Studsvik

inDRUM Technology

Studsvik's inDRUM technology turns problematic waste into manageable solutions.

About inDRUM

Studsvik has developed and patented a thermal decomposition waste treatment technology suitable to problematic radioactive wastes typically found in the nuclear industry,including R&D activities and hospital waste.

Figure 1 - Waste before and after applying inDRUM technology.

The Process

The inDRUM process utilizes heat and a controlled environment to treat containerized radioactive wastes by means of in-container thermal treatment to remove the free liquids, destroy organics, and deactivate corrosives and reactive materials from the containers.

The resultant product is a dry, inert, inorganic waste material. Treatment is achieved without removing, handling, or sorting wastes from the container. In most applications, wastes are treated in the original waste container packages. We can prove the process using simulant materials at our demonstration facility in Sweden.

Features

- **Make the waste disposable** - inDRUM removes radioactive wastes characteristics that are unacceptable for shipping, long-term storage and direct disposal.
- **Reduce the volume** - Gives volume reduction often of >90%
- **Minimal manual handling** - No requirement for sorting or opening.
- **Minimize worker radiation exposure** - Keeping workers safe at the site.

Figure 2 - inDRUM facility testing.

Studsvik has a Full-Scale inDRUM demonstration facility located in Nyköping, Sweden.

Figure 3 - inDRUM demonstration facility located at the Studsvik site in Sweden.

Validation

With over 20 years of experience testing the inDRUM process, Studsvik has developed a deep understanding and expertise in treating waste. We understand what happens to the waste during all stages of the process and where the radionuclide's are captured during treatment.

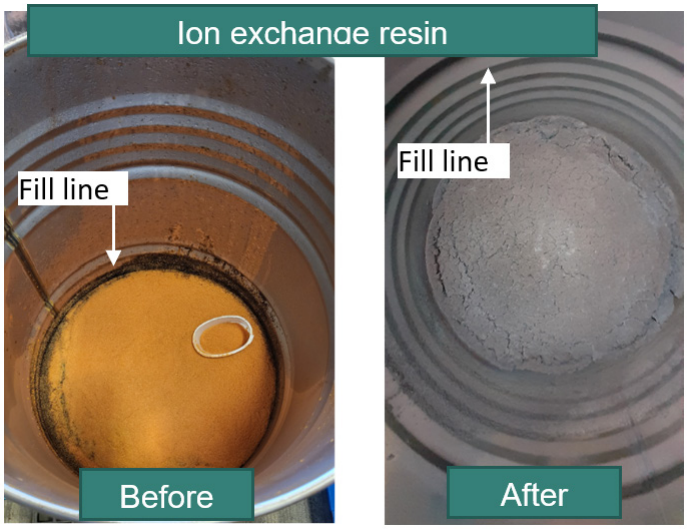

Figure 4- Ion exchange resin using the inDRUM technology.

Key Benefits

- Final waste forms are acceptable for land disposal and transport
- Significant volume reduction is achieved
- Drums managed with minimal to no handling of containerized waste
- Complete destruction of nitrates and organics resulting in a stable waste form
- Removal of free liquids through evaporation
- Nitrates are thermally decomposed into gaseous NOX
- Corrosives and reactives are converted to an in-container non-hazardous oxides or carbonate compounds
- Sealed containers (i.e., aerosol and paint cans) are breached

Figure 5 - inDRUM facility

For further information please contact:

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