

## Steps of Scrapped Fluid Replacement

Thermal degradation and oxidization of heat transfer fluid occur during operation, leading to fluid scrap. Without replacing, the scrapped fluid adversely affects the heating system. When the fluid is up to the standard of scrapping, its viscosity, carbon residues, flash point and acid value will all exceed the certified values, causing severely coking, and decreasing system security and heat transfer efficiency. Replacement of scrapped fluid without delay is the foundation of system safety.

Schultz engineer recommends: Regular system maintenance and fluid sample test are both methods of detecting fluid quality. Related measures should be taken when some indexes are up to their scrapped standards. The increase of fluid viscosity and solid content accelerate fluid degradation, decrease fluid heat transfer coefficient, add fluid duration of stay in pipeline and increase fluid film thickness and temperature, leading to fluid degradation acceleration, low boiling point substances increase and fluid flash point decrease. Fluid acid value exceeds its reasonable range indicating fluid oxidization or process contamination. For these cases, measures like enhancing air exhaust, filtering and filling up can temporarily recover and improve fluid performance. If multiple indexes are all up to their scrapped standards, the service life of heat transfer fluid is end. Fluid aging caused by several reasons indicates potential fluid replacement.

First step of fluid replacement is to let out the used fluid completely. Check fluid MSDS before operating and adopt the protection work. Pay attention to fluid leakage and adopt nitrogen purging in necessity.

Second step of fluid replacement is to rinse fluid system with cleaning agent. Mechanical or chemical decoking can be adopted when system has severely coking problems. It is better to get help with professional rinse company. Check the whole system before filling up new fluid, especially in some low flow areas like storage tank and expansion tank.

Last step of fluid replacement is to fill up the new heat transfer fluid. Choose fluid with good properties including excellent vaporability, safety, heat transfer efficiency, thermal stability and fine refining depth. Strictly stick to manufacturer's requirement, and heat fluid in the process of dehydration and light substance removal, then increase fluid temperature up to its operating temperature.