



Working hard for clean solutions

- cleaning
- passivation
- derouging and repassivation

for industrial equipment and stainless steel systems



Rouge – a latent risk for industrial equipment and stainless steel systems

Many industrial pipe systems and containers are made of stainless steel. At the high operating temperatures that are usual, pure media (WFI- water, pure steam) can cause surface corrosion on the used stainless steel. The typical product of this corrosion (reddish particles with a rich iron oxide content) is called the rouging effect, after the appearance of the surface. Passivation of new systems is an important factor in the prevention of rouging.

Passivation of new systems: get off to a good start

To allow rouge as little opportunity as possible right from the outset, it follows that new systems should be professionally passivated as soon as they have been installed. The use of suitable chemicals during the passivation of new systems also increases the ratio of chromium to iron on the surface, which in turn reduces susceptibility to corrosion. Even so, it does not offer protection for ever. Various factors such as an insufficient percentage of oxygen combined with warm or hot operating conditions can cause rouge to form again after a certain time.

Sterile Systems - a „must“ for a pharmaceutical production

The pharmaceutical and biotech industries mainly use stainless steel pipe systems. But "stainless" does not mean protection against rouge. On WFI systems, layers of reddish coating are visible in most cases, while on pure steam systems, the coating that disrupts the system appears as a rough black layer that is firmly attached to the inside of the pipe. These situations often produce rouge particles, some of which can be carried over by the flow of product into other areas of the pipework where they may be deposited. The results: The system and its products can be contaminated. Especially in the pharmaceutical sector and in the biotech production, the loss of the defined sterile conditions in the system is absolutely intolerable.

Regular maintenance for lasting success

If you don't keep at it, you get rusty - that's the motto with rouge. Even after successful passivation, the protective layer of chromium oxide can be eaten away after a certain time and rouge can start to spread again. So have your system inspected and routinely maintained on a regular basis. Depending on the formation of the rouge, we recommend a derouging/repassivation process as part of a routine procedure defined by SOPs every 6 to 12 months. This will guarantee your system against serious formation of rouge as well as the latent damage and increased costs that can ensue. However, a successful procedure calls for a great deal of know-how and experience - assets that our staff can always offer.

Ateco Services AG – A partner you can rely on

ATECO is your partner you can rely on for any kind of rouging problems. A high level of expertise and know how especially in the pharmaceutical sector and biotech industry as well as in passivation of new systems we combine with innovative ideas and latest technology. Our wide-ranging know-how includes following sectors:

- treatment of high-quality stainless steel surfaces
- cleaning, derouging and passivation operations
- planning, qualifying and validating for the pharmaceutical sector.

Working hard for clean solutions - Our range of services:

- cleaning stainless steel pipe systems
- passivation of new systems
- derouging and repassivation of existing systems
- documentation for all working processes and chemicals
- treatment of waste water in line with environmental legislation

What's the innovation here? We offer you a complete service, including fully comprehensive documentation for validation purposes of all working processes and customised solutions for rouging problems of every kind.





Documentation gives safety

Full documentation of all the actions taken and every working step are our preferences. In documents, known as SOP's (Standard Operating Procedures) we accurately define and describe the procedure for every job that is to be undertaken - from the first analysis all the way through to handover of the cleaned or passivated system. We issue you with protocols for all the cleaning, derouging and repassivation operations, giving you a guarantee that the work has been completed in a way that can be validated.

The chemistry is right

Our chemicals and cleaning products are manufactured using processes that conform to GMP, in FDA/ISO-registered production facilities with complete batch traceability, documentation and an analysis certificate. This is how we guarantee the absolute safety of the sources for our chemicals, in order to rule out any risks. If you wish, ATECO will supply you with precisely defined chemicals for you to carry out any of these operations yourself.

Don't worry about disposal

As part of all our operations, ATECO offers you the safety of proper disposal of the chemicals and the waste water, and this is confirmed to you with a certificate or protocol.

Our areas of operation at a glance:

- stainless steel pipes
- stainless steel pipe systems
- stainless steel containers
- WFI systems and
- pure steam systems for the pharmaceutical sector
- product pipes/systems
- heating plants and systems



Ateco Services AG

The partner you can rely on for industrial equipment and stainless steel systems



Encyclopedia of technical terms

Rouge

is a corrosion of high-grade steel surfaces in pipe systems and containers. Also stainless systems are concerned. "Stainless" does not mean protection against rouge. High temperatures, inadequate passivation, incorrect weld seams and/or low-quality material can encourage the development of rouge.

Cleaning

The systems have to be thoroughly cleaned before a derouging or passivation operation. ATECO cleans with alkaline chemicals that will not attack the system. They can be neutralised and disposed of without harming the environment.

Derouging

The layer of rouge has to be chemically removed, this procedure is known as derouging. The entire system is flushed through in a closed circuit for this purpose.

Passivation/Repassivation

As well as iron, stainless steel alloys also contain chromium, which together with oxygen builds up a stable layer that is rich in chromium oxide. This passive layer (as it is known) protects the system against rouge and can be additionally reinforced by chemical passivation. The use of suitable chemicals also increases the ratio of chromium to iron on the surface, which in turn reduces susceptibility to corrosion. Since the protection does not keep eternal, the only way to guarantee a safe solution is regular repassivation of the system.

Validation

Proof in agreement with the principles of good manufacture practice (GMP) that procedures, processes, articles of equipment, materials, processing steps or systems actually lead to the expected results.



Select a clean solution

Due to our different bases in Europe we are always close to you and we are able to react flexibly on your inquiries.

Do you need help or any information, don't hesitate to contact us. We advise you gladly.



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