Features

Avesta Bath Pickling is used to restore larger stainless steel surfaces that have been damaged by working operations such as welding, forming, cutting and blasting. The bath also removes welding oxides, the underlying chromium-depleted layer, micro-slag particles and other contaminants that may cause local corrosion. To assist pickling, this process may sometimes be combined with some form of simultaneous mechanical treatment, for example brushing.

After pickling, the workpiece should be thoroughly rinsed with tap water. The best results are achieved by using a high-pressure water jet. This operation instantly passivates the steel surface. In this way the surface is passivated quicker – otherwise the passivation reaction may take up to 12 hours.

Avesta Bath Pickling follows the recommendations of ASTM A-380 A.1 and BS CP-312.

The bath pickling operation can be improved by using equipment for recycling the consumed acids and for stirring and heating the bath.

Products and equipment

- **Avesta Bath Pickling 302** is a concentrate that should be diluted with water depending on the steel grade.
  Standard steel grades: Mix 1 part 302 into 3 parts water. A further dilution can be done if longer pickling times can be accepted.
  High alloyed steels such as duplex grades and austenitic grades for use in severe corrosive conditions (904L): Mix 1 part 302 into 2 parts water.
  Very high alloyed steels such as the super-austenitic (254 SMO) and super-duplex (SAF 2507) grades: Mix 1 part 302 into 1 part water.
- **Avesta Acid Recycling unit** makes it possible to recover up to 95% of the pickling acids by separating the free acids and the metal salts. This means an important reduction of waste quantities and acid consumption.
- **Avesta-BML Neutralising Facility** is a batch working facility for treatment of pickling acids and rinse water.
- **Avesta-BML Bath Stirrer**
- **Avesta-BML Bath Heater**

Characteristics

USAGE

The bath is recommended for dip pickling of small objects and for pickling surfaces that are time consuming to brush or spray pickle. Bath Pickling 302 can also be used for the cleaning of pipe systems.

SHELF LIFE / HANDLING

The products have a shelf life of one year when stored properly. Exposure to high temperatures, such as in direct sunshine, should be avoided, as this may damage the product.

SAFETY

Hexafluorine® in 500 ml or 5 l packages should be readily available when using the bath pickling to deal with acid splashes on the skin or in the eyes.

PICKLING TIME

The reaction time depends on the steel grade, contamination, bath temperature and age of the bath solution.

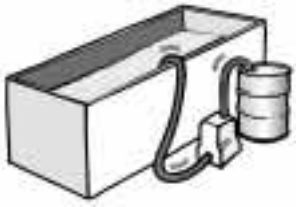
WORKING LIFE

The effective working life of the bath solution is determined by the amount of acids and free metals. The bath should be analysed regularly and if possible regenerated with an acid recycling unit.

CHEMICAL PROPERTIES

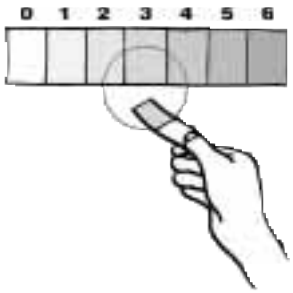
Composition	Hydrofluoric acid (HF) Nitric acid (HNO_3)
Form	Liquid
Density	1.25 – 1.35 kg/l
pH	0
Flammable	No

Instructions for use



1. Mix the bath by **adding the solution into the water,** not the other way round! The proportions depend on the steel to be pickled.

2. Pre-clean the objects from grease and oil before pickling by using Avesta Cleaner. Then sink the entire object into the bath.



3. Analyse the bath content of acids and free metals regularly to maintain optimal bath composition.

4. Allow sufficient reaction time depending on steel grade, temperature etc. Rinse with high-pressure water jet after pickling.

Neutralisation and disposal

The waste water produced by pickling contains acids and should be treated with Avesta Neutralising Agent 502 or with slaked lime to a pH-value of 7 – 10 before discharge. The neutralisation agent also precipitates heavy metals, and the sludge should be sent for deposition according to local regulations.
Avesta-BML Neutralising Facility is a system for batch-wise treatment of larger quanitites of pickling acids, cleaners and rinse water.

Packaging

Avesta Bath Pickling is supplied in 33 kg, 238 kg and 1 190 kg polyethylene drums/containers, UN-approved for hazardous goods.

Other information

For further information, see also "Avesta Pickling Handbook", "Avesta Guidelines for Planning and Designing a Pickling Workshop" as well as Material Safety Data Sheets (MSDS) for the products.

Storage

Avesta Bath Pickling should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorised persons.

The products are perishable and should not be kept in storage longer than necessary. They have a maximum shelf life of one year when stored at room temperature.

Worker safety

Hexafluorine® should be readily available when using the bath pickling. The 500 ml or 5 l content has been optimised to decontaminate larger acid-splashes caused by bath pickling.
Protective clothing. Users should wear acid resistant overall, gloves and rubber boots. Goggles or face mask should be used and, if necessary, suitable respiratory protective devices (chloride type filter).

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