

Sintering Glass Powders for Nuclear Waste Management



BENEFITS

- First developed glass waste form for radioiodine
- Can be formed into large blocks for long-term storage
- Temperature range is much lower than traditional glass waste form retorting
- Forms can be customized for a particular repository environment
- Can be fabricated with traditional glass technologies
- Material capacity is much higher than traditional waste-containing materials

APPLICATIONS

- Nuclear waste disposal
- Mining
- Refining

U.S. PATENTS PENDING ON SD#

- 11202

Summary

Sandia has developed the very first glass waste form for the long-term sequestration of radioiodine. The gaseous forms of radioisotopes that are isolated in the course of nuclear fuel processing must be captured in a form that is suitable for long-term storage. Storage through powders can create the potential risk of release in a radioactive "cloud" causing widespread contamination.

Incorporating most radioisotopes into glass waste forms is a convenient and acceptable technology; however, iodine has not been able to be contained in traditional glass waste forms until now. This newly developed material can be processed into large cohesive blocks or ingots suitable for long-term storage or geologic sequestration while keeping the material confined during its long half life.



Licensing & Partnering Status:

Various license and partnering options are available. Please contact the Intellectual Property department to discuss.

Technology Readiness Level:

Sandia estimates this technology's TRL at approximately level 3. Active research and development has been initiated and laboratory-based studies are being conducted for proof-of-concept validation.



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