

Molten Salt Loop & Operations Review*

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ABSTRACT

A thermal convection loop is being designed for evaluating corrosion behavior of fluoride salt systems at high temperatures. The loop test configuration allows for inclusion of specimens in the vertical hot and cold sections to measure mass transfer effects and electrochemical probes to measure the relative oxidizing potential of the salt. Impurity control in the salt and on the internal loop surfaces is emphasized to avoid initially high corrosion rates. Hastelloy N was chosen as the material of construction for testing up to 800EC and the corrosion, physical and mechanical properties of Hastelloy N are reviewed. Procedures and other information relative to salt production and purification; loop design and fabrication; loop instrumentation; loop operation including cleaning, filling, operating, and shutdown; post-test loop evaluation; and environmental, health, and safety issues are discussed.

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