework for a standardized test method and down-select appropriate materials and certification specifications for chloride salt reference standard(s).