

Pickling Gel 122

An all-round pickling paste in gel form.

Avesta Pickling Gel 122 is more free-flowing than a standard pickling paste to facilitate the application and to give a high coverage. It can be used to clean with a good result on standard stainless steel grades.

Standard applications

The pickling gel 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.

This gel is universal and specifically intended for standard brush pickling of weld seams and smaller surfaces of standard stainless steel grades. For difficult pickling operations such as high alloyed steel grades and low temperatures, we suggest the Avesta RedOne Pickling Paste 140 as an alternative.

Features

- » Improved pickling result, offers a brighter surface with less dis-coloration than classic products.
- » The transparent gel consistency gives good adhesion to the stainless steel surface.
- » High heat stability, can be used and stored in warmer climates (the gel is heat-stable up to +45°C).



2,4 kg drums



13 kg drums

Photos: Available in several packages
(Sizes may differ from markets)

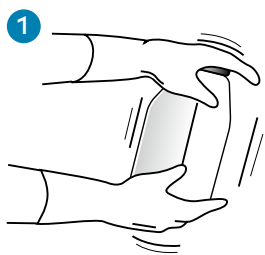


Photo: Bright pickling result



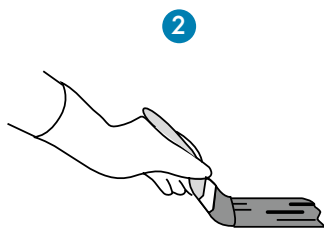
Photo: Site pickling with Gel 122, easy to apply thanks to its free flowing consistency

Instructions for use



1. Pre-clean, remove oil and grease using Avesta Cleaner 401, and then rinse off with water.

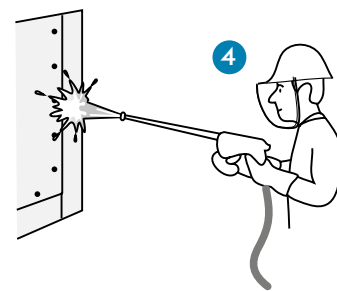
Stir or shake the paste before usage.



2. Apply the paste with an acid resistant brush.



3. Typical reaction time for standard alloyed steel grades like 304 (1.4301) is 60 min. at 20°C and 40 min. at 35°C. The pickling time may vary for the same steel grade depending on surface finish and welding method.



4. Rinse off the pickling residuals by using a high-pressure water jet. Use deionized water for the final rinsing of sensitive surfaces. The waste water should be neutralized before discharge.

Packaging

Avesta Pickling Gel is supplied in 2,4kg and 13kg polyethylene bottles. Availability of different packages sizes may differ between markets.

All packing material follows the UN regulations for hazardous goods.

Storage

Avesta Pickling Gel 122 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorized persons.

The product is perishable and should not be kept in storage longer than necessary. The gel may decompose during storage and hence need to be stirred before usage. It has a maximum shelf life of two years when stored at room temperature. Exposure to higher temperatures (>45°C) may damage the product and reduce the shelf life.

Worker safety

Avesta First Aid Spray 910 (available only on some markets) or Hexafluorine should be readily available to all who work with pickling to use as a first rinse to decontaminate small acid splashes of pickling paste, followed by Calcium Gluconate Gel or Solution to be used as a first aid to treat the HF acid burn.

Protective clothing. In general, users should wear acid resistant overalls, gloves and rubber boots. Face visor should be used and, if necessary, suitable respiratory protective devices.

Special conditions may apply from one country to another. Consult our website where updated Safety Data Sheets can be found.

Pre-cleaning

To further improve the result we recommend to remove present oil and grease before pickling using Avesta Cleaner 401.

Passivation

To further improve the result we recommend a passivation after pickling using Avesta FinishOne Passivator 630, which is a safer-to-use acid free passivation method

Waste treatment

The wastewater produced when pickling contains acids and should be treated with Avesta Neutraliser 502 or with slaked lime to a pH-value of 7-10 before discharge. Heavy metals from stainless steel are precipitated as a sludge, and should be sent for deposition according to local regulations.

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

For more information, please visit our website:

www.voestalpine.com/welding, where you can find Safety Data Sheets and other useful information.



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Avesta GreenOne™ Pickling Paste 120

100% Stainless

A soft pickling paste for light pickling and heavy duty maintenance cleaning!

Many of the processes used for pickling and cleaning stainless steel lead to the development of hazardous nitric fumes. To improve safety when pickling and cleaning, Avesta Finishing Chemicals has developed a unique patented low fuming pickling paste which reduces the toxic nitric fumes by 90 %.

Standard applications

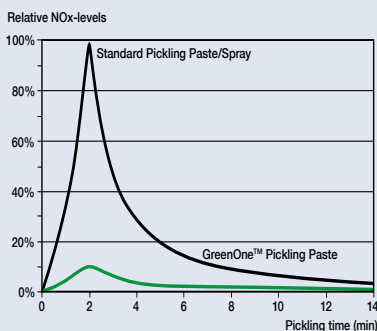
Avesta GreenOne™ Pickling Paste 120 is intended for both the soft brush pickling of weld seams and smaller areas to preserve bright finishes after fabrication and heavy duty maintenance cleaning, rust removal on corrode stainless steel surfaces in service.

Features

- Restores damaged stainless steel surfaces, such as weld seams, by removing weld oxides, the underlying chromium depleted layer and other defects that may cause local corrosion.
- Improved pickling result, preserves a brighter finish with less discolouration than classical products.
- For cleaning of rustier surfaces, removal of coarse surface rust caused by pitting.
- Unique, covered by a world patent.
- Higher yield, decreased consumption, thanks to the visible green colour and its free flowing consistency which facilitates application.



Avesta GreenOne™ Pickling Paste 120 – for both soft pickling and heavy duty maintenance cleaning.



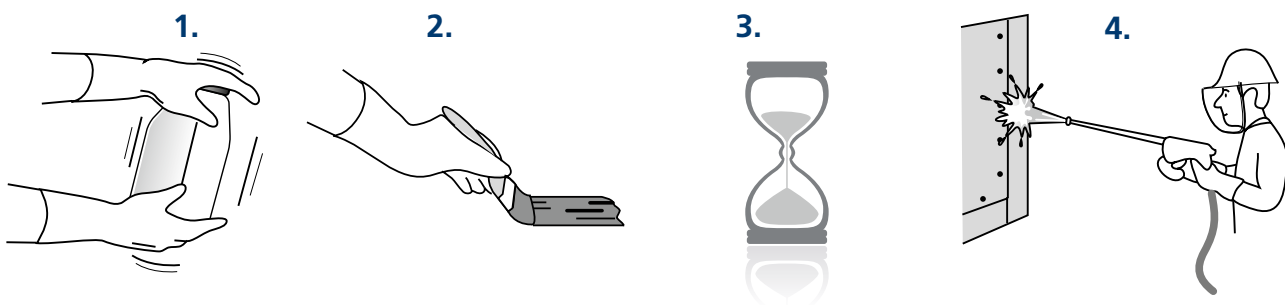
90% fume reduction compared to standard Pickling Paste.



Before and after pickling, Avesta GreenOne™ Pickling Paste 120.

Avesta
Finishing Chemicals

Instructions for use



1. Stir or shake the paste before use.
2. Apply the paste with an acid-resistant brush.
3. Typical pickling time for Steel grade 304/316 is 90 min at 10 °C, 45 min at 20 °C and 20 min at 30 °C. The pickling time may vary for the same steel grade, depending on the surface finish and the welding method.
4. Remove pickling residues using a high-pressure water jet, or with a stainless steel brush and then rinse with water. The waste water should be treated before discharge.

Packaging

Avesta GreenOne™ Pickling Paste 120 is supplied in a 2.4 kg polyethylene container supplied in a 4-pack cardboard box.

All packing material follows the UN regulations for Hazardous goods.

Storage

Avesta GreenOne™ Pickling Paste 120 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorised persons.

The product is perishable and should not be kept in storage longer than necessary. It has a maximum shelf life of two years when stored at room temperature. Exposure to higher temperatures (> 35 °C) may damage the product and reduce the shelf life.

Worker safety

Avesta First Aid Spray 910 should be readily accessible to all those who work with pickling. It comes in a handy 200 ml spray can and the content has been optimised to decontaminate small acid-splashes of pickling paste.

Protective clothing. In general users should wear acid-resistant overalls, gloves and rubber boots. Face visor should be used and, if necessary, suitable respiratory protective devices.

Special conditions may apply from one country to another. Consult our website where updated Safety Data Sheets can be found.

Waste treatment

The waste water produced when pickling contains acids and should be treated with Avesta Neutraliser 502 or with slaked lime to a pH-value of 7–10 before discharge.

Heavy metals from the stainless steel are precipitated as a sludge, and should be sent for deposition according to local regulations.

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

For more information, please visit our website www.avestafinishing.com where you can find Safety Data Sheets and other useful information.

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 **Responsible Care**
Good Chemistry at Work

Avesta
Finishing Chemicals

Avesta GreenOne™ Pickling Paste 120

100% Stainless

A soft pickling paste for light pickling and heavy duty maintenance cleaning!

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Standard applications

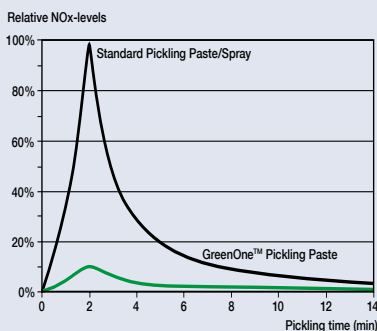
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Features

- Restores damaged stainless steel surfaces, such as weld seams, by removing weld oxides, the underlying chromium depleted layer and other defects that may cause local corrosion.
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- For cleaning of rustier surfaces, removal of coarse surface rust caused by pitting.
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- Higher yield, decreased consumption, thanks to the visible green colour and its free flowing consistency which facilitates application.



Avesta GreenOne™ Pickling Paste 120 – for both soft pickling and heavy duty maintenance cleaning.



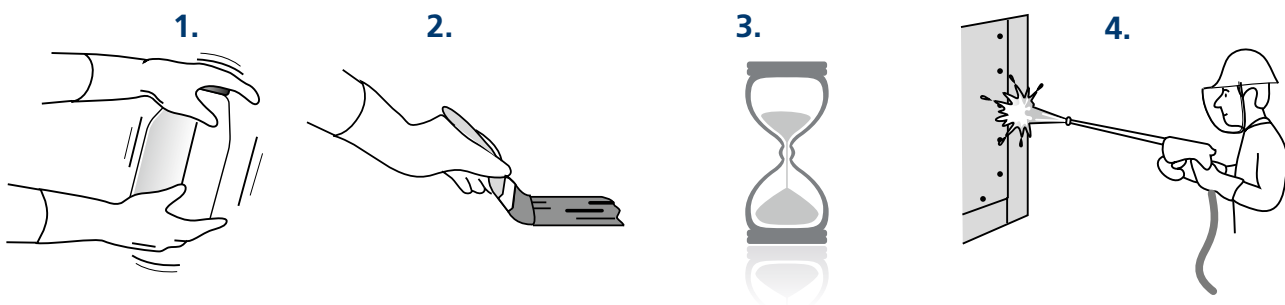
90% fume reduction compared to standard Pickling Paste.



Before and after pickling, Avesta GreenOne™ Pickling Paste 120.

Avesta
Finishing Chemicals

Instructions for use



1. Stir or shake the paste before use.

2. Apply the paste with an acid-resistant brush.

3. Typical pickling time for Steel grade 304/316 is 90 min at 10 °C, 45 min at 20 °C and 20 min at 30 °C. The pickling time may vary for the same steel grade, depending on the surface finish and the welding method.

4. Remove pickling residues using a high-pressure water jet, or with a stainless steel brush and then rinse with water. The waste water should be treated before discharge.

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Avesta GreenOne™ Pickling Paste 120 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorised persons.

The product is perishable and should not be kept in storage longer than necessary. It has a maximum shelf life of two years when stored at room temperature. Exposure to higher temperatures (> 35 °C) may damage the product and reduce the shelf life.

Worker safety

Avesta First Aid Spray 910 should be readily accessible to all those who work with pickling. It comes in a handy 200 ml spray can and the content has been optimised to decontaminate small acid-splashes of pickling paste.

Protective clothing. In general users should wear acid-resistant overalls, gloves and rubber boots. Face visor should be used and, if necessary, suitable respiratory protective devices.

Special conditions may apply from one country to another. Consult our website where updated Safety Data Sheets can be found.

Waste treatment

The waste water produced when pickling contains acids and should be treated with Avesta Neutraliser 502 or with slaked lime to a pH-value of 7–10 before discharge.

Heavy metals from the stainless steel are precipitated as a sludge, and should be sent for deposition according to local regulations.

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

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 **Responsible Care**
Good Chemistry at Work

Avesta
Finishing Chemicals

Staying stainless with superior pickling products



BlueOne™ Pickling Paste 130
A unique patented, virtually fume free pickling paste



Avesta Pickling Paste 101



GreenOne™ Pickling Paste 120



Avesta Pickling Gel 122



RedOne™ Pickling paste 140



avesta Pickling Bath 302
For immersion and circulation pickling!



RedOne™ Pickling Spray 240
A low fuming pickling spray



Before and after pickling.



Avesta Pickling Spray 204 is intended for aggressive spray pickling.



Passivator 630 -601



Avesta Cleaner 401 – A heavy-duty stainless steel cleaner
(Before and after cleaning.)



Avesta Rust Remover 410

Avesta Cleaner 401

100% Stainless

A heavy-duty stainless steel cleaner!

Superficial rust, oil, grease and lime deposits can occasionally appear on any stainless steel surface. Cleaning with Avesta Cleaner 401 eliminates these spots with ease, restoring the surface and returning your stainless steel to its original lustrous look, feel and finish.

Standard applications

Avesta Cleaner 401 is intended for a wide range of industrial cleaning applications, it offers a good general cleaning result on stainless steel surfaces.

Features

- Restores and brightens stainless steel surfaces that have been contaminated during fabrication or usage. It removes surface rust, water staining and lime deposits and organic contamination such as oil and grease.
- Pre-cleans before pickling. It removes organic contaminants such as grease, oil, etc. which will inhibit pickling.
- Removes atmospheric staining caused by sea water, "tea-staining", rain water, "water scale" and road salt.

Passivation

Avesta Cleaner 401 can be used in combination with Avesta FinishOne Passivator 630, which helps to remove free iron from the surface and regenerate the protective layer in the stainless steel by speeding up the passivation process.



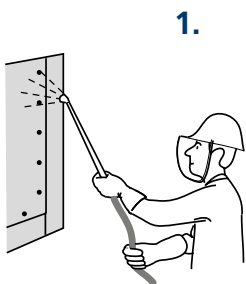
Avesta Cleaner 401 is a heavy-duty stainless steel cleaner.



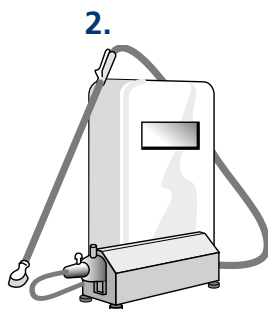
Before and after cleaning.

Avesta
Finishing Chemicals

Instructions for use



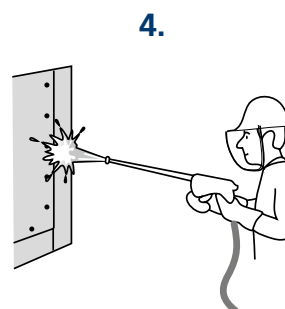
1. Apply the Cleaner with a brush or by spraying or dipping.



2. When spraying, use an acid-resistant pump, e.g. Avesta Membrane Pump SP-25.



3. Leave the fluid to work 15 to 30 min at room temperature.



4. Rinse thoroughly with a high-pressure water jet. Treat the waste water before discharge.

Packaging

Avesta Cleaner 401 is supplied in 0.3 kg, 2 kg and 28 kg polyethylene containers or 1100 kg IBC polyethylene containers.

Storage

Avesta Cleaner 401 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorised persons.

Worker safety

Protective clothing. In general users should wear acid-resistant overalls, gloves and rubber boots. Goggles or face visor should be used and, if necessary, suitable respiratory protective devices.

Special conditions may apply from one country to another. Consult our website where updated Safety Data Sheets can be found.

Waste treatment

The waste water produced when cleaning contains acids and should be treated with Avesta Neutraliser 502 or with slaked lime to a pH value of 7–10 before discharge.

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

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Avesta
Finishing Chemicals

BlueOne™ Pickling Paste 130

A unique , safer-to-use pickling paste.

Many of the processes used for pickling stainless steel lead to the development of hazardous nitric fumes. We have developed a ONE Technology, to avoid this with a unique low fuming pickling paste which reduces the toxic nitric fumes by 70%.

Standard applications

The pickling paste 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.

Avesta BlueOne™ Pickling Paste 130 is universal and suitable for brush pickling of welds and smaller surfaces of standard stainless steel grades such as 304 (1.4301) and 316 (1.4401). For more difficult pickling operations such as high alloyed steel grades and low temperatures, we suggest the Avesta RedOne Pickling Paste 140 as a stronger alternative.

Features

- » ONE Technology, 70% NO_x-reduction, this prevents the workers from breathing dangerous acid fumes.
- » Higher yield, 60% less consumption, thanks to the visible blue colour and its free-flowing consistency which facilitates application.
- » Improved pickling result, offers a brighter surface with less dis-coloration than classic products, see photos:



2,4 kg drums



13 kg drums

Photos: Available in several packages (Sizes may differ from markets)

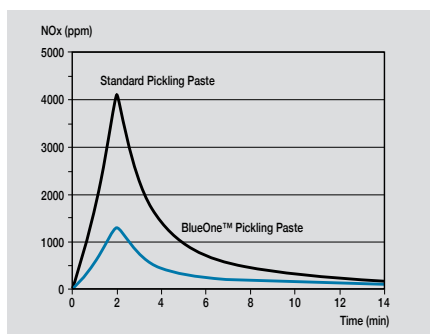


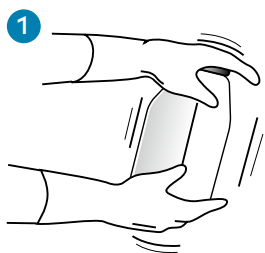
Figure: 70% fume reduction compared to standard Pickling Paste



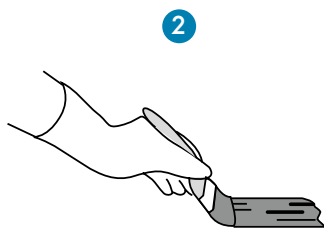
Photos showing the application of BlueOne™ Pickling Paste and the bright pickling result.



Instructions for use



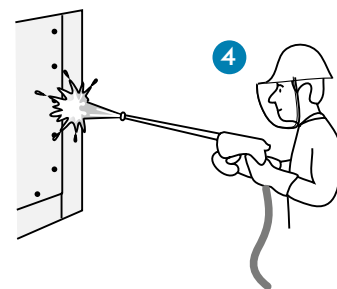
1. Pre-clean, remove oil and grease using Avesta Cleaner 401, and then rinse off with water.
Stir or shake the paste before usage.



2. Apply the paste with an acid resistant brush.



3. Typical reaction time for standard alloyed steel grades like 304 (1.4301) is 90 min. at 10°C 45 min. at 20°C and 20 min. at 30°C. The pickling time may vary for the same steel grade depending on surface finish.



4. Rinse off the pickling residuals by using a high-pressure water jet. Use deionized water for the final rinsing of sensitive surfaces. The waste water should be neutralized before discharge.

Packaging

Avesta BlueOne™ Pickling Paste 130 is supplied in 2,4 kg and 13 kg polyethylene bottles. Availability of different packages sizes may differ between markets.

All packing material follows the UN regulations for hazardous goods.

Storage

Avesta BlueOne™ Pickling Paste 130 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorized persons.

The product is perishable and should not be kept in storage longer than necessary. The gel may decompose during storage and hence need to be stirred before usage. It has a maximum shelf life of two years when stored at room temperature. Exposure to higher temperatures (>35°C) may damage the product and reduce the shelf life.

Worker safety

Avesta First Aid Spray 910 (available only on some markets) or Hexafluorine should be readily available to all who work with pickling to use as a first rinse to decontaminate small acid splashes of pickling paste, followed by Calcium Gluconate Gel or Solution to be used as a first aid to treat the HF acid burn.

Protective clothing. In general, users should wear acid resistant overalls, gloves and rubber boots. Face visor should be used and, if necessary, suitable respiratory protective devices.

Special conditions may apply from one country to another. Consult our website where updated Safety Data Sheets can be found.

Pre-cleaning

To further improve the result we recommend to remove present oil and grease before pickling using Avesta Cleaner 401.

Passivation

To further improve the result we recommend a passivation after pickling using Avesta FinishOne Passivator 630, which is a safer-to-use acid free passivation method.

Waste treatment

The wastewater produced when pickling contains acids and should be treated with Avesta Neutraliser 502 or with slaked lime to a pH-value of 7-10 before discharge. Heavy metals from stainless steel are precipitated as a sludge, and should be sent for deposition according to local regulations.

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

For more information, please visit our website:

www.voestalpine.com/welding, where you can find Safety Data Sheets and other useful information.



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Cleaner 401

A heavy-duty stainless steel cleaner.

Superficial rust, oil, grease and lime deposits can occasionally appear on any stainless steel surface. Cleaning with Avesta Cleaner 401 eliminates these spots with ease, restoring the surface and returning the stainless steel to its original lustrous look, feel and finish.

Standard applications

Avesta Cleaner 401 is intended for a wide range of industrial cleaning applications. It offers a good general cleaning result on on stainless steel surfaces:

Features

Gives a dual cleaning effect:

- » **For pre-cleaning** to remove organic contaminants oil and grease prior to pickling, this is important since pickling acids have difficulties to remove them and they will inhibit pickling.
- » **For maintenance cleaning** to restore and brighten stainless steel surfaces that have been contaminated during fabrication or usage. It removes staining caused by sea water, "tea-staining", rain water, "water scale" and road salt. For more severe surface rust , pickling may be required.

A consecutive passivation steep using Avesta FinishOne Passivator 630 after using the Cleaner 401 further improves the result and increases time until the next treatment with up to 3 times based on practical experiences.

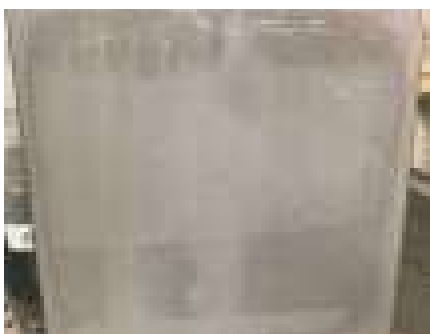


1100 kg IBCs



20 kg drums

Photos: Available in several packages
(Sizes may differ from markets)



Poor pre-cleaning

Photo: Remaining oil on the surface, before pickling, which blocks the pickling acids from cleaning and causing discolorations



Before

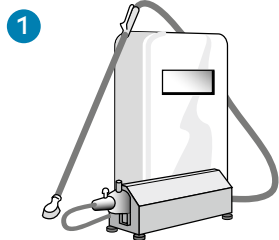
After

Photo: Maintenance cleaning, Cleaning of tea staining on a stainless manhole using Avesta Cleaner 401 and Passivator 630

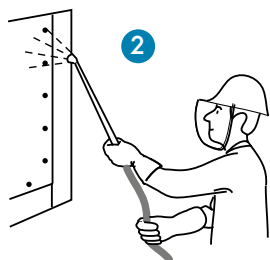


Photo: Application of Cleaner 401

Instructions for use



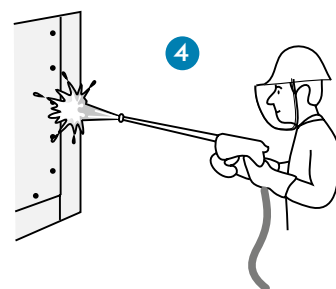
1. Apply by spraying using an acid resistant pump like Avesta SP 25, or by brushing, dipping or circulating depending on application.



2. When spraying, apply evenly on the entire surface.



3. Typical reaction time is 15-30 min. at 20°C. For stubborn (difficult to remove) grease an extra spraying may be needed, mechanical brushing with a nylon brush will also help.



4. Rinse off the residuals by using a high-pressure water jet. Use deionized water for the final rinsing of sensitive surfaces. The waste water should be neutralized before discharge.

Packaging

Avesta Cleaner 401 is supplied in 20 kg polyethylene containers or 1100 kg IBC polyethylene containers. Availability of different packages sizes may differ between markets. All packing material follows the UN regulations for hazardous goods.

Storage

Avesta Cleaner 401 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorized persons. The product is perishable and should not be kept in storage longer than necessary. The spray may decompose during storage and hence need to be stirred before usage. It has a maximum shelf life of two years when stored at room temperature. Exposure to higher temperatures (>35 °C) may damage the product and reduce the shelf life.

Worker safety

Protective clothing. In general, users should wear acid resistant overalls, gloves and rubber boots. Face visor should be used and, if necessary, suitable respiratory protective devices.

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Waste treatment

The wastewater produced when pickling contains acids and should be treated with Avesta Neutraliser 502 or with slaked lime to a pH-value of 7-10 before discharge. Heavy metals from stainless steel are precipitated as a sludge, and should be sent for deposition according to local regulations.

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

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JOIN! Your Full Welding Solutions for Lasting Connections

HIGH QUALITY AND PRODUCTIVITY PIPELINE ORBITAL WELDING WITH FLUX CORED WIRES




High quality pipeline girth welds with a result of outstanding material properties in combination with time and material savings and low repairing rate are nowadays key success factors for pipeline contractors. We are achieving all these requirements with our pipeRunner® orbital system. It is the perfect combination for pipeline orbital welding.

Main benefits

- » Save 66 % Time and 45% Material (on an API 5 XL X70 pipe O.D. 36" W.T. 15 mm)
- » Higher productivity
- » Reduced downtime
- » Fine-tuned aiming to minimize NDT indications & achieve 0% repairing rate
- » Easy and fast set up
- » Light weight design only 14 kg (without wire spool)

Product features	User benefits
<p>TERRA 400 PRM Pipeline Version</p>  <p>Adjustment range 3 A - 400 A</p> <p>Duty cycle 50 % - 400 A MIG-MAG 60 % - 360 A 10min/40°C 100 % - 340 A</p> <p>MIG/MAG 80 % - 400 A 10MIN/25°C 100% - 360 A</p> <p>A robust and reliable three phase new generation multiprocess inverter power source.</p> <ul style="list-style-type: none"> » In order to suit the needs for orbital pipeline welding and also perform root and hot pass by manual or semi-automatic welding the Terra 400 PRM is equipped with a special display to manage all the welding processes and the special remote control RC 100 MP specifically designed for pipeline jobsites. » High power at 100% of duty cycle ideal for heavy duty services » High temperature, shockproof, abrasion resistant plastic case » Excellent performance with long power supply extension cables up to 30m » Robust aluminium case and protected rollbar <p>Remote Control RC 100 MP</p>	<ul style="list-style-type: none"> » Multiprocess machine » GMAW/FCAW with pipeRunner® » SMAW » TIG-Lift » The machine is ideal for the pipeline job with root and hot pass with stick electrodes and fills and caps with our orbital welding system » Comprehensive display on the equipment body » User friendly handling, large controller » Magnet to apply on metallic surfaces

Product features	User benefits	
pipeRunner® the new orbital welding system		
	<ul style="list-style-type: none"> » pipeRunner® is a state-of-art programmable mechanized MIG/MAG orbital system designed for pipeline and process piping girth welds. » Designed for vertical up FCAW welding but also enabled for vertical down with GMAW » One device for CW clockwise and CCW counter clockwise » Easy to operate: Easy and comprehensive remote control with all functions in one hand <ul style="list-style-type: none"> » Welding programs » Torch movements » Oscillation width » Wire speed » Travel speed » Testing functions » Easy to program: <ul style="list-style-type: none"> » Software is already included and can work on any PC, heavy duty tablet is optional » Up to 11 different passes can be programmed » Technical Details <ul style="list-style-type: none"> » Horizontal torch movement: 65 mm (2.56 inch) » Vertical torch movement: 30 mm » Oscillating width: 0-60 mm (0-2.36 inch) » Torch head inclination: $\pm 25^\circ$ » Oscillation speed: 0-350 cm/min (0-63 inch/min) » Travel speed: 0-1.6 m/min (0-63 inch/min) » Wire diameter: 1.0 - 1.6 mm » Oscillation weld time: Individually adjustable » Weight: 14 kg w/o spool » Dimensions: 480x400x260 mm (19x16x10 inch) » Max. wire feed speed: 19 m/min (75 inch/min) » Max. welding current: 300A/100% (CO₂) 	<ul style="list-style-type: none"> » One of the lightest bugs on the market with only 14 kg (without spool) » Optimized distribution of the weight and center of mass makes the unit particularly easy to handle » User friendly and easy to learn how to program and work which is ideal for pipeline contractors who work manual and want to include automatic welding with relatively small investment » Max. accuracy (movement and wire feeding precision) for high quality weld joints
ROOT AND HOT MANUAL - FILLS AND CAPS MECHANIZED		
	<p>Get the perfect results with our Böhler Welding consumables. Manually welding the root and hot pass with SMAW/GTAW and GMAW afterwards the fills and cap layers mechanically with our pipeRunner® and diamondspark flux cored wires for pipeline welding.</p> <p>Welding sequence for pipe grade API 5L X70</p> <ul style="list-style-type: none"> » Diameter: 910 mm (36") » Wall thickness: 15,0 mm » Root pass: Böhler FOX CEL (E6010) » Hot pass: Böhler FOX CEL 80-P (E8010-P1) » Fill layers and cap layer: diamondspark X70 RC-Pipe (E91T1-K2M-JH4) 	<ul style="list-style-type: none"> » Easy slag removal » High productivity » Perfect bead shape » 0 indication at NDT » High repetitively and guaranty that the established WPS is always fulfilled » Saving compared with full cellulose SMAW procedure for this specific pipe and grade: <ul style="list-style-type: none"> » Arc time: 51% » Total time including line up: 66% » Materials saving in weight: 46%
Clad Pipeline Applications		
	<p>pipeRunner® has been used also in clad pipeline applications. Clad pipes have been successfully welded with pipeRunner® and our all positional alloy 625 flux cored wire FoxCore 625-T1. pipeRunner® is definitely an optimal solution also for high-alloys pipeworks and clad pipeline.</p>	

Product features	User benefits	
diamondspark FCAW Portfolio for Pipeline Welding		
 <p data-bbox="119 510 375 555">diamondspark FCAW Portfolio for Pipeline Welding</p>	<ul style="list-style-type: none"> » Our diamondspark seamless flux cored wires are the perfect combination with our welding equipment TERRA 400 PRM and pipeRunner® for orbital pipeline welding. Our seamless design allows a low content of diffusible hydrogen, no moisture pick up in storage and handling and therefore a low risk of hydrogen delayed cracking and wormholes. » Our diamondspark X RC Pipe product range is copper coated with excellent current transfer and less contact tip wear. Our flux cored wires are known for great feedability with increased arc time and no wire break. The special recipe optimized for pipeline welding also guarantees thick slag to support the weld pool in uphill progression and easy slag detachability » Pipeline dedicated formulas further improve the weld metal mechanical properties, keeping high toughness also when applying high productivity welding procedures. diamondspark X RC Pipe are also suitable for sour service and NACE compliant up to the X70 grade (in this latter case with diamondspark X70 RC-Pipe (N)) 	<ul style="list-style-type: none"> » NDT indications minimized » Mechanical properties achieved in demanding conditions » Downtime and post-processing work reduction
Personal protection & Accessories		
	<ul style="list-style-type: none"> » Helmets such as Guardian 62 Complete and Guardian 62F Air Complete, gloves, glasses and clothes are ideal for the pipeline jobsite. Additionally weldCare also provides a full range of electrode holders and ground clamps » Light weight products with robust headgear, soft sweatbands and highest ADF clarity with true color technology 	<ul style="list-style-type: none"> » Suitable for a wide range of welding and grinding applications » High quality » Durable » Comfortable
Weldtech Application Services		
	<ul style="list-style-type: none"> » For voestalpine Böhler Welding, being a Full Welding Solutions provider means acting as a partner for pipeline contractors through the weldTECH Application Services, which include a team of welding engineers experienced in pipeline construction. 	<ul style="list-style-type: none"> » Support for testing, qualification and problem solving

Typical applications

- » On and Offshore Pipelines
- » Process Piping

Product Range diamondspark X.. RC Pipe for Pipeline Welding

PRODUCT NAME	EN CLASSIFICATION	AWS CLASSIFICATION
diamondspark X52 RC-Pipe	T46 4 P M21 1 H5	E71T1M/T-9M/T-12M
diamondspark X60 RC-Pipe	T50 6 1Ni P M21 1 H5	E81T1-Ni1M-JH4
diamondspark X70 RC-Pipe	T55 5 Mn1,5 P M21 1 H5	E91T1-K2M-JH4
diamondspark X70 RC-Pipe (N)	T55 6 Z p M21 1 H5	E91T1-GM-JH4
diamondspark X80 RC-Pipe	T62 4 Mn1.5Ni P M21 1 H5	E101T1-K2M-JH4
diamondspark X100 RC-Pipe	T69 4 Z P M21 1 H5	E111T1-M21A4-GH4

Pickling Gel 122

An all-round pickling paste in gel form.

Avesta Pickling Gel 122 is more free-flowing than a standard pickling paste to facilitate the application and to give a high coverage. It can be used to clean with a good result on standard stainless steel grades.

Standard applications

The pickling gel 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.

This gel is universal and specifically intended for standard brush pickling of weld seams and smaller surfaces of standard stainless steel grades. For difficult pickling operations such as high alloyed steel grades and low temperatures, we suggest the Avesta RedOne Pickling Paste 140 as an alternative.

Features

- » Improved pickling result, offers a brighter surface with less dis-coloration than classic products.
- » The transparent gel consistency gives good adhesion to the stainless steel surface.
- » High heat stability, can be used and stored in warmer climates (the gel is heat-stable up to +45°C).



2,4 kg drums



13 kg drums

Photos: Available in several packages
(Sizes may differ from markets)

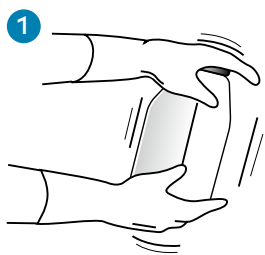


Photo: Bright pickling result



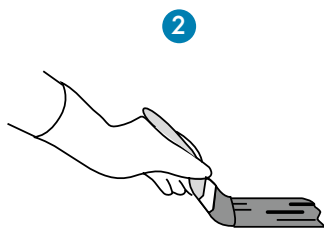
Photo: Site pickling with Gel 122, easy to apply thanks to its free flowing consistency

Instructions for use



1. Pre-clean, remove oil and grease using Avesta Cleaner 401, and then rinse off with water.

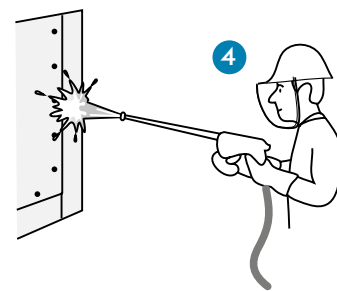
Stir or shake the paste before usage.



2. Apply the paste with an acid resistant brush.



3. Typical reaction time for standard alloyed steel grades like 304 (1.4301) is 60 min. at 20°C and 40 min. at 35°C. The pickling time may vary for the same steel grade depending on surface finish and welding method.



4. Rinse off the pickling residuals by using a high-pressure water jet. Use deionized water for the final rinsing of sensitive surfaces. The waste water should be neutralized before discharge.

Packaging

Avesta Pickling Gel is supplied in 2,4kg and 13kg polyethylene bottles. Availability of different packages sizes may differ between markets.

All packing material follows the UN regulations for hazardous goods.

Storage

Avesta Pickling Gel 122 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorized persons.

The product is perishable and should not be kept in storage longer than necessary. The gel may decompose during storage and hence need to be stirred before usage. It has a maximum shelf life of two years when stored at room temperature. Exposure to higher temperatures (>45°C) may damage the product and reduce the shelf life.

Worker safety

Avesta First Aid Spray 910 (available only on some markets) or Hexafluorine should be readily available to all who work with pickling to use as a first rinse to decontaminate small acid splashes of pickling paste, followed by Calcium Gluconate Gel or Solution to be used as a first aid to treat the HF acid burn.

Protective clothing. In general, users should wear acid resistant overalls, gloves and rubber boots. Face visor should be used and, if necessary, suitable respiratory protective devices.

Special conditions may apply from one country to another. Consult our website where updated Safety Data Sheets can be found.

Pre-cleaning

To further improve the result we recommend to remove present oil and grease before pickling using Avesta Cleaner 401.

Passivation

To further improve the result we recommend a passivation after pickling using Avesta FinishOne Passivator 630, which is a safer-to-use acid free passivation method

Waste treatment

The wastewater produced when pickling contains acids and should be treated with Avesta Neutraliser 502 or with slaked lime to a pH-value of 7-10 before discharge. Heavy metals from stainless steel are precipitated as a sludge, and should be sent for deposition according to local regulations.

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

For more information, please visit our website:

www.voestalpine.com/welding, where you can find Safety Data Sheets and other useful information.



Information given in this brochure may be subject to alteration without notice. Care has been taken to ensure that the contents of this publication are accurate, but voestalpine Böhler Welding Nordic AB and its subsidiary companies do not accept responsibility for errors or for information which is found to be misleading. Suggestions for or descriptions of the end use or application of products or methods of working are for information only and the company and its subsidiaries accept no liability in respect thereof. Before using products supplied or manufactured by the company the customer should satisfy himself of their suitability.



Lasting Connections

BÖHLER WELDING QLINE CATALOGUE





BÖHLER WELDING

Lasting Connections

As a pioneer in innovative welding consumables, Böhler Welding offers a unique product portfolio for welding worldwide. More than 2000 products are adapted continuously to the current industry specifications and customer requirements, certified by well-respected institutes and thus approved for the most demanding welding applications. As a reliable partner for customers, “lasting connections“ are the brand’s philosophy in terms of both welding and people.

Our clients benefit from a partner with

- » the highest expertise in joining, rendering the best application support globally available
- » specialized and best in class product solutions for their local and global challenges
- » an absolute focus on customer needs and their success
- » a worldwide presence through factories, offices and distributors

QLINE

Böhler Welding stands for quality and reliability

When you are looking for good quality in your products for a fair price the Böhler Welding Quality Line – or short QLine – is the perfect choice for you.

With the QLine you will receive a quality product from a renowned brand for every basic welding application, with a clear and easy selection process at a fair price.

Your Benefits at a glance

- » Böhler Welding Quality products
- » Easy orientation and selection process
- » A fair price
- » Most needed approvals
- » Comprehensive and homogenous range

The QLine products are designed for general purpose welding, for less demanding industries and applications as well as for the distribution channels. They come in standard cardboard boxes and possess the basic approvals (TÜV, DB, DNV and ABS).







QLINE PRODUCT NAMING STRUCTURE

The letter “Q” provides the essential recognition value.
Following, you can see which distinctions need to be observed, too.

- » **BÖHLER Q:** Cored wires
(BÖHLER Q 71 RC as an example for unalloyed, rutile flux cored wires)
- » **BÖHLER Q E:** Covered electrodes
(BÖHLER Q E 6013 RC as an example for unalloyed covered electrodes)
- » **BÖHLER Q G:** MAG wires
(BÖHLER Q G 3 as an example for unalloyed MAG wire)
- » **BÖHLER Q T:** TIG rods
(BÖHLER Q T 308L-Si as an example for high-alloyed TIG rods)

QLINE PACKAGING

- » Stick electrodes: Standard box ~ 4.5 kg
PocketBox ~ 1.0 kg
- » Cored wires: BS 300 basket spools 16 kg
S 300 plastic spools 16 kg
S 200 plastic spools 5 kg
- » Solid wires: BS 300 basket spools 15/18 kg
S 300 plastic spools 15/18 kg
S 200 plastic spools 5 kg
- » TIG rods: 4 x 5 kg cardboard tubes in an outer box

PocketBox ~1.0 kg		Spool Carton: BS300, S300, S200	
Standard box ~4.5 kg		5 kg tubes	

Unalloyed stick electrodes

Product name	Norm EN	Norm AWS	Art.-No.	Dimension	Packaging	Approvals
BÖHLER Q E 6013 RT	E 42 0 RR 1 2	E6013	68008	2.0 x 300	Standard box	TÜV, DB, DNV
			84063	2.5 x 300		
			84065	3.2 x 350		
			84066	4.0 x 350		
			68974	2.0 x 300	PocketBox 20	
			68975	2.5 x 300		
			68984	3.2 x 350		
			69029	4.0 x 350		
BÖHLER Q E 6013 RC	E 42 0 RC 1 1	E6013	81517	2.0 x 300	Standard box	TÜV, DB, DNV
			81518	2.5 x 350		
			81520	3.2 x 350		
			81523	4.0 x 350		
			81524	5.0 x 350	PocketBox 20	
			69038	2.0 x 300		
			69040	2.5 x 350		
			69041	3.2 x 350		
			69064	4.0 x 350		
69067	5.0 x 350					
BÖHLER Q E 7018	E 42 4 B 4 2 H5	E7018 H4 R	11526	2.5 x 350	Standard box	TÜV, DB, DNV
			11527	3.2 x 350		
			11041	3.2 x 450		
			10962	4.0 x 450		
			10963	5.0 x 450		
			69073	2.0 x 300	PocketBox 20 (up to 350 mm)	
			69085	2.5 x 350		
			69089	3.2 x 350	PocketBox 30 (450 mm)	
			69095	4.0 x 450		
			69096	5.0 x 450		
BÖHLER Q E 7018-1	E 42 5 B 4 2 H5	E7018-1 H4	68029	2.0 x 300	Standard box	TÜV, DB, DNV
			82205	2.5 x 300		
			81500	2.5 x 350		
			81501	3.2 x 350		
			82092	3.2 x 450		
			83628	4.0 x 350		
			81502	4.0 x 450		
			81503	5.0 x 450		
			85499	6.0 x 450		
			69103	2.0 x 300		
			69109	2.5 x 350		
			69111	3.2 x 350	PocketBox 30 (450 mm)	
			69127	4.0 x 450		
			69148	5.0 x 450		

High alloyed stick electrodes

Product name	Norm EN	Norm AWS	Art.-No.	Dimension	Packaging	Approvals
BÖHLER Q E 308L-17	E 19 9 L R 3 2	E308L-17	75299	2.5 x 300	Standard box	TÜV, ABS, DNV
			75300	3.2 x 350		
			75301	4.0 x 350		
			69387	2.5 x 300	PocketBox 20	
			69395	3.2 x 350		
			69397	4.0 x 350		
BÖHLER Q E 309L-17	E 23 12 L R 3 2	E309L-17	75305	2.5 x 300	Standard box	TÜV, ABS, DNV
			75306	3.2 x 350		
			75308	4.0 x 350		
			69405	2.0 x 300	PocketBox 20	
			69406	3.2 x 350		
			69424	4.0 x 350		
BÖHLER Q E 316L-17	E 19 12 3 L R 3 2	E316L-17	75312	2.5 x 300	Standard box	TÜV, ABS, DNV
			75313	3.2 x 350		
			75314	4.0 x 350		
			69471	2.5 x 300	PocketBox 20	
			69476	3.2 x 350		
			69491	4.0 x 350		



Unalloyed solid wire

Product name	Norm EN	Norm AWS	Art.-No.	Dimension	Packaging		Approvals
BÖHLER Q G 3	G 42 3 M21 3Si1 G 38 2 C1 3Si1	ER70S-6	71897	0.8 mm	BS300	15 kg	TÜV, DB, DNV
			71923		BASEdrum	250 kg	
			71910		S300	15 kg	
			71898	0.9 mm	BS300	18 kg	
			71911		S300	18 kg	
			71900	1.0 mm	BS300	18 kg	
			71925		BASEdrum	250 kg	
			71913		S300	18 kg	
			71902	1.2 mm	BS300	18 kg	
			71927		BASEdrum	250 kg	
			71915		S300	18 kg	
			71904	1.6 mm	BS300	18 kg	
			71929		BASEdrum	250 kg	
			71917		S300	18 kg	
			BÖHLER Q G 4	G 46 4 M21 4Si1 G 46 2 C1 4Si1	ER70S-6	71957	
71931	BS300	15 kg					
71944	S300	15 kg					
71932	0.9 mm	BS300				18 kg	
71945		S300				18 kg	
71959	1.0 mm	BASEdrum				250 kg	
71934		BS300				18 kg	
71947		S300				18 kg	
71961	1.2 mm	BASEdrum				250 kg	
71936		BS300				18 kg	
71949		S300				18 kg	
71963	1.6 mm	BASEdrum				250 kg	
71938		BS300				18 kg	
71951		S300				18 kg	

High alloyed solid wire

Product name	Norm EN	Norm AWS	Art.-No.	Dimension	Packaging	Approvals			
BÖHLER Q G 307	G 18 8 Mn	ER307 (mod.)	72085	0.8 mm	BS300-BLUE 15 kg	TÜV, DB			
			72086	1.0 mm					
			72102	1.2 mm					
			72088	1.6 mm					
BÖHLER Q G 308L-Si	G 19 9 L Si	ER308LSi	72097	0.8 mm		BS300-BLUE 15 kg	TÜV, DB		
			72098	1.0 mm					
			72099	1.2 mm					
			72100	1.6 mm					
BÖHLER Q G 309L-Si	G 23 12 L Si	ER309LSi	72109	0.8 mm			BS300-BLUE 15 kg	TÜV, DB	
			72110	1.0 mm					
			72111	1.2 mm					
BÖHLER Q G 316L-Si	G 19 12 3 L Si	ER316LSi	72116	0.8 mm				BS300-BLUE 15 kg	TÜV, DB
			72117	1.0 mm					
			72118	1.2 mm					
			72119	1.6 mm					



High alloyed TIG rods

Product name	Norm EN	Norm AWS	Art.-No.	Dimension	Packaging	Approvals			
BÖHLER Q T 307	W 18 8 Mn	ER307 (mod.)	72089	1.6 x 1000 mm	4 tubes 5 kg / carton	TÜV, DB			
			72090	2.0 x 1000 mm					
			72091	2.4 x 1000 mm					
			72092	3.2 x 1000 mm					
BÖHLER Q T 308L	W 19 9 L	ER308L	72093	1.6 x 1000 mm		4 tubes 5 kg / carton	TÜV, DB		
			72094	2.0 x 1000 mm					
			72095	2.4 x 1000 mm					
			72096	3.2 x 1000 mm					
BÖHLER Q T 308L-Si	W 19 9 L Si	ER308LSi	72101	1.6 x 1000 mm			4 tubes 5 kg / carton	TÜV, DB	
			72156	2.0 x 1000 mm					
			72103	2.4 x 1000 mm					
			72157	3.2 x 1000 mm					
BÖHLER Q T 309L	W 23 12 L	ER309L	72105	1.6 x 1000 mm				4 tubes 5 kg / carton	TÜV, DB
			72106	2.0 x 1000 mm					
			72107	2.4 x 1000 mm					
			72108	3.2 x 1000 mm					
BÖHLER Q T 316L	W 19 12 3 L	ER316L	72112	1.6 x 1000 mm	4 tubes 5 kg / carton				TÜV, DB
			72113	2.0 x 1000 mm					
			72114	2.4 x 1000 mm					
			72115	3.2 x 1000 mm					
BÖHLER Q T 316L-Si	W 19 12 3 L Si	ER316LSi	72120	1.6 x 1000 mm		4 tubes 5 kg / carton			TÜV, DB
			72121	2.0 x 1000 mm					
			72122	2.4 x 1000 mm					
			72123	3.2 x 1000 mm					



Unalloyed Cored wires

Product name	Norm EN	Norm AWS	Art.	Dimension	Packaging	Approvals	
BÖHLER Q 70 MC	T 46 3 M M21 1 H5	E71T15-M21A4-CS1-H4 E71T15-M20A4-CS1-H4	60400	1.2 mm	S200	5 kg	TÜV, DB, DNV, LR, BV, ABS, CWB
			61718		S200	5 kg - SGS	
			72207		S300	15 kg	
			60399		BS300	16 kg	
			71733		ECOdrum	250 kg	
			71735	1.4 mm	BS300	16 kg	
			74127	1.6 mm	S300	15 kg	
BÖHLER Q 71 RC	T 46 4 P M21 1 H10 T 42 2 P C1 1 H5	E71T-1/T-9/T-12M-JH8 E71T-1/T-9/T-12C-JH4 E71T1-M21A4-CS1-H8 E71T1-C1A4-CS1-H4	70815	1.2 mm	BS300	16 kg	TÜV, DB, ABS, LR, DNV, BV, CWB, RINA
			61528		S200	5 kg	
			61777		S200	5 kg - SGS	
			64812	1.4 mm	S300	15 kg	
			71720	1.6 mm	BS300	16 kg	
			42271		CLIMAdrum	250 kg	
BÖHLER Q Zn GS	T 3 T Z M M21 1	E70C-GS E70TGS-M21-GS	73539	1.0 mm	S200	5 kg	CE
			61979		BS300	16 kg	
			73731		ECOdrum	250 kg	
			73522	1.2 mm	S200	5 kg	
			61980	BS300	16 kg		
			61981	BASEdrum	250 kg		



JOIN! voestalpine Böhler Welding

We are a leader in the welding industry with over 100 years of experience, more than 50 subsidiaries and more than 4,000 distribution partners around the world. Our extensive product portfolio and welding expertise combined with our global presence guarantees we are close when you need us. Having a profound understanding of your needs enables us to solve your demanding challenges with Full Welding Solutions - perfectly synchronized and as unique as your company.



Lasting Connections – Perfect alignment of welding machines, consumables and technologies combined with our renowned application and process know-how provide the best solution for your requirements: A true and proven connection between people, products and technologies. The result is what we promise: Full Welding Solutions for Lasting Connections.



Tailor-Made Protectivity™ – The combination of our high-quality products and application expertise enables you to not only repair and protect metal surfaces and components. Our team of engineers, experienced in your specific applications, offer you customized solutions resulting in increased productivity for your demanding challenge. The result is what we promise: Tailor-Made Protectivity™.



In-Depth Know-How – As a manufacturer of soldering and brazing consumables, we offer proven solutions based on 60 years of industrial experience, tested processes and methods, made in Germany. This in-depth know-how makes us the internationally preferred partner to solve your soldering and brazing challenge through innovative solutions. The result is what we promise: Innovation based on in-depth know-how.

The Management System of voestalpine Böhler Welding Group GmbH, Peter-Mueller-Strasse 14-14a, 40469 Duesseldorf, Germany has been approved by Lloyd's Register Quality Assurance to: ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007, applicable to: Development, Manufacturing and Supply of Welding and Brazing Consumables. More information: www.voestalpine.com/welding



RedOne™ Pickling Spray 240

A unique, safer-to-use pickling spray.

Many of the processes used for pickling stainless steel lead to the development of hazardous nitric fumes. We have developed a ONE Technology, to avoid this with a unique low fuming pickling spray which reduces the toxic nitric fumes by 60%.

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.

Avesta RedOne™ Pickling Spray 240 is universal and suitable for spray pickling larger surfaces of all stainless steel grades. High alloyed steels and duplex steels may need more than one treatment. The Avesta Duplex Spray 250 is also a stronger alternative for duplex steels.

Features

- » ONE Technology, 60% NO_x-reduction, this prevents the workers from breathing dangerous acid fumes. See enclosed photos of the yellow NO_x fumes during pickling staining caused by sea water, "tea-staining", rain water, "water scale" and road salt. For more severe surface rust, pickling may be required.
- » Perfect Adhesion & high efficiency thanks to the thixotropic properties of the spray. At the application after shaking it is very fluid (easy to spray), after being on the surface the product gets a very good adhesion again.

Benefits

- » No reduced overhead dropping
- » A very thin layer of the is enough (high efficiency)
- » Easy to use, doesn't dry out. Has long term efficiency hence can be used on different steel grades in adjusting the pickling time. Easy to wash off

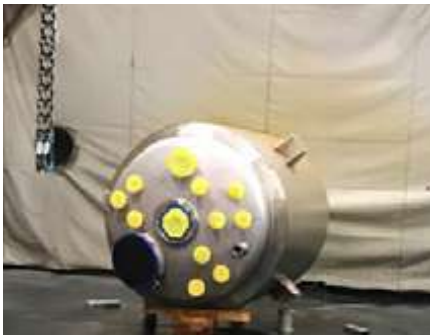


Photo: Spray pickling with Avesta RedOne™ 240



Photo: Spray pickling competitor



1200 kg IBCs



220 kg drums

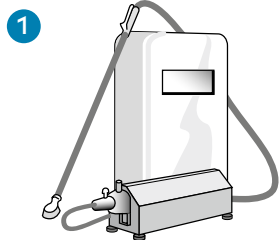
30 kg drums

20 kg drums

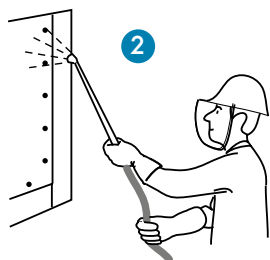


Photos: Available in several packages
(Sizes may differ from markets)

Instructions for use



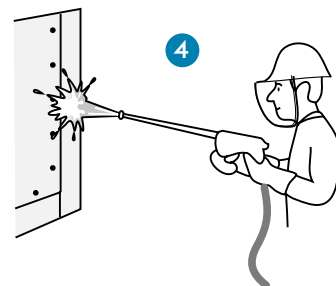
1. Apply all chemicals by using an acid resistant pump like Avesta SP 25. Start with pre-cleaning to remove oil and grease by using Avesta Cleaner 401 and then rinse off with water.



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 s like 304 & 316 is 40 min at 20oC and 30 min at 30oC. The pickling time may vary for the same steel grade depending on surface.



4. Rinse off the pickling residuals by using a high-pressure water jet. Use deionized water for the final rinsing of sensitive surfaces. The waste water should be neutralized before discharge.

Packaging

Avesta RedOne™ Pickling Spray 240 is supplied in 20, 30 kg and 220 kg polyethylene containers or 1200 kg IBC polyethylene containers. Availability of different packages sizes may differ between markets.

All packing material follows the UN regulations for hazardous goods.

Storage

Avesta RedOne™ Pickling Spray 240 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorized persons.

The product is perishable and should not be kept in storage longer than necessary. The spray may decompose during storage and hence need to be stirred before usage. It has a maximum shelf life of two years when stored at room temperature. Exposure to higher temperatures (>35°C) may damage the product and reduce the shelf life.

Worker safety

Avesta First Aid Spray 910 (available only on some markets) or Hexafluorine® should be readily available to all who work with pickling to use as a first rinse to decontaminate small acid splashes of pickling spray, followed by Calcium Gluconate Gel or Solution to be used as a first aid to treat the HF acid burn.

Protective clothing. In general, users should wear acidresistant overalls, gloves and rubber boots. Face visor should be used and, if necessary, suitable respiratory protective devices.

Special conditions may apply from one country to another. Consult our website where updated Safety Data Sheets can be found.

Passivation

To further improve the result we recommend a passivation after pickling using Avesta FinishOne Passivator 630, which is a safer-to-use acid free passivation method

Waste treatment

The wastewater produced when pickling contains acids and should be treated with Avesta Neutraliser 502 or with slaked lime to a pH-value of 7 – 10 before discharge. Heavy metals from stainless steel are precipitated as a sludge, and should be sent for deposition according to local regulations.

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

For more information, please visit our website:

www.voestalpine.com/welding, where you can find Safety Data Sheets and other useful information.



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Cleaner 401

A heavy-duty stainless steel cleaner.

Superficial rust, oil, grease and lime deposits can occasionally appear on any stainless steel surface. Cleaning with Avesta Cleaner 401 eliminates these spots with ease, restoring the surface and returning the stainless steel to its original lustrous look, feel and finish.

Standard applications

Avesta Cleaner 401 is intended for a wide range of industrial cleaning applications. It offers a good general cleaning result on on stainless steel surfaces:

Features

Gives a dual cleaning effect:

- » **For pre-cleaning** to remove organic contaminants oil and grease prior to pickling, this is important since pickling acids have difficulties to remove them and they will inhibit pickling.
- » **For maintenance cleaning** to restore and brighten stainless steel surfaces that have been contaminated during fabrication or usage. It removes staining caused by sea water, "tea-staining", rain water, "water scale" and road salt. For more severe surface rust , pickling may be required.

A consecutive passivation steep using Avesta FinishOne Passivator 630 after using the Cleaner 401 further improves the result and increases time until the next treatment with up to 3 times based on practical experiences.

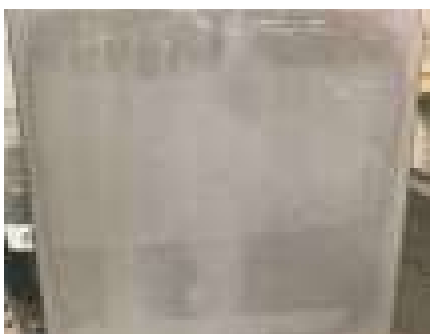


1100 kg IBCs



20 kg drums

Photos: Available in several packages
(Sizes may differ from markets)



Poor pre-cleaning

Photo: Remaining oil on the surface, before pickling, which blocks the pickling acids from cleaning and causing discolorations



Before

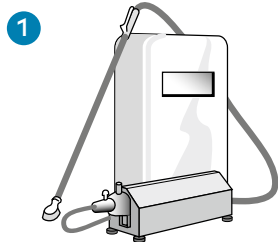
After

Photo: Maintenance cleaning, Cleaning of tea staining on a stainless manhole using Avesta Cleaner 401 and Passivator 630

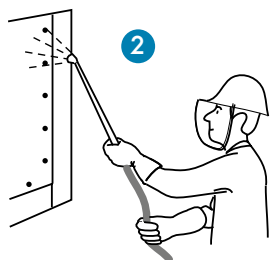


Photo: Application of Cleaner 401

Instructions for use



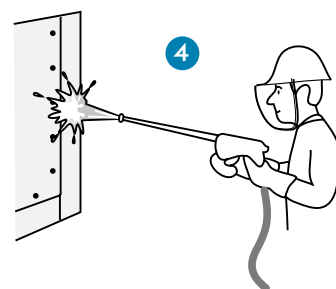
1. Apply by spraying using an acid resistant pump like Avesta SP 25, or by brushing, dipping or circulating depending on application.



2. When spraying, apply evenly on the entire surface.



3. Typical reaction time is 15-30 min. at 20°C. For stubborn (difficult to remove) grease an extra spraying may be needed, mechanical brushing with a nylon brush will also help.



4. Rinse off the residuals by using a high-pressure water jet. Use deionized water for the final rinsing of sensitive surfaces. The waste water should be neutralized before discharge.

Packaging

Avesta Cleaner 401 is supplied in 20 kg polyethylene containers or 1100 kg IBC polyethylene containers. Availability of different packages sizes may differ between markets. All packing material follows the UN regulations for hazardous goods.

Storage

Avesta Cleaner 401 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorized persons. The product is perishable and should not be kept in storage longer than necessary. The spray may decompose during storage and hence need to be stirred before usage. It has a maximum shelf life of two years when stored at room temperature. Exposure to higher temperatures (>35 °C) may damage the product and reduce the shelf life.

Worker safety

Protective clothing. In general, users should wear acid resistant overalls, gloves and rubber boots. Face visor should be used and, if necessary, suitable respiratory protective devices.

Special conditions may apply from one country to another. Consult our website where updated Safety Data Sheets can be found.

Waste treatment

The wastewater produced when pickling contains acids and should be treated with Avesta Neutraliser 502 or with slaked lime to a pH-value of 7-10 before discharge. Heavy metals from stainless steel are precipitated as a sludge, and should be sent for deposition according to local regulations.

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

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CLEANER 401

A heavy-duty stainless steel cleaner!

Superficial rust, oil, grease and lime deposits can occasionally appear on any stainless steel surface. Cleaning with Avesta Cleaner 401 eliminates these spots with ease, restoring the surface and returning your stainless steel to its original lustrous look, feel and finish.

Standard applications

Avesta Cleaner 401 is intended for a wide range of industrial cleaning applications. It offers a good general cleaning result on stainless steel surfaces.

Features

- » Restores and brightens stainless steel surfaces that have been contaminated during fabrication or usage. It removes surface rust, water staining and lime deposits and organic contamination such as oil and grease.
- » Pre-cleans before pickling. It removes organic contaminants such as grease, oil, etc. which will inhibit pickling.
- » Removes atmospheric staining caused by sea water, "tea-staining", rain water, "water scale" and road salt.



Before and after cleaning.

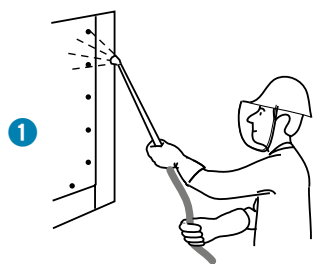
Passivation

Avesta Cleaner 401 can be used in combination with Avesta FinishOne Passivator 630, which helps to remove free iron from the surface and regenerate the protective layer in the stainless steel by speeding up the passivation process.

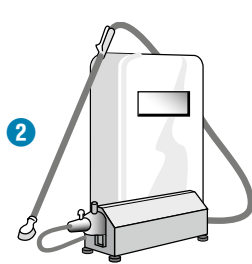


Avesta Cleaner 401 is a heavy-duty stainless steel cleaner.

Instructions for use



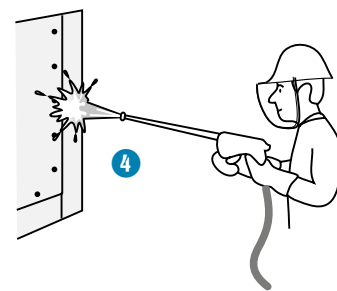
1. Apply the Cleaner with a brush or by spraying or dipping.



2. When spraying, use an acid-resistant pump, e.g. Avesta Membrane Pump SP-25.



3. Leave the fluid to work 15 to 30 min at room temperature.



4. Rinse thoroughly with a high-pressure water jet. Treat the waste water before discharge.

Packaging

Avesta Cleaner 401 is supplied in 28 kg polyethylene containers and 1100 kg IBC polyethylene containers.

Storage

Avesta Cleaner 401 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorized persons.

Worker safety

Protective clothing. In general, users should wear acid-resistant overalls, gloves and rubber boots. Goggles or face visor should be used and, if necessary, suitable respiratory protective devices.

Special conditions may apply from one country to another. Consult our website where updated Safety Data Sheets can be found.

Waste treatment

The waste water produced when cleaning contains acids and should be treated with Avesta Neutraliser 502 or with slaked lime to a pH value of 7 – 10 before discharge.

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

For more information, please visit our website: <http://www.vabw-service.com/voestalpine> where you can find Safety Data Sheets and other useful information.



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FinishOne Passivator 630

The need for an extra Passivation of Stainless Steel.

An air-passivation of Stainless steels take place naturally on a clean surface. However in the presence of surface contamination, like free iron from contact with carbon steel tooling, this may interfere with the formation of the passive film. These contaminants has to be removed by using Passivator 630 to allow the oxygen uniform access to the surface in order to create the protective passive film. Further the air-passivation may take too much time in some aggressive environments, like close to the sea side. The passive film build up may need assistance of the Passivator 630 to speed up the formation.

A safer-to-use acid free Passivator!

Many of the processes used for passivation of stainless steel lead to the development of hazardous nitric fumes. We have developed a ONE Technology, to avoid this with a unique non fuming passivator which reduces the toxic nitric fumes by 100%.

Standard applications

The Passivator 630 restores stainless steel surfaces, after pickling or mechanical cleaning, that have been damaged during fabrication operations such as welding, forming, cutting and blasting. It removes free iron and speeds up the formation of the protective passive layer to prevent local corrosion.

Avesta FinishOne Passivator 630 passivates without nitric or citric acid. This Passivator is acid free and safe to use. The resulting rinse water is acid free and hence no need for and extra neutralization and waste treatment step The Passivator 630 is intended for spray passivation only. For immersion or circulation passivation we recommend the Avesta 601 Passivator

Features

- » ONE Technology, 100% NOx-reduction, this prevents the workers from breathing dangerous acid fumes.
- » Higher yield, superior performances compared to nitric and citric acid passivation.
- » Acid free, creates no toxic waste to handle, no risk for nitrates in the rinse water. Easy to handle and to ship, classified as non dangerous goods.
- » Diminish the risk of discolored surfaces caused by flash clouds of free Iron (SMUT) when applied we-on-wet.
- » For reduction of Nitric fumes during pickling by spraying a mist over the pickled surcafe "vet on wet".



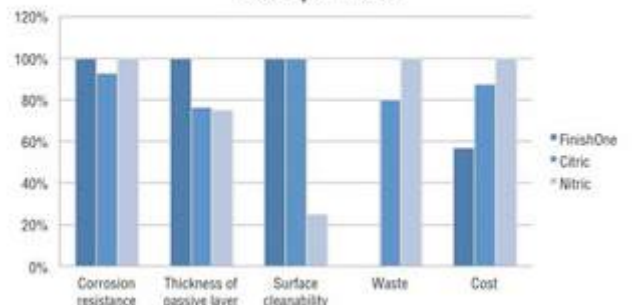
1000 kg IBCs



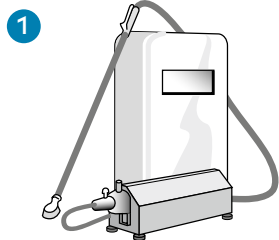
25 kg drums

Photos: Available in several packages (Sizes may differ from markets)

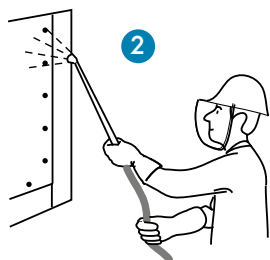
Comparing study between FinishOne, nitric acid and citric acid – relative performance



Instructions for use



1. Apply the Passivator 630 by spraying with a spray pump like Avesta SP 25 or with a brush.



2. The Passivator 630 can be used for different purposes:

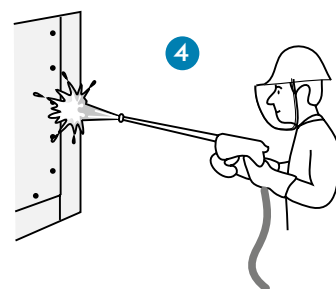
2.1. To passivate after pickling, and avoid SMUT formation after spray pickling, the 630 shall be applied while the surface is still wet, "wet on wet".

2.2. To passivate after mechanical treatment, first pre-clean the surface using Avesta Cleaner 401 give it 20 min. to react., rinse with water, then apply the Passivator 630. "wet on wet".

2.3. To reduce nitric fumes when pickling, spray on the pickling fluid as a "mist" "wet on wet".



3. Typical reaction time for each purposes and all stainless steel grades is 10-15 min. 20°C The pickling time may vary for the same



4. Rinse off the Passivator 630 residuals by using a high-pressure water jet. Use deionized water for the final rinsing of sensitive surfaces. The waste water do not need to be neutralized.

Packaging

Avesta FinishOne Passivator 630 is supplied in 25 kg and 1000 kg IBC polyethylene packages. Availability of different packages sizes may differ between markets.

Storage

Avesta FinishOne Passivator 630 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorized persons. Keep the lid on at all times when not in use. Metals, alkaline, organic materials, heat and UV radiation will degrade the product. Store in a clean, cool and UV protected environment. Avoid contact with textiles.

Worker safety

Protective clothing. In general, users should wear acid-resistant overalls, gloves and rubber boots. Face visor should be used and, if necessary, suitable respiratory protective devices.

Special conditions may apply from one country to another. Consult our website where updated Safety Data Sheets can be found.

Maintenance Cleaning

For the cleaning of stainless steel objects in service which are suffering from surface rust / tea staining. The Avesta Cleaner 401 can be used together with Avesta FinishOne Passivator 630, they will remove the surface rust and then promote the regeneration of the protective layer in the stainless steel by speeding up the thickness of the passive layer.

Waste treatment

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

For more information, please visit our website:

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FINISHONE PASSIVATOR 630

An acid-free passivator!

Avesta FinishOne Passivator 630 passivate without nitric or citric acid. It helps to remove free iron from the surface and regenerate the protective layer in the stainless steel by speeding up the passivation process.

Standard applications

Avesta FinishOne Passivator 630 is intended for a wide range of industrial passivating applications. It offers a good general passivating result on stainless steel surfaces.

Features

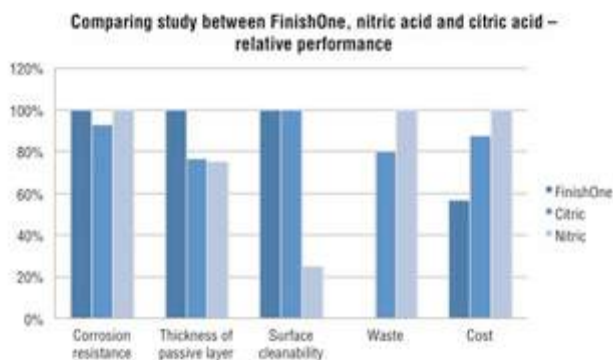
- » Restores the passivation layer on stainless steel surfaces that have been damaged during fabrication such as grinding, brushing, blasting etc or usage.
- » Improves the result after pickling by speeding up the passivation process.
- » Diminishes the risk of discoloured surfaces caused by flash clouds or free iron (smut) when used wet-on-wet.
- » Reduces the formation of toxic nitric fumes during rinsing after pickling.
- » Prevents water staining caused by poor rinse water.
- » Creates no hazardous waste and contains no nitric acid.
- » Is easy to handle and classified as non-dangerous goods.

Surface restoration

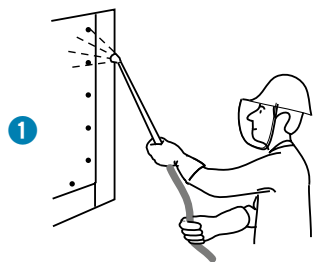
Avesta Cleaner 401 can be used together with Avesta FinishOne Passivator 630, which helps regenerate the protective layer in the stainless steel by speeding up the thickness of the passive layer.



Avesta FinishOne Passivator 630 helps speeding up the thickness of the passive layer.

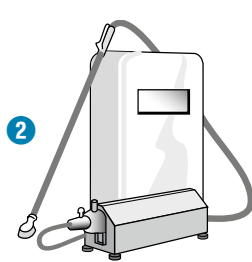


Instructions for use



1.1 To avoid smut formation after spray pickling, the passivator shall be applied before rinsing while the surface is still wet, "wet on wet". Leave the fluid to react 30 seconds.

1.2 To passivate after mechanical treatment, first pre-clean the surface using Avesta Cleaner 401, rinse with water, then apply the passivator "wet on wet", and give it 3 – 5 min. to react.

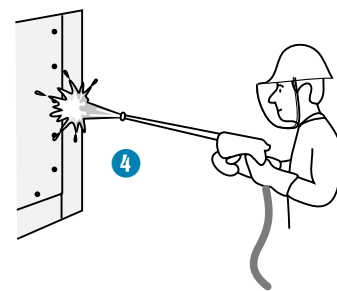


1.3 To use for reduction of nitric fumes, when pickling, spray it on as a mist over the surface "wet on wet".

2. Apply the Passivator with a spray pump, e.g. Avesta Membrane Pump SP-25.



3. Working time. See 1.



4. Rinse thoroughly with water. There is no need to treat the waste water which is neutral and acid-free. If a complete residue free surface is needed make a final rinse with deionized water.

Packaging

Avesta FinishOne Passivator 630 is supplied in 25 kg and 1000 kg IBC polyethylene containers.

Storage

Avesta FinishOne Passivator 630 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorized persons.

Keep the lid on at all times when not in use. Metals, alkaline, organic materials, heat and UV radiation will degrade the product. Store in a clean, cool and UV protected environment. Avoid contact with textiles.

Worker safety

Protective clothing. In general, users should wear acid-resistant overalls, gloves and rubber boots. Face visor should be used and, if necessary, suitable respiratory protective devices.

Special conditions may apply from one country to another. Consult our website where updated Safety Data Sheets can be found.

Waste treatment

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

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Passivator 601

The need for an extra Passivation of Stainless Steel.

An air-passivation of Stainless steels take place naturally on a clean surface. However in the presence of surface contamination, like free iron from contact with carbon steel tooling, this may interfere with the formation of the passive film. These contaminants has to be removed by using Passivator 601 to allow the oxygen uniform access to the surface in order to create the protective passive film. Further the air-passivation may take too much time in some aggressive environments, like close to the sea side. The passive film build up may need assistance of the Passivator 601 to speed up the formation.

A traditional nitric acid based, well-proven Passivator

Avesta Passivator 601 contains nitric acid in accordance with ASTM A 967 for the Passivation of stainless steel by spraying, immersion or circulation.

As an alternative for spray passivation we also recommend our acid-free Avesta FinishOne Passivator 630, to improve safety and minimize the environmental impact.

Standard applications

- » The Passivator 601 restores stainless steel surfaces, after pickling or mechanical cleaning, that have been damaged during fabrication operations such as welding, forming, cutting and blasting. It removes free iron and speeds up the formation of the protective passive layer to prevent local corrosion.
- » For the Maintenance Cleaning of stainless steel objects in service which are suffering from surface rust / tea staining. The Avesta Cleaner 401 can be used together with Passivator 601, they will remove the surface rust and then promote the regeneration of the protective layer in the stainless steel by speeding up the thickness of the passive layer.

Features

- » Accelerates rebuilding of the protective layer of chromium oxide.
- » Removes surface contaminants and iron particles from stainless steel surfaces.



Photo: Maintenance Cleaning of tea-staining of hand railings on the sea side



Photo: The tricky thing with free (unalloyed) iron particles is that you don't see them on the surface of stainless steel, until they start rusting in humid air and get brownish



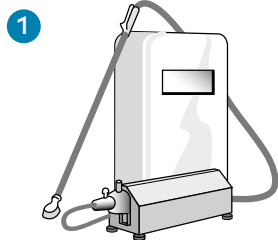
1100 kg IBCs



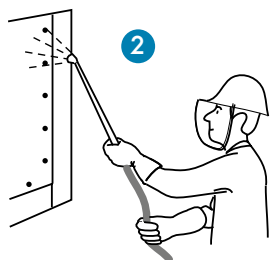
28 kg drums

Photos: Available in several packages
(Sizes may differ from markets)

Instructions for use



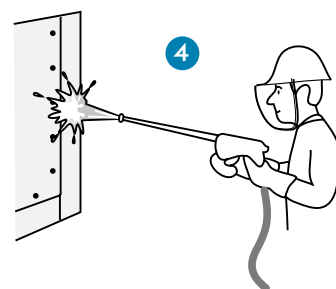
1. Apply the Passivator 601 by spraying with an acid resistant spray pump like Avesta SP 25 or by dipping, circulating or with a brush.



2. Apply the Passivator evenly over the entire surface.



3. Typical reaction time for all stainless steel grades is 20-30 min. at room temperature .



4. Rinse off the Passivator 601 residuals by using a high-pressure water jet. Use deionized water for the final rinsing of sensitive surfaces. The waste water should be neutralized before discharge.

Packaging

Avesta Passivator 601 is supplied in 25 kg , and 1100 kg IBC polyethylene packages. Availability of different packages sizes may differ between markets.

Storage

Avesta Passivator 601 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorized persons.

Worker safety

Protective clothing. In general, users should wear acid-resistant overalls, gloves and rubber boots. Face visor should be used and, if necessary, suitable respiratory protective devices.

Special conditions may apply from one country to another. Consult our website where updated Safety Data Sheets can be found.

Waste treatment

The waste water produced when passivating with Passivator 601 contains acids and should be treated with Avesta Neutraliser 502 or with slaked lime to a pH-value of 7-10 before discharge

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

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FinishOne Passivator 630

The need for an extra Passivation of Stainless Steel.

An air-passivation of Stainless steels take place naturally on a clean surface. However in the presence of surface contamination, like free iron from contact with carbon steel tooling, this may interfere with the formation of the passive film. These contaminants has to be removed by using Passivator 630 to allow the oxygen uniform access to the surface in order to create the protective passive film. Further the air-passivation may take too much time in some aggressive environments, like close to the sea side. The passive film build up may need assistance of the Passivator 630 to speed up the formation.

A safer-to-use acid free Passivator!

Many of the processes used for passivation of stainless steel lead to the development of hazardous nitric fumes. We have developed a ONE Technology, to avoid this with a unique non fuming passivator which reduces the toxic nitric fumes by 100%.

Standard applications

The Passivator 630 restores stainless steel surfaces, after pickling or mechanical cleaning, that have been damaged during fabrication operations such as welding, forming, cutting and blasting. It removes free iron and speeds up the formation of the protective passive layer to prevent local corrosion.

Avesta FinishOne Passivator 630 passivates without nitric or citric acid. This Passivator is acid free and safe to use. The resulting rinse water is acid free and hence no need for and extra neutralization and waste treatment step The Passivator 630 is intended for spray passivation only. For immersion or circulation passivation we recommend the Avesta 601 Passivator

Features

- » ONE Technology, 100% NOx-reduction, this prevents the workers from breathing dangerous acid fumes.
- » Higher yield, superior performances compared to nitric and citric acid passivation.
- » Acid free, creates no toxic waste to handle, no risk for nitrates in the rinse water. Easy to handle and to ship, classified as non dangerous goods.
- » Diminish the risk of discolored surfaces caused by flash clouds of free Iron (SMUT) when applied we-on-wet.
- » For reduction of Nitric fumes during pickling by spraying a mist over the pickled surcafe "vet on wet".



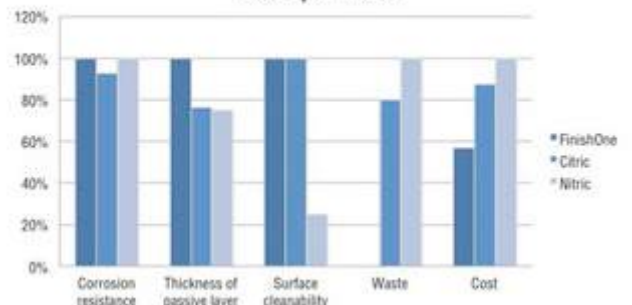
1000 kg IBCs



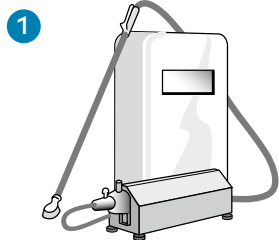
25 kg drums

Photos: Available in several packages (Sizes may differ from markets)

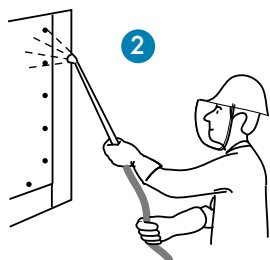
Comparing study between FinishOne, nitric acid and citric acid – relative performance



Instructions for use



1. Apply the Passivator 630 by spraying with a spray pump like Avesta SP 25 or with a brush.



2. The Passivator 630 can be used for different purposes:

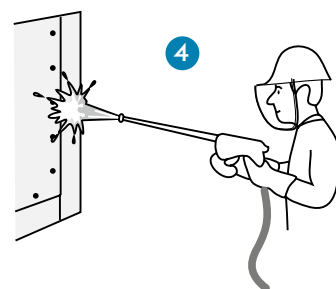
2.1. To passivate after pickling, and avoid SMUT formation after spray pickling, the 630 shall be applied while the surface is still wet, "wet on wet".

2.2. To passivate after mechanical treatment, first pre-clean the surface using Avesta Cleaner 401 give it 20 min. to react., rinse with water, then apply the Passivator 630. "wet on wet".

2.3. To reduce nitric fumes when pickling, spray on the pickling fluid as a "mist" "wet on wet".



3. Typical reaction time for each purposes and all stainless steel grades is 10-15 min. 20°C The pickling time may vary for the same



4. Rinse off the Passivator 630 residuals by using a high-pressure water jet. Use deionized water for the final rinsing of sensitive surfaces. The waste water do not need to be neutralized.

Packaging

Avesta FinishOne Passivator 630 is supplied in 25 kg and 1000 kg IBC polyethylene packages. Availability of different packages sizes may differ between markets.

Storage

Avesta FinishOne Passivator 630 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorized persons. Keep the lid on at all times when not in use. Metals, alkaline, organic materials, heat and UV radiation will degrade the product. Store in a clean, cool and UV protected environment. Avoid contact with textiles.

Worker safety

Protective clothing. In general, users should wear acid-resistant overalls, gloves and rubber boots. Face visor should be used and, if necessary, suitable respiratory protective devices.

Special conditions may apply from one country to another. Consult our website where updated Safety Data Sheets can be found.

Maintenance Cleaning

For the cleaning of stainless steel objects in service which are suffering from surface rust / tea staining. The Avesta Cleaner 401 can be used together with Avesta FinishOne Passivator 630, they will remove the surface rust and then promote the regeneration of the protective layer in the stainless steel by speeding up the thickness of the passive layer.

Waste treatment

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

For more information, please visit our website:

www.voestalpine.com/welding, where you can find Safety Data Sheets and other useful information.



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Pickling Bath 302

For immersion and circulation pickling.

Avesta Pickling Bath 302 is a concentrate that should be diluted with water depending on the stainless steel grade.

Standard applications

The pickling bath 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.

Avesta Pickling Bath 302 is recommended for immersion pickling of small objects and for pickling surfaces that are time-consuming to brush or spray pickle. It can also be used for circulation pickling of pipe systems.

Features

- » An efficient, economical and strong concentrate, the 302 can be diluted 1 part of acid to 3 parts of water (25 kg of conc 302 will give 100 kg ready to use product) for immersion pickling of steel grade 304 (1.4301) compared to 1 part of acid to 1 part of water 1 for standard pickling bath products (25 kg of standard conc product will give only 50 kg ready to use product)
- » Working life; the bath fluid is consumed during usage and the effective working life of the bath fluid is determined by the amount of acids and dissolved metals. The bath fluid should hence be analyzed regularly, and new acid should be added when needed in order to obtain an optimal pickling result. We may assist with this analysis service, see also Product Information Data Sheet concerning Avesta Pickling Bath Services.



1200 kg IBCs



240 kg drums



33 kg drums



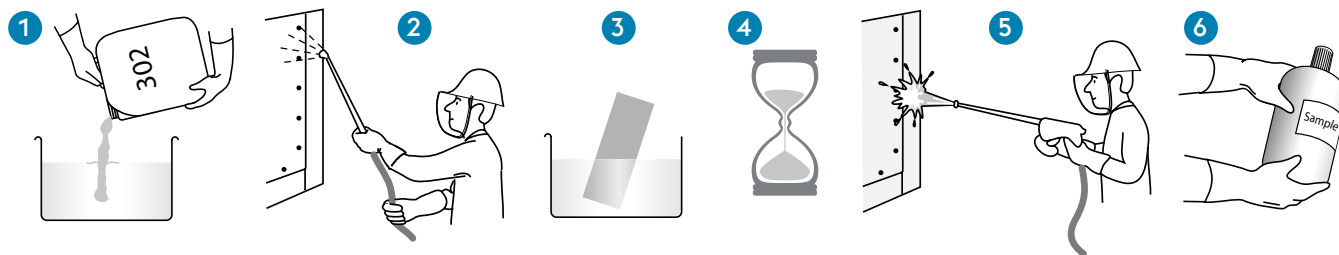
Photo: Immersion pickling with Bath 302



Photo: Result with Bath 302 before and after circulation pickling

Photos: Available in several packages (Sizes may differ from markets)

Instructions for use



1. For first time use, mix the bath by adding the 302 to the water, not the other way around! The proportions depend on the steel grade to pickle. For standard grades like 304 (1.4301) use 1 part of 302 and 3 parts of water.

2. Pre-clean, remove oil and grease by using Avesta Cleaner 401, and then rinse with water.

3. Immerse the object into the pickling VAT.

4. Allow sufficient pickling time. Use 5 min. to 4 hours depending on temperature of the bath, steel grade and conditions of the bath.

4. Rinse off the pickling residuals by using a high-pressure water jet. Use deionized water for the final rinsing of sensitive surfaces. The waste water should be neutralized before discharge.

5. Take a sample and analyze the bath content of acids and free metals regularly to maintain optimal bath composition and pickling result.

Packaging

Avesta Pickling Bath 302 is supplied in 33 kg and 240 kg polyethylene containers or 1200 kg IBC polyethylene containers. Availability of different packages sizes may differ between markets.

All packing material follows the UN regulations for hazardous goods.

Storage

Avesta Pickling Bath 302 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorized persons.

The product is perishable and should not be kept in storage longer than necessary. The spray may decompose during storage and hence need to be stirred before usage. It has a maximum shelf life of two years when stored at room temperature. Exposure to higher temperatures (>35°C) may damage the product and reduce the shelf life.

Worker safety

Hexafluorine® should be readily available to all who work with pickling to use as a first rinse to decontaminate small acid splashes of pickling bath, followed by Calcium Gluconate Gel or Solution to be used as a first aid to treat the HF acid burn.

Protective clothing. In general, users should wear acidresistant overalls, gloves and rubber boots. Face visor should be used and, if necessary, suitable respiratory protective devices.

Special conditions may apply from one country to another. Consult our website where updated Safety Data Sheets can be found.

Waste treatment

The wastewater produced when pickling contains acids and should be treated with Avesta Neutraliser 502 or with slaked lime to a pH-value of 7-10 before discharge. Heavy metals from stainless steel are precipitated as a sludge, and should be sent for deposition according to local regulations.

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

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PICKLING GEL 122

Pickling gel for use and storage in warmer climates

Avesta Pickling Gel 122 is more free-flowing than a pickling paste to facilitate the application and to give a high coverage. It can hence be used to clean with a good result.

Standard applications

This gel is universal and specifically intended for standard brush pickling of weld seams and smaller surfaces of all stainless steel grades.

Features

- » Restores damaged stainless steel surfaces such as weld seams, by removing weld oxides, the underlying chromium-depleted layer and other defects that may cause local corrosion.
- » Improved pickling result, offers a brighter surface with less discolouration than classic products.
- » The transparent gel consistency gives good adhesion to the stainless steel surface.
- » Can be used and stored in warmer climates (the gel is heat-stable up to +45 °C).



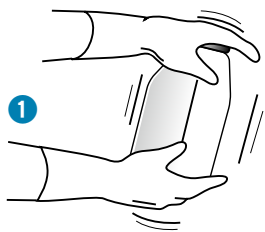
Avesta Pickling Gel 122 is easy to apply thanks to its free-flowing consistency.



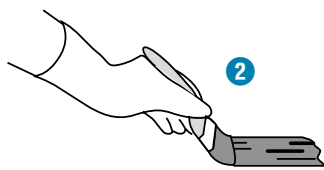
Avesta Pickling Gel 122 is intended for brush pickling of welds and surfaces.



Instructions for use



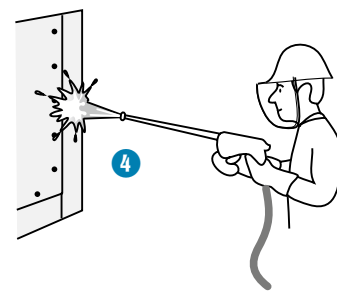
1. Stir or shake the paste before use.



2. Apply the paste with an acid-resistant brush.



3. Leave the paste to work 30 min to 4 hours (depending on temperature and steel grade). The temperature of the workpiece should always be higher than +5 °C.



4. Remove pickling residues by using a high-pressure water jet, or with a stain-less steel brush and then rinse with water. The waste water should be treated before discharge.

Packaging

Avesta Pickling Gel 122 is supplied in a 2.4 kg polyethylene container supplied in a 4-pack cardboard box, and a 13 kg polyethylene container.

All packing material follows the UN regulations for hazardous goods.

Storage

Avesta Pickling Gel 122 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorized persons.

The product is perishable and should not be kept in storage longer than necessary. It has a maximum shelf life of two years when stored at room temperature. Exposure to higher temperatures (> 45 °C) may damage the product and reduce the shelf life.

Worker safety

Avesta First Aid Spray 910 (available only on some markets) or Hexafluorine® should be readily available to all who work with pickling to use as a first rinse to decontaminate small acid splashes of pickling paste, followed by Calcium Gluconate Gel or Solution to be used as a first aid to treat the HF acid burn.

Protective clothing. In general, users should wear acid-resistant overalls, gloves and rubber boots. Face visor should be used and, if necessary, suitable respiratory protective devices.

Special conditions may apply from one country to another. Consult our website where updated Safety Data Sheets can be found.

Waste treatment

The waste water produced when pickling contains acids and should be treated with Avesta Neutraliser 502 or with slaked lime to a pH-value of 7 – 10 before discharge.

Heavy metals from stainless steel are precipitated as a sludge, and should be sent for deposition according to local regulations.

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

For more information, please visit our website: <http://www.vabw-service.com/voestalpine> where you can find Safety Data Sheets and other useful information.



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PICKLING PASTE 101

The original pickling paste

Avesta Pickling Paste 101 is the original and only real paste on the market with over 50 years experience. It offers a perfect paste consistency that gives good adhesion to difficult surfaces and reduces the risk of splashing.

Standard applications

This paste is universal and specifically intended for standard brush pickling of weld seams and smaller surfaces of all stainless steel grades.

Features

- » Restores damaged stainless steel surfaces such as weld seams, by removing weld oxides, the underlying chromium-depleted layer and other defects that may cause local corrosion.
- » Improved pickling result, offers a brighter surface with less discolouration than classic products.
- » Offers a perfect paste consistency that gives good adhesion to difficult surfaces and reduces the risk of splashing.
- » No risk of sagging thanks to its thick paste consistency.
- » Heat sensitive, only for storing and pickling in temperature range of +10 to 30 °C.
- » For non-heavy-duty applications we suggest our low fuming Avesta BlueOne™ Pickling Paste 130, in order to improve the environmental impact and safety when pickling.

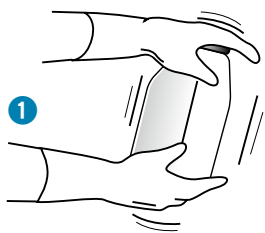


Avesta Pickling Paste 101 – the only real paste on the market.

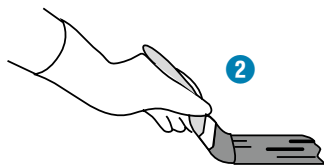


Before and after pickling. Avesta Pickling Paste 101 – for brush pickling in all positions.

Instructions for use



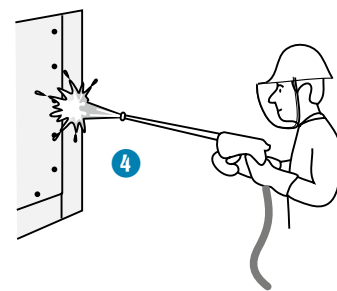
1. Stir or shake the paste before use.



2. Apply the paste with an acid-resistant brush.



3. Leave the paste to work 30 min to 4 hours (depending on temperature and steel grade). The temperature of the workpiece should always be higher than +5 °C.



4. Remove pickling residues by using a high-pressure water jet, or with a stainless steel brush and then rinse with water. The waste water should be treated before discharge.

Packaging

Avesta Pickling Paste 101 is supplied in a 2.6 kg polyethylene container supplied in a 4-pack cardboard box.

All packing material follows the UN regulations for hazardous goods.

Storage

Avesta Pickling Paste 101 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorized persons.

The product is perishable and should not be kept in storage longer than necessary. It has a maximum shelf life of two years when stored at room temperature. Exposure to higher temperatures (> 35 °C) may damage the product and reduce the shelf life.

Worker safety

Avesta First Aid Spray 910 (available only on some markets) or Hexafluorine® should be readily available to all who work with pickling to use as a first rinse to decontaminate small acid splashes of pickling paste, followed by Calcium Gluconate Gel or Solution to be used as a first aid to treat the HF acid burn.

Protective clothing. In general, users should wear acid-resistant overalls, gloves and rubber boots. Face visor should be used and, if necessary, suitable respiratory protective devices.

Special conditions may apply from one country to another. Consult our website where updated Safety Data Sheets can be found.

Waste treatment

The waste water produced when pickling contains acids and should be treated with Avesta Neutraliser 502 or with slaked lime to a pH-value of 7 – 10 before discharge.

Heavy metals from stainless steel are precipitated as a sludge, and should be sent for deposition according to local regulations.

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

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Pickling Spray 204

A pickling spray for tougher applications.

Avesta Pickling Spray 204, is intended for tougher applications and offers an aggressive spray pickling result for larger stainless steel surfaces.

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

Avesta Pickling Spray 204 is formulated for more difficult pickling applications such as heavy hot rolled plates, high-alloyed steels such as 904. For normal applications, we suggest the use of our low fuming Avesta RedOne Pickling Spray 240 in order to improve safety. For very difficult applications such as Duplex grades we recommend the usage of our Avesta Duplex Pickling Spray 250.

Features

- » The transparent spray gel has a thixotropic consistency, which makes it stick well to the surface and hence facilitates the application even in difficult positions.
- » The process is sensitive to strong sunlight/high temperatures and the spray may dry into the surface and be difficult to remove. For more sensitive application the Avesta RedOne Spray 240 is recommended since it will not dry easily.



1200 kg IBCs



220 kg drums

30 kg drums

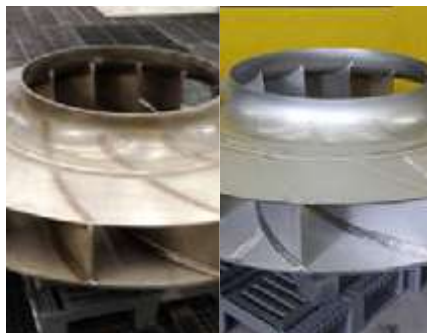
20 kg drums



Photos: Available in several packages
(Sizes may differ from markets)



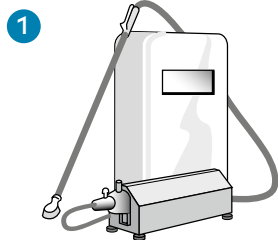
Photo: During



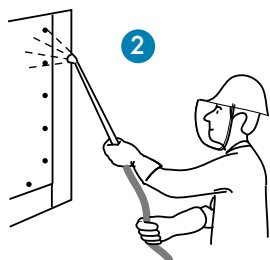
Before

After

Instructions for use



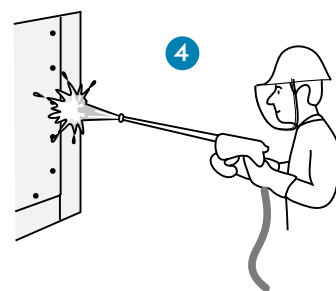
1. Apply all chemicals by using an acid resistant pump like Avesta SP 25. Start with pre-cleaning to remove oil and grease by using Avesta Cleaner 401 and then rinse off with water.



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



3. Typical reaction time for higher alloyed steel grades like 904L (1.4539) is 200 min at 20 °C and 120 min. at 35 °C. The pickling time may vary for the same steel grade depending on surface finish and welding method.



4. Rinse off the pickling residuals by using a high-pressure water jet. Use deionized water for the final rinsing of sensitive surfaces. The waste water should be neutralized before discharge.

Packaging

Avesta Pickling Spray 204 is supplied in 20, 30 kg and 220 kg polyethylene containers or 1200 kg IBC polyethylene containers. Availability of different packages sizes may differ between markets.

All packing material follows the UN regulations for hazardous goods.

Storage

Avesta Pickling Spray 204 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorized persons.

The product is perishable and should not be kept in storage longer than necessary. The spray may decompose during storage and hence need to be stirred before usage. It has a maximum shelf life of two years when stored at room temperature. Exposure to higher temperatures (>35 °C) may damage the product and reduce the shelf life.

Worker safety

Avesta First Aid Spray 910 (available only on some markets) or Hexafluorine® should be readily available to all who work with pickling to use as a first rinse to decontaminate small acid splashes of pickling spray, followed by Calcium Gluconate Gel or Solution to be used as a first aid to treat the HF acid burn.

Protective clothing. In general, users should wear acidresistant overalls, gloves and rubber boots. Face visor should be used and, if necessary, suitable respiratory protective devices.

Special conditions may apply from one country to another. Consult our website where updated Safety Data Sheets can be found.

Passivation

To further improve the result we recommend a passivation after pickling using Avesta FinishOne Passivator 630, which is a safer-to-use acid free passivation method

Waste treatment

The wastewater produced when pickling contains acids and should be treated with Avesta Neutraliser 502 or with slaked lime to a pH-value of 7-10 before discharge. Heavy metals from stainless steel are precipitated as a sludge, and should be sent for deposition according to local regulations.

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

For more information, please visit our website:

www.voestalpine.com/welding, where you can find Safety Data Sheets and other useful information.



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RedOne™ Pickling Paste 140

A powerful, safer-to-use pickling paste.

Many of the processes used for pickling stainless steel lead to the development of hazardous nitric fumes. We have developed a ONE Technology, to avoid this with a unique low fuming pickling paste which reduces the toxic nitric fumes by 50%.

Standard applications

The pickling paste 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.

Avesta RedOne™ Pickling Paste 140 is a stronger version for more difficult brush pickling of welds and smaller surfaces, such as high alloyed steel grades and at lower temperatures, For more standard applications we suggest the more low fuming Avesta BlueOne™ Pickling Paste 130.

Features

- » ONE Technology, 50% NO_x-reduction, this prevents the workers from breathing dangerous acid fumes.
- » Higher yield, 60% less consumption, thanks to the visible red colour and its free-flowing consistency which facilitates application.
- » Improved pickling result, offers a brighter surface with less discoloration than classic products, see photos.



2,4 kg drums



13 kg drums

Photos: Available in several packages (Sizes may differ from markets)

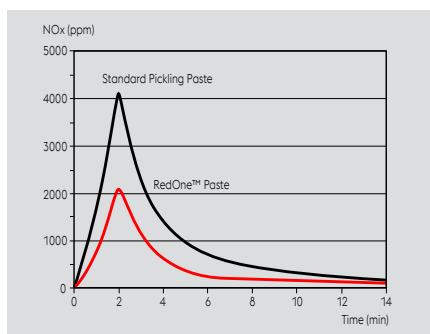
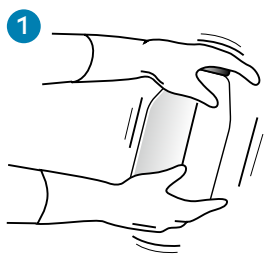


Figure: 50% fume reduction compared to standard Pickling Paste



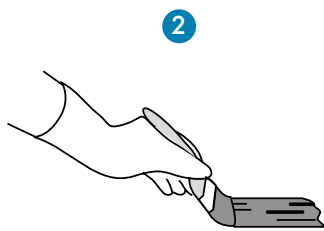
Photos showing the application of RedOne™ Pickling Paste and pickling at low temperature (+8 °C) of high alloyed heat exchanger 2205 (1.4462)

Instructions for use



1. Pre-clean, remove oil and grease using Avesta Cleaner 401, and then rinse off with water.

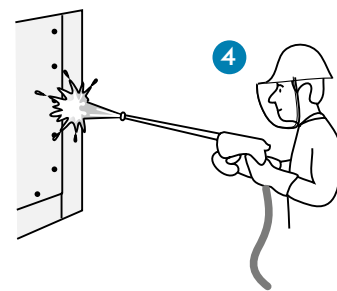
2-Stir or shake the paste before usage.



2. Apply the paste with an acid resistant brush.



3. Typical reaction time for standard alloyed steel grades like 2205 (1.4462) is 90-120 min. at 10 °C 60-90 min. at 20 °C the pickling time may vary for the same steel grade depending on surface finish.



4. Rinse off the pickling residuals by using a high-pressure water jet. Use deionized water for the final rinsing of sensitive surfaces. The waste water should be neutralized before discharge.

Packaging

Avesta RedOne™ Pickling Paste 140 is supplied in 2,4 kg and 13 kg polyethylene bottles. Availability of different packages sizes may differ between markets.

All packing material follows the UN regulations for hazardous goods.

Storage

Avesta RedOne™ Pickling Paste 140 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorized persons.

The product is perishable and should not be kept in storage longer than necessary. The gel may decompose during storage and hence need to be stirred before usage. It has a maximum shelf life of two years when stored at room temperature. Exposure to higher temperatures (>35 °C) may damage the product and reduce the shelf life.

Worker safety

Avesta First Aid Spray 910 (available only on some markets) or Hexafluorine should be readily available to all who work with pickling to use as a first rinse to decontaminate small acid splashes of pickling paste, followed by Calcium Gluconate Gel or Solution to be used as a first aid to treat the HF acid burn.

Protective clothing. In general, users should wear acid resistant overalls, gloves and rubber boots. Face visor should be used and, if necessary, suitable respiratory protective devices.

Special conditions may apply from one country to another. Consult our website where updated Safety Data Sheets can be found.

Pre-cleaning

To further improve the result we recommend to remove present oil and grease before pickling using Avesta Cleaner 401.

Passivation

To further improve the result we recommend a passivation after pickling using Avesta FinishOne Passivator 630, which is a safer-to-use acid free passivation method.

Waste treatment

The wastewater produced when pickling contains acids and should be treated with Avesta Neutraliser 502 or with slaked lime to a pH-value of 7-10 before discharge. Heavy metals from stainless steel are precipitated as a sludge, and should be sent for deposition according to local regulations.

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

For more information, please visit our website:

www.voestalpine.com/welding, where you can find Safety Data Sheets and other useful information.



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RedOne™ Pickling Spray 240

A unique, safer-to-use pickling spray.

Many of the processes used for pickling stainless steel lead to the development of hazardous nitric fumes. We have developed a ONE Technology, to avoid this with a unique low fuming pickling spray which reduces the toxic nitric fumes by 60%.

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.

Avesta RedOne™ Pickling Spray 240 is universal and suitable for spray pickling larger surfaces of all stainless steel grades. High alloyed steels and duplex steels may need more than one treatment. The Avesta Duplex Spray 250 is also a stronger alternative for duplex steels.

Features

- » ONE Technology, 60% NO_x-reduction, this prevents the workers from breathing dangerous acid fumes. See enclosed photos of the yellow NO_x fumes during pickling staining caused by sea water, "tea-staining", rain water, "water scale" and road salt. For more severe surface rust, pickling may be required.
- » Perfect Adhesion & high efficiency thanks to the thixotropic properties of the spray. At the application after shaking it is very fluid (easy to spray), after being on the surface the product gets a very good adhesion again.

Benefits

- » No reduced overhead dropping
- » A very thin layer of the is enough (high efficiency)
- » Easy to use, doesn't dry out. Has long term efficiency hence can be used on different steel grades in adjusting the pickling time. Easy to wash off

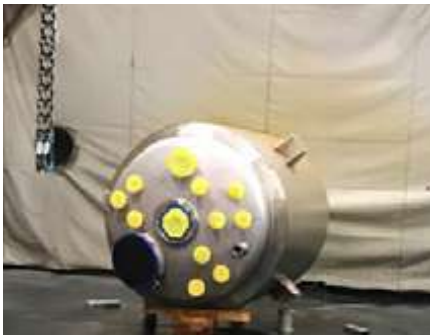


Photo: Spray pickling with Avesta RedOne™ 240



Photo: Spray pickling competitor



1200 kg IBCs



220 kg drums

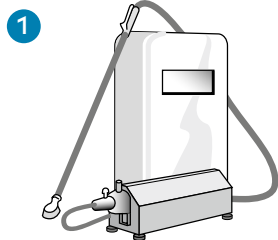
30 kg drums

20 kg drums

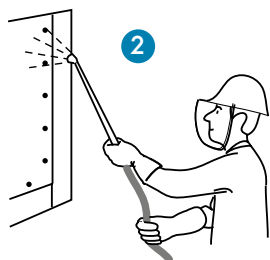


Photos: Available in several packages
(Sizes may differ from markets)

Instructions for use



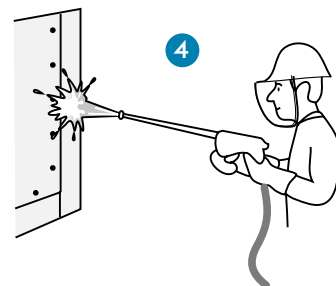
1. Apply all chemicals by using an acid resistant pump like Avesta SP 25. Start with pre-cleaning to remove oil and grease by using Avesta Cleaner 401 and then rinse off with water.



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 s like 304 & 316 is 40 min at 20oC and 30 min at 30oC. The pickling time may vary for the same steel grade depending on surface.



4. Rinse off the pickling residuals by using a high-pressure water jet. Use deionized water for the final rinsing of sensitive surfaces. The waste water should be neutralized before discharge.

Packaging

Avesta RedOne™ Pickling Spray 240 is supplied in 20, 30 kg and 220 kg polyethylene containers or 1200 kg IBC polyethylene containers. Availability of different packages sizes may differ between markets.

All packing material follows the UN regulations for hazardous goods.

Storage

Avesta RedOne™ Pickling Spray 240 should be stored indoors at room temperature. Containers must be kept properly closed, in an upright position and inaccessible to unauthorized persons.

The product is perishable and should not be kept in storage longer than necessary. The spray may decompose during storage and hence need to be stirred before usage. It has a maximum shelf life of two years when stored at room temperature. Exposure to higher temperatures (>35°C) may damage the product and reduce the shelf life.

Worker safety

Avesta First Aid Spray 910 (available only on some markets) or Hexafluorine® should be readily available to all who work with pickling to use as a first rinse to decontaminate small acid splashes of pickling spray, followed by Calcium Gluconate Gel or Solution to be used as a first aid to treat the HF acid burn.

Protective clothing. In general, users should wear acidresistant overalls, gloves and rubber boots. Face visor should be used and, if necessary, suitable respiratory protective devices.

Special conditions may apply from one country to another. Consult our website where updated Safety Data Sheets can be found.

Passivation

To further improve the result we recommend a passivation after pickling using Avesta FinishOne Passivator 630, which is a safer-to-use acid free passivation method

Waste treatment

The wastewater produced when pickling contains acids and should be treated with Avesta Neutraliser 502 or with slaked lime to a pH-value of 7 – 10 before discharge. Heavy metals from stainless steel are precipitated as a sludge, and should be sent for deposition according to local regulations.

Empty containers (HDPE) must be cleaned and can then be recycled according to local regulations.

Other information

For more information, please visit our website:

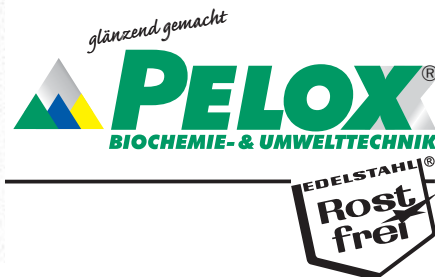
www.voestalpine.com/welding, where you can find Safety Data Sheets and other useful information.



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Sprays • Sprays

Reinigungs- und Pflegeprodukte für Edelstähle *Cleaning and Care Products for Stainless Steels*



R 500 Edelstahl-Reinigungs- u. Pflegeprodukt

Intensivreiniger und Pflegemittel für Edelstahl zur schnellen und wirksamen Entfernung von Ölen, Fetten, Schmierstoffen sowie Klebstoffrückständen und Graffiti von Edelstahloberflächen, auch zur Anwendung bei Stein, Beton, Marmor, Fliesen, Holz und Glas empfohlen. Besonders geeignet in Bereichen mit Publikumsverkehr durch Additive von Citruschalenextrakten.

R 500 Stainless Steel Cleaning and Maintenance Product

Intensive cleaning and maintenance product for the fast and effective removal of oils, greases, lubricators, glue residues and graffiti from stainless steel surfaces as well as from masonry, concrete, marble, tiles, wood and glass. The product is particularly suited for the use in public areas due to the citrus peel extract additives. The product protects against corrosion and delays contamination.

F 520 Feuchtigkeitsschutz

Der Feuchtigkeitsschutz schützt Metalle während der Lagerung, speziell im Freien. Er unterwandert und verdrängt Feuchtigkeit, verhindert weitergehende bzw. erneute Korrosion. Feuchtigkeitsschutz besitzt eine hervorragende Kriechfähigkeit und ist universell einsetzbar, z.B. auch zum Trocknen von Elektromotoren, -ausrüstungen und -leitungen.

F 520 Moisture Protection

The Moisture Protection F 520 protects metals during storage, especially in open air. It infiltrates and drives out humidity and avoids further resp. fresh corrosion. Moisture protection has excellent creeping abilities and can be used universally, e.g. for the drying of electric motors, equipment and circuits.

OS 540 Oberflächenschutz (leichter Reiniger)

Das Oberflächenschutzmittel ist ein Langzeitkorrosionsschutzmittel für Edelstahloberflächen, die starken Korrosionseinwirkungen ausgesetzt sind. Es ist leicht durch Sprühen, Tauchen oder Streichen zu verarbeiten und läuft, fließt bzw. tropft nicht ab. Extreme Temperaturbeständigkeit zwischen -40°C und +260°C. Der Oberflächenschutz bleibt auch bei Seewasser- und Seewettereinflüssen stabil. Das Langzeitkorrosionsmittel beeinträchtigt nicht nachfolgende Schweißarbeiten und lässt sich leicht mit Lösungsmittel (MEK) entfernen.

OS 540 Surface Protection (cleans easily)

The Surface Protection OS 540 is a long term corrosion protection for stainless steel surfaces which are subject to powerful corroding influences. It can be easily applied by spraying, dipping or varnishing and does neither run nor drip off. The product has extreme temperature resistance between -40°C and +260°C. The surface protection remains stable even in maritime weather or under sea water influence. The long term corrosion protection does not impede subsequent welding operations and can be easily removed with a solvent (MEK).

Korrosions- und Schweißschutzprodukte für Edelstahl *Corrosion- and Welding Protection Products for Stainless Steel*

FT 600 Food-Tech-Oil

Food-Tech-Oil FT 600 pflegt, konserviert und schützt Ausrüstungen aus Edelstahl, die beim Herstellen, Konfektionieren und Vertrieb von Lebensmitteln eingesetzt werden. Auch in der Gastronomie, Pharmazie sowie in medizinischen Bereichen ist das qualitativ hochwertige Öl ohne Einschränkungen einsetzbar und deshalb auch für andere Bereiche bestens geeignet.

FT 600 Food-Tech-Oil

Pelox Food-Tech-Oil FT 600 maintains, conserves and protects stainless steel equipment for the use in food processing industries. The high quality oil can also be used without limitations in medical, pharmaceutical and catering areas and can therefore be used in other fields as well

ES 620 Edelstahlspray

Das Edelstahlspray ES 620 aus mikrofeinem Edelstahlpulver gewährleistet mit einem neuartigen Trägerharz einen dauerhaft wirksamen Korrosionsschutz. Es garantiert eine universelle Einsetzbarkeit bei Edelstählen in sämtlichen Wirtschaftsbereichen einschl. Bauindustrie durch Kratz-, Biege- und Schlagfestigkeit sowie einer hohen Widerstandsfähigkeit gegen aggressive Einflüsse.

ES 620 Stainless Steel Spray

Pelox Stainless Steel Spray ES 620 is a microfine stainless steel powder with a novel carrier resin which guarantees a permanently effective corrosion protection. It can be used universally on stainless steels in all commercial fields incl. building because of its marresistance, impact resistance, and stiffening abilities as well as a great resistance against aggressive ambience.

S 640 Schweißschutz-Spray

Das silikonfreie Schweißschutz-Spray S 640 verhindert beim Schweißen durch Bildung eines Schutzfilmes das Anhaften von Schweißspritzern auf Werkstoffoberflächen und Schweißdüsen. Verbleibende Schweißrückstände können problemlos entfernt werden. Das geruchsneutrale Trennmittel basiert auf der Verwendung naturidentischer Ölextrakte und enthält keine Silikone, CKW oder FCKW.

S 640 Welding Protection Spray

The silicone-free Welding Protection Spray S 640 avoids the adherence of welding spatter by forming a protective layer on material surfaces and welding tips. Remaining welding residues can be easily removed. The non-odorous parting compound is based on nature identical oil extracts and does not contain silicones or CFCs.

Alle Angaben sind unverbindlich. Produkt ist vor dem Einsatz auf Eignung zu prüfen. Technische Änderungen vorbehalten.

The indication of product suitability and associated notes are based on our experience, are not recommendations and are not legally binding. Please test product before use.

We reserve the right to amendments.

**Pelox BioChemie- u. Umwelttechnik
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