TETRA-CHEM
INDUSTRIES LTD.

271 INGERSOLL ST. S.
INGERSOLL, ONTARIO
CANADA N5C 3J7

TEL: (519) 485-4370
TOLL FREE: (888) 658-5515
FAX: (855) 762-4446
EMAIL: info@tetra-chem.com
WEB SITE: www.tetra-chem.com

Product Application Presentation

Product Identifier: **TCI 524GEL H.D.**

Process Identifier: **White stainless steel pickling gel to remove heat effected discoloration before passivation**

Product Presentation

TCI 524GEL H.D. is a thick white gel of inorganic inert fillers for Nitric and Hydrofluoric acid producing a long-time stable formula for the removal of an oxide layer on stainless steel after heat treatment such as welding. A Cr_2O_3, FeO, SiO_2 and MnO layer is formed on the surface of the stainless steel around the heat treated areas as well as on the welding joint itself. This layer must be removed to obtain the desired surface properties, a passivated layer with the proper chromium and nickel content.

Packaging: 20, 205 litres (5, 55 gallons)

Process Introduction

The brush applied **TCI 524GEL H.D.** gel formulation is designed to effectively remove deeply embedded oxidation products on the weld seam and the adjacent blue heat treat discoloration within 20–30 minutes. As the reactions take place with Nitric acid polluting fumes of Nitrous oxides are emitted to atmosphere. This gel formulation contains Nitrous oxide scavenger reactions that convert all Nitrous oxides generated to Nitrogen gas, Ammonium nitrate, Carbon dioxide and water thus producing insignificant emissions.

Process Specificity

This procedure is for trained personnel only

To start the cleaning operation, set up the chemical applicator spray systems for the **TCI 712 H.D.** degreaser and **TCI 525 H.D.** stainless steel cleaner and passivator. Regulate the air pressure to 340–400 kPa (30–50 psi). The pumps will operate automatically by starting and stopping the flow on demand at the wand.

Caution: Do not spray **TCI 525 H.D.** directly onto a hot metal surface since it will alter the chemistry resulting in staining. Walk around the whole unit being treated and thoroughly cool and wet the entire surface. If necessary apply **TCI 712 H.D.** degreaser to remove the anti-splatter with brushing, followed by a high pressure 4 gpm at 3,000 psi water rinse at close range and horizontally from the bottom up. To save time immediately apply **TCI 525 H.D.** stainless steel cleaner to preclean the weld seams. Focus on small sections at a time following the same cleaning procedure as above. Allow the stainless steel article to dry before brushing the pickling gel onto all the weld seams and heat discoloration. Afer 20–30 minutes rinse with 4gpm at 3,000 psi water. Re-apply **TCI 525 H.D.** stainless steel cleaner and passivator to visually blend the pickled areas to the rest of the body. Rinse the section with high pressure at 3000 psi water starting at the bottom and consistently moving with a 10 cm fan or less in a horizontal pattern until the top is reached. While performing this final process, a corrosion resistant protective chromium and nickel oxide is formed. Then rinse all residual chemical solution thoroughly from the surface working from the top down. Be sure to always rinse the chemical solution overspray from other sections in the same fashion. Let dry.

For industrial and institutional use only.

The information given herein is given in good faith but no warranty, expressed or implied is made.

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