Title	Assessment of weathering and leaching rates of Thule hot particles
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Abstract

Within the current project a methodology for separating actinide particles originating from the Thule 1968 accident has been developed. Particles were completely isolated in water using visual and radiometric methods. The particles were attached electrostatic to a plastic support and could easily be moved to any container for leaching studies or other type of studies. Leaching and dissolution studies performed within the project indicate that some particles are relatively easily destroyed or leached while others are more refractory. The results shows that even though the oxide particles are hard to completely dissolve they release material even when exposed to weak solvents like water and salt solutions. Exposures to lung simulant fluids show relatively slow dissolution rates comparable to what is found using only water. Sequential extraction of particles shows that variation between particles is very large; some dissolve easily while some does not. Of radiological importance is the disruption of particles when exposed to dissolution.

Key words

Thule, actinide particles, hot particles, plutonium, uranium, Pu-239, U-235, leaching, lung simulant fluid, stomach simulant fluid