

## GreenOne® Pickling Spray 220

### Light pickling – NOx emissions reduced by 90%

In collaboration with the Stainless-Steel Industry, we have developed the Avesta GreenOne® Pickling Spray 220.

Stainless steel pickling processes are subject to strict regulations, especially concerning harmful HF (hydrofluoric acid) and NOx (nitrous oxides) emissions. Meeting these regulations is essential to be compliant with HSE limits. For the benefit of the people & the environment.

With Avesta GreenOne® Pickling Spray 220 strict environmental & safety demands can be met & besides that, there is a well-defined scope of application.

#### Standard applications

The pickling spray restores stainless steel surfaces that have been damaged during fabrication operations such as welding, forming, cutting, and blasting. It removes weld oxides, the underlying chromium-depleted layer and other defects that may cause local corrosion.

#### Typical GreenOne® 220 applications:

##### Pickling

- » Standard austenitic steel grades such as 304
- » Cold rolled plates with bright 2B finish
- » Light layers of welding oxides (e.g. manual TIG welding)

##### Cleaning

- » Suitable as a heavy-duty surface rust remover for austenitic and duplex grades

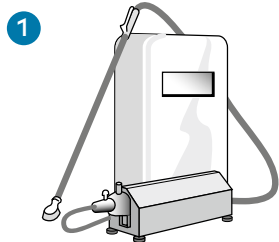
##### Benefits

- » very low NOx emissions for workers safety & less environmental impact
- » very low HF emission for workers safety & less environmental impact
- » lower nitrate and HF levels in the wastewater
- » up to 30% reduced consumption due to its superior viscosity
- » perfect adhesion on the surface
- » supports a natural appearance of the base material – no/little whitening effect
- » Easy to use, doesn't dry out. Can be used for overnight pickling. Easy to wash-off

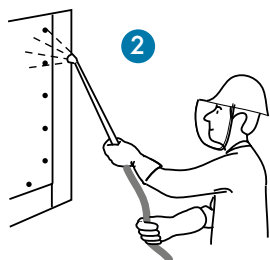
Used for the right application, Avesta GreenOne® Pickling Spray 220 can significantly reduce the Total Cost of Ownership (TCO).



## Instructions for use



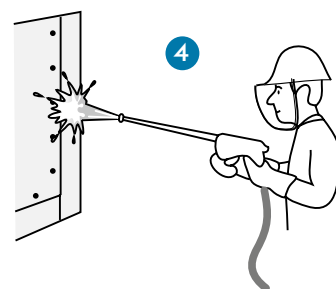
1. Apply all chemicals by using an acid resistant pump system like Avesta SP 25. Start with pre-cleaning to remove oil and grease by using Avesta Cleaner 401 and then rinse off with water.



2. Stir the pickling spray before usage. Apply with SP 25 and spray evenly over the entire surface.



3. Typical reaction time for standard steel grade 304 is 80 min at 20°C and 40 min at 30°C. The pickling time may vary for the same steel grade depending on surface roughness & thickness of welding oxides. If welding oxides are not removed, increase the time or repeat treatment until satisfaction.



4. Rinse off the pickling residuals by using a high-pressure water jet. Use deionized water for the final rinsing of sensitive surfaces.

## Packaging

Avesta GreenOne® Pickling Spray 220 is supplied in 20 kg canisters, 220 kg drums or 1200 kg IBCs. Availability of different packaging sizes may differ between markets.

All packing material follows the UN regulations for hazardous goods.

## Storage

Avesta GreenOne® Pickling Spray 220 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorized persons.

The spray separates during storage and hence need to be stirred well before usage. It has a maximum shelf life of 30 months from production date, when stored at room temperature. Exposure to temperatures outside the range of 5°C - 35 °C may damage the product and reduce the shelf life.

## Health & Safety and Environment (HSE)

Safety Data Sheets in your local languages are available on our website:

<https://www.voestalpine.com/welding/global-en/products/consumables/finishing-chemicals/>

## Worker safety

Personal Protective Equipment (PPE) needs to be used. In general, users should wear acid-resistant overalls, gloves, rubber boots and suitable respiratory protective devices.

Emergency showers and eye washers should be available at the workplace to instantly wash off the acids from the affected skin with water. First aid products like Hexafluorine® could improve these first aid measures.

Calcium gluconate gel should always be available at the workplace as a first treatment to apply after washing-off the acids.

Always seek professional medical advice immediately after contact, inhalation, or ingestion.

To have the right preventive measures in place, a regular risk assessment routine – covering both, chemical and general risks – should be executed.

Special conditions may apply from one country to another

## Waste treatment

The wastewater produced when pickling contains heavy metals from the steel and some acids from the pickling product.

The water needs to be treated which can be done in a simple way with Avesta Neutraliser 502 or with slaked lime to a pH-value of 8 – 10 before discharge. A sludge of heavy metals are precipitated and should be deposited according to local regulations.

Further cleaning might be necessary to meet local regulations. Always make sure to be up to date with local regulations and contamination levels allowed for the discharged water.

Empty packaging (HDPE) should be cleaned and recycled.

## Complementary products

**Application of the product:** Avesta Spray System, SP-25 (Art. 59141)

**Agitation of the product:** Avesta Picking Spray Stirrer (Art. 66435)

**Pre-clean:** Avesta Cleaner 401

**Passivation after pickling:** Avesta Passivator 601 or Avesta FinishOne 630.

**Neutralisation of wastewater:** Avesta Neutraliser 502

**Application:** Avesta RedOne® Pickling Spray 240.

For more information, please visit our website: [www.voestalpine.com/welding](http://www.voestalpine.com/welding), where you can find Safety Data Sheets and other useful information.