

« Solidify and stabilize your liquid wastes »



Solidification of waste streams with the Nochar's polymers

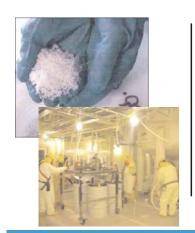
Nochar products (USA) are engineered polymers allowing via **irreversible** mechanisms to absorb organic and/or aqueous liquids thus generating a **solid and stabilized** waste.

Applications

- Mixed sludge types; oil, oil-water with other solid contaminants such as salt, sand, dirt
- Pump and machine oil, various types of synthetic and standard oil
- All organic liquids including scintillation cocktails, tri-butyl phosphate (TBP)
- Aqueous liquids; water, low pH acid, high pH alkaline solutions
- Resin bed sludge, activated carbon slurry

The Nochar polymers offer an innovative solution to nuclear sites that require a treatment process to deal with complex organic/aqueous waste streams

Multiphase liquid wastes
Suspended matter
Various composition uncharacterized



Nochar's product:

N910 polymer, applied to all organic liquids Thermoplastic elastomer: styrene block co-polymer Mechanical and chemical process N960 polymer, applied to all aqueous liquids 100% cross linked, co-polymer of acrylamide Mechanical process N935 polymer, applied to light alcohols

IMPLEMENTATION

Quick reaction

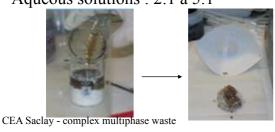
Slow speed mixing

Ratios "liquid:polymer" vary depending upon the chemical composition of the waste

• Oil: 1:1 à 3:1 TBP: 1:1 à 2:1

Mixed sludge types : 2:1 à 4:1

Aqueous solutions : 2:1 à 5:1









ADVANTAGES

Stabilized final waste (no degradation), nonleaching and solid,

No heat build up, no heat release in the process; non toxic and worker friendly products High **Resistance to radiation - 2.7** MGray Cobalt 60, gamma source

If apart from **organic** liquids, the liquid contains an aqueous phase, a combination of various polymer materials is used

Disposal options:

- Incineration: Cyclife (France, Sweden) and Belgoprocess (Belgium)
- Encapsulation in cement
- Direct disposal into carbon steel drums or high integrated (HIC) liner then into drums

REFERENCES

◆ France : ORANO, ONET

◆ USA: Laboratories DOE: ANL, ALNL, ORNL...

◆ Russia: V.G. Khlopin Radium Institute, Siberian Chemical Combine (SCC),

◆ China: China Institute of Atomic Energy (CIAE), CNTC, ...

◆ UK: Nuclear Decommissioning Authority; Sellafield, Dounreay, Harwell Sites

◆ Belgium : SCK- CEN

♦ Italy: SOGIN

Canada: Canada Nuclear Labs (CNL), Ontario Power Generation

Armenia, Australia, Brasil, Norway, Romania, Slovakia, Slovenia, South Africa, Sweden...

CONTACT

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