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### DESCALING AND RUST REMOVAL SERVICES FOR TWIN SCREW EXTRUDER BARRELS

Scale or lime-scale is a hard, rock-like deposit of calcium or magnesium salts that forms in heat exchangers, machinery cooling channels and cooling tower packing as a result of heat and increased concentration factor.

Rust normally forms within metal cooling channels when there is retention (non-flowing) of water for a period of time. Even stopping the heat exchanger, machinery cooling channels and cooling tower for 1 day will enable rust to form

Scale formation and impregnated rust impairs heat transfer, interferes with flow and cooling, and can be a breeding ground for legionella bacteria. If these deposits are left to accumulate, water flow is restricted and piping, water channels and water jackets become plugged. This is very common in extruders and heat exchangers due to heat and increased concentration factor. Ultimately, ignoring scale and rust depositions can lead to the destruction and possible failure of the barrels. As there are no way to repair the cooling channels of a twin screw extruder barrel, it becomes very costly to replace a barrel due to scales and rust.







Examples of Scales and Rust build-ups in heat exchangers and cooling channels

### **OUR SERVICES**

We offer chemical descaling and rust removal on extruder (single and twin screw) cooling channels via chemical flushing. During the flushing process, scales or lime-scale are dissolved with chemicals while rust pieces will be flushed away as the the scales are being removed. The chemicals used are water-based organic compound enhanced with wetting agents, corrosion inhibitors and degreasing compounds. It is designed to penetrate and remove encrusted lime scale, rust, dirt and corrosion by-products from water-wetted internal surfaces of commercial and industrial processing equipment.

**Wrong** selection of industrial treatment chemicals are useless rather it can be harmful for the systems and can cause damage to your cooling channels.



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# <u>Descaling and Rust Removal Service at one of our customers with Twin Screw Extruder</u> Coperion ZSK 58 Mega Compounder



Colour of chemical before descaling



After descaling (with dissolved scales)



Scales mixed with rust at the flushing outlet



Scales and Rust pickups (inside cooling channel of barrels) at the end of service (not including dissolved scales in chemicals – dissolved scales in chemicals is estimated to be around 0.5kg)



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### Our other services (with our partners):



**Descaling of machinery cooling channels** 



**Descaling of Heat Exchangers** 



**Descaling of Cooling Tower** 



**Barrel Cooling Channels** 



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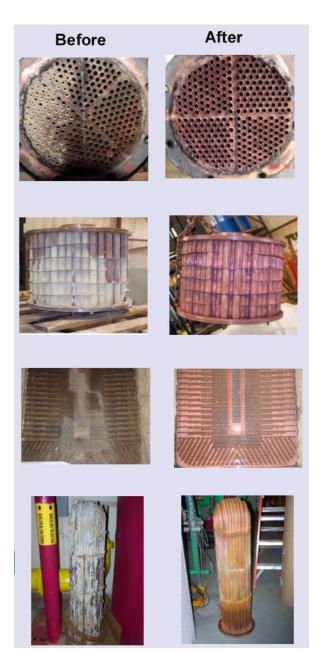
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The chemicals used for descaling and rust removal are :-

- 1) Safe to surfaces of materials like
  - a) Steel
  - b) Iron
  - c) Brass
  - d) Copper
  - e) Plastic
  - f) Rubber
- Biodegradeable Safe for the environment and can be discharged to normal drain after use
- 3) Approved and Used by
  - a) British Royal Navy
  - b) ExxonMobil
  - c) Ford Motors
  - d) General Motors
  - e) Royal Australian Navy
  - f) US Navy
  - g) Coca Cola and many others

#### **DISPOSAL OF FLUSHING CHEMICALS AND SAFETY**

As the sewage regulation prevents anyone or any company to dispose activated descaling chemicals (usually acidic or alkaline based) directly into the drain, our services include neutralizing used descaling chemicals before disposing to the drain at site. The neutralizing process starts from the end of flushing services which neutralizes the chemicals while it is still within the heat exchanger, cooling channels and cooling towers. By doing so, it also protects the cooling channels from further flash-rust.



All of our chemicals are imported from USA / Germany and is safe and comes with MSDS.



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We also provide optional closed loop water system water treatment services

We also provide other equipment (heat exchanger, single screw extruder, cooling towers) descaling and rust removal services, kindly contact us for more information.