

White Paper

Title: Why Aqueous Cleaners are so Effective Revision Date: September 12, 2024

Why Aqueous Geaners are So Effective: Emulsification versus Displacement Geaning Considerations

There is a relationship between the deaning bath, its temperature, and surface tension. Wetting agents or surfactants lower the surface tension of solutions. This improves wettability to allow penetration into soils and their removal from the substrate. The ultimate application and deaning demands for the intended cleaner determine the surfactants added singularly or in combination with others. Typically, small concentrations dramatically reduce surface tension, beyond which larger doses, at best, minimally affect surface tension reduction.





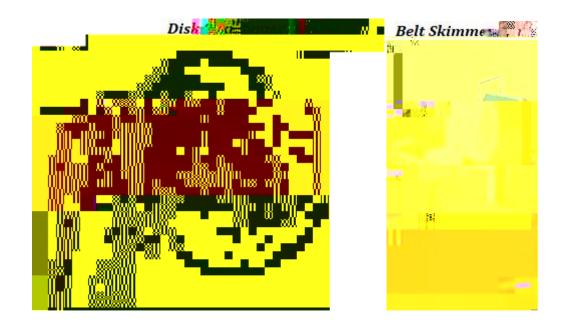
White Paper

Title: Why Aqueous Cleaners are so Effective Revision Date: September 12, 2024

For approximate oil removal and disk selection,

Disk Diameter (inches)	Disk Dia. Inches Below Surface	Gal/Hour Skimmed
12	4.5	1-2
18	7.5	3-5
24	10	8-10

A shallow immersion into the deaner surface better conforms to a smaller diameter disk skimmer and belt skimmer. The disks in the above example range in weight from 13-19 lbs. with a speed of 7-8 RPM. Stainless steel disks are often preferable because they provide the best service life and durability, especially when warping. Other viable mechanical oil-removal devices include coalescers and ultrafiltration.

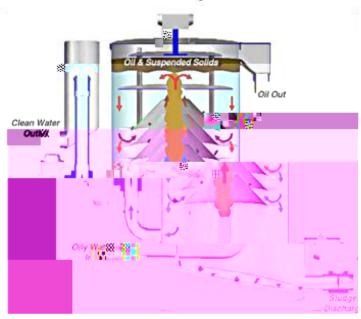




White Paper

Title: Why Aqueous Cleaners are so Effective Revision Date: September 12, 2024

Coalescer Removes Oils Soils from the Soak Cleaner





]A frequent question: why bother with a displacement soak deaner if there are mechanical equipment options to extend the life of the emulsion soak deaner viably? It should be noted that the coalescer and ultrafiltration unit are both equipment purchases. The coalescer would range in several hundred to a few thousand dollars. A large process operation could produce a reasonable payback. In fact, the coalescer could be moved to different deaner tanks in the metal finishing operation.



