Safety functions derived from geochemistry for assessment of final disposal of high-level radioactive waste.

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The final disposal of high-level radioactive waste shall isolate radionuclides from the biosphere. The most important barrier of the multi-barrier system is certainly the confining host rock. These barriers and their components have several safety functions to prevent or delay the release of radionuclides from the waste to the biosphere. Geochemical processes within the waste, waste matrix and the near field provide several safety functions which can be characterized in different terms such as effective, latent, supplementary or reserve safety functions and used to derive scenarios.

A preliminary concept with focus on geochemistry for integration and application of safety functions in evaluation of final disposal systems will be discussed.