



Hydroxyapatite Barriers for Radionuclide Containment

BENEFITS

- Contains and “holds” compounds that react with apatite which are hazardous to the environment
- Most effective method in the cleanup at Hanford site
- Creates a barrier in soil and groundwater

APPLICATIONS

- Ground and surface water protection of contaminated sites
- Radioactive waste clean up
- Containment of radionuclides

PATENT NUMBER

- 6416252
- 6592294

SD#

- 6412
- 6883

INTELLECTUAL PROPERTY & LICENSING CONTACT

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Summary

Apatite, which has been shown to effectively bind and immobilize radionuclides, can also be used to form barriers in water and soil in contaminated environments. The apatite barrier is formed in situ in soil by injection of chelated calcium, phosphate and fluoride solution. In situ formed apatite can be used to sequester actinides, strontium, lead, heavy metals and other compounds that react with apatite.

This technology has been effectively applied at the Hanford site to create a barrier between the contamination areas, ground water, and nearby water sources such as the Columbia River. Due to the rising and falling of the water levels of the river, containment and an effective barrier is imperative to protecting from the spread of contamination. This technology has been shown to reduce the risks associated with sites containing hazardous materials and can be a critical component in maintaining a safe environment, protecting natural resources, and further mitigating associated risks.



Licensing & Partnering Status:

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

Technology Readiness Level:

Sandia has shown that this product has been successfully tested in a real-world environment under relevant conditions as illustrated at the Hanford site. Application further demonstrated to be effective with little to no changes necessary in this technology.



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