

Recycling of Functional Fluids (Emulsions) with TUF Technology

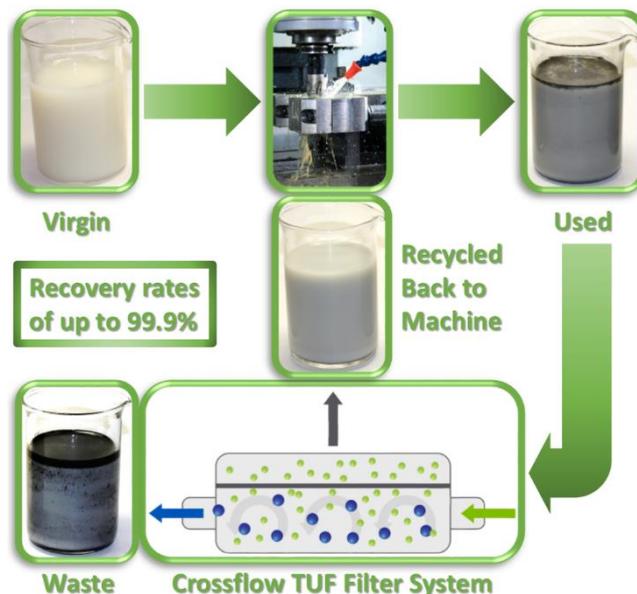
TUF Filtration Technology

CRS Tough Ultra Filtration (TUF) Technology is a proprietary, highly engineered cross flow filtration system. During the cross flow filtration process the feed stream (used fluid) is filtered into a permeate (re-usable fluid) and a concentrate (contaminates). The degree in which filtration occurs is based on the membrane porosity. The TUF system can be configured as microfiltration, ultrafiltration or nano-filtration. Clean fluid and additives pass through the membrane while the contaminants remain in the feed stream. Depending on the objectives, the contaminants can then undergo another filtration process or continue to be processed using another filtration/ separation equipment process. The TUF Filtration process can be used with multiple fluid types.

Within CRS, this technology has been successfully used on all fluid types over the past 7 years. Incorporation of the TUF system will eliminate hazardous filter aids associated with stack and paper filtration methods. This eliminates the operating cost associated with spent media disposal. The TUF membranes are regenerated using a clean-in-place procedure that is specifically developed for your application.

Advantages over competing technologies:

- Defined pore sizes in 5 different versions (A, B, C, D and N) to design the system on customers' needs
- High resistance against aggressive media, high pressures or temperatures
- Proprietary self-cleaning included
- Customized to generate the highest flux rate and the lowest cost of operation
- No chemicals or disposable filter media had to be used
- Depending on emulsion mixture (oil content, additive package) recovery rates of up to 99.9% are possible



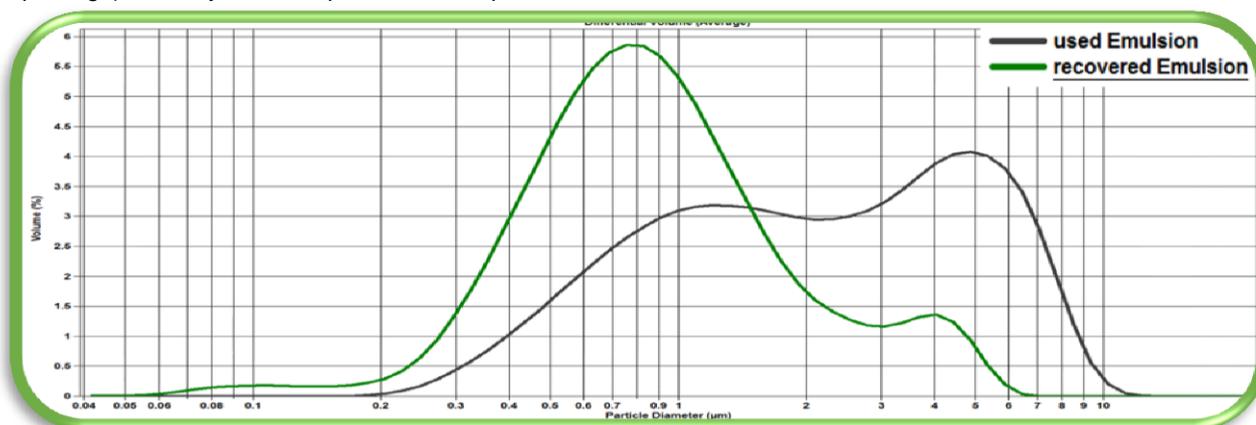
Flexibility:

Add-Ons allow to control:

- Higher solid & free oil content in feed stream
- Hardness control
- Additive adjustment
- Fluid Management

Quality:

- Particle load can be reduced from up to 5% to 0.1%
- Free oil (such tramp oil) removal from up to 5% to 0.2%
- No loss of soluble oil in the emulsion



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