

Which is the method for stainless steel pickling?

Generally, for pickling stainless steels, mixtures of hydro fluoric and nitric acids are used in different proportions.

Since the properties of annealing scales are different, the pickling processes will vary depending on the source of product.

Stainless steels are difficult to attack and acidity is not enough to solve them as it occurs with ordinary steels. It is needed an strong oxidizing agent (HNO₃), also helped by the effect of a metal complexing agent (HF).

The activity of the pickling bath is maintained while HNO₃ and free HF (uncomplexed) concentrations do it. After a while, these concentrations decrease and acid efficiency attenuates, losing activity.

A quick and approximate characterization could be based on

the density measurement of the tank solution, since the metal loaded will increase this density. It should be set the limit value.

Given the nature of the spent acid, its treatment requires neutralization, and precipitation of the fluoride acid as F₂Ca, and the metals as hydroxides, using lime slurry.

Treatment by a waste management company is advisable, taking into account the composition of the residue.

First rinse water may be used until the level of contamination of the same, be aggressive enough to attack steel surface (an approximate control could be the pH of water, not permitting it reaches below PH 2).

Anyway, it is very important to eliminate acid water from surface of the steel, with several rinses with pressured clean water

Detailed information could be found in the document "Pickling and Passivating Stainless Steel" at www.cedinox.es.



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