

SCALING NEW HEIGHTS IN SURFACE FINISHING



INNOVATION WITH COMMITMENT

Our Mission

To introduce innovative, international, quality & revolutionary products for stainless steel industry with sustainable growth while adhering to highest standards of Quality Controls for all inputs & final products that helps in providing our valued customers trouble free service & value for their money with the continues support of our R&D experts, collaborators & associates.

We undertake Contracts for Pickling & Passivation Job work at site for our customers.
K-2 Products are approved by third party inspection agencies.



SURFACE INNOVATORS PVT. LTD.

Surface Treatment People...

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(Directors)



ISO 9001-2008

SURFACE INNOVATORS PVT. LTD.
MAKERS OF

K-2®

**PICKLING & PASSIVATION CHEMICALS
FOR STAINLESS STEEL**



- K-2 PASTE [Gel Form]
- K-2 SPRAY [Semi Gel Form]
- K-2 DIP [Liquid Form]
- K-2 DUPLO
- K-2 SSA [Inhibitor]
- K-2 BIO-PASSIVE
- K-2 400 SERIES
- K-2 CARBOCHEM
- K-2 SHINE ALL

BREAKTHROUGH

We manufacture pickling and passivation
Chemicals for stainless steel industries.



K-2 products approved by IIT under ASTM - A380 and
SIPL is in **technical** collaboration with POLIGRAT GmbH.....

K-2[®]

Pickling & Passivation
Chemicals for Stainless Steel

COMPANY PROFILE

SURACE INNOVATORS PVT. LTD. (SIPL), has been serving the stainless steel industry with their chemicals for pickling and passivation of stainless steel for over two decades. It has become a symbol of trust for most of the stainless steel industry today. The promoters Mr. Anish Shah and Mrs. Anushree Kulkarni have graduated from Mumbai University and are qualified Diploma holders in electroplating and marketing which has given the organization a boost in terms of knowledge & expertise.

The chemicals used traditionally were hazardous and not up to the mark in terms of finishing, quality and also not meeting the standards for cleaning stainless steel. The scope for new products was abundant and to cater this, promoters joined hands to form SIPL to introduce a revolutionary pickling and passivation chemicals called K-2 for the stainless steel industry. These chemicals are safe and served the purpose of making the stainless steel shine and also meet the stringent international quality & environmental standards specifications.

As a token of gratitude SIPL would like to mention that this venture would not have been a reality without the guidance of Mr. Kumar Shah Chairman of M/s. Progressive Surface System Pvt. Ltd. Mumbai.

CORE COMPETENCIES

Our ability to develop effective surface treatment chemicals with latest technology in collaboration with M/s. Poligrat GmbH, Germany is widespread to other forms of metals. Our in-house R&D team which is recognized by the Council of eminent Scientists & Research analysts is dedicated to develop products indigenously for Indian as well as emerging international markets which are suitable for local conditions & meets respective environmental standards. Our qualified engineers & management graduates which form the management & support team of **SIPL** are well equipped with knowledge & expertise and drives the organization towards success in professional & ethical manner while nurturing our corporate social responsibilities at all times.

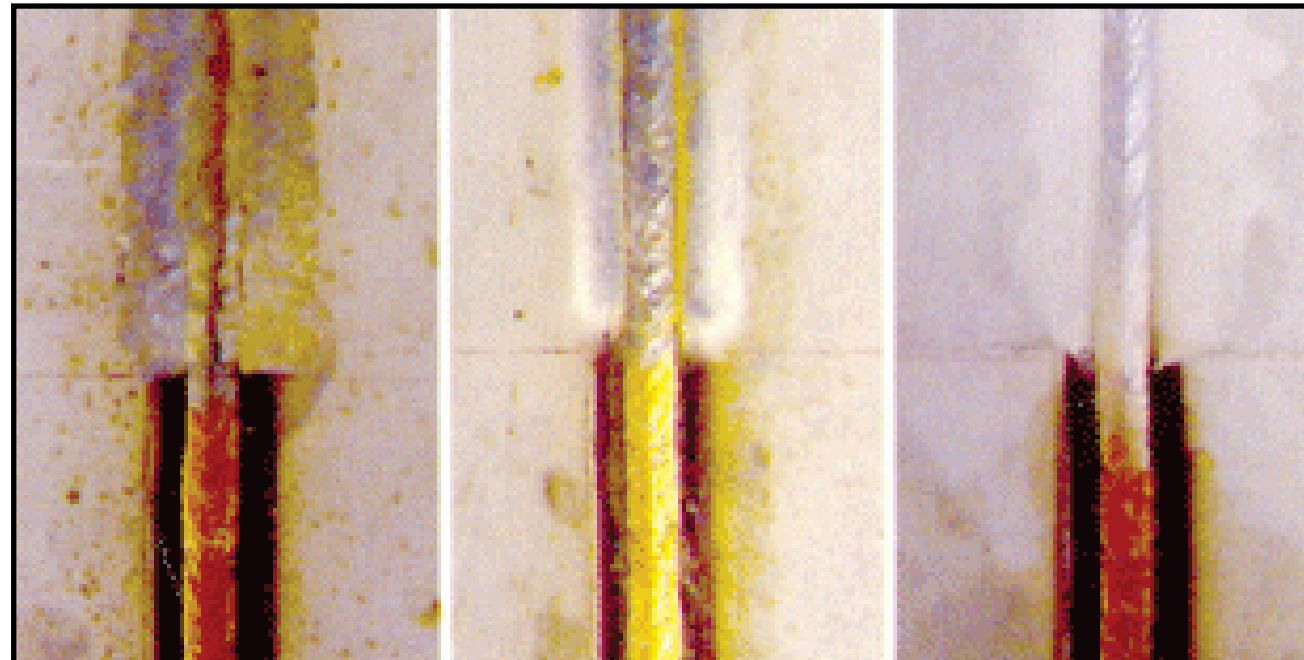
OUR VISION

To scale new heights in surface finishing with the core competencies of the organization to become a global leader in surface finishing technology in near future.

OUR MISSION

To introduce innovative, international, quality & revolutionary products for stainless steel industry with sustainable growth while adhering to highest standards of Quality Controls for all inputs & final products that helps in providing our valued customers trouble free service & value for their money with the continuous support of our R&D experts, collaborators & associates.

Advantages of K-2 Pickling over grinding and polishing



Grinding

Polishing

Pickling

GRINDING

Grinding is a mechanical action that tends to push the surface iron into the metal thereby contaminating the metal surface. This ultimately leads to rusting & corrosion, therefore K-2 pickling & passivation is a must after every mechanical action. K-2 pickling removes all the free iron from the metal surface & passivation helps in regenerating the chromium oxide layer that protects the surface from further corrosion.

POLISHING

Polishing action leaves behind tiny invisible black polishing particles or compounds on the metal surface which contaminates the metal surface & the presence of such particles on the surface make way for rusting & corrosion. Therefore it is necessary to carry out K-2 passivation after every finishing & polishing action so as to have a clean, passivated, corrosion resistant metallic surface.

K-2 PICKLING & PASSIVATION

K-2 chemicals not only removes the oxide scales, rusts particles, annealing colours from stainless steel surface making it sterile & passive but also protects the surface from further corrosion. K-2 Pickling & Passivation done on any stainless steel surface after mechanical or non-mechanical action ensures smooth, metallurgically pure surface having full corrosion resistance which increases the life & performance of the components.

WHY TO PICKLE & PASSIVATE ON STAINLESS STEEL

Pickling & passivation ensures corrosion resistance for components of stainless steel and thus influences its life and use.

The corrosion resistance of stainless steel is due to the presence of at least thirteen percent chromium in the alloy. With oxygen, the chromium forms a dense chemically resistant passive layer of chromium oxide protecting the surface of the component against corrosion. The passive layer usually forms again after abrasion. The pre-condition to corrosion resistance and passive layer is a metallurgically pure surface with a high percentage of chromium.

Every mechanical treatment damages the top layer of components i.e.

- Contamination with ferritic matter
- Change in the structure of the layers
- Development of inbuilt stress
- Reduction of chromium content

Heat treatment like annealing and welding leads to scaling and discolouration. This not only deteriorates the appearance of the component but also its corrosion resistance due to the presence of ferric oxides. A continuous passive layer of chromium oxide cannot form here. Hence it is a must to have a metallurgically clean and pure surface by pickling prior to passivation.

Corrosive stain on insufficiently passivated stainless steel leads to the following:

- Pitting corrosion,
- Crevice corrosion,
- Stress corrosion cracking,
- Intercrystalline corrosion and,
- Corrosion resulting from contact with foreign metals.

A dense passive layer can only form on metallurgically pure surfaces. Professionally pickled passivated stainless steel surfaces and welded seams:

- Are metallurgically pure, free of scales and discolouration
- Give the full corrosion resistance to the component
- Have a decorative metallic appearance

Advantages of K-2®

- Removes built in corrosion from stainless steel
- Removes scales, discolouration & ferritic contamination
- Metal removal can be controlled
- Stops corrosion & restores full corrosion resistance to the treated surface
- Fuming is negligible
- Removes metallic contaminants, oxide scales, rust spots & annealing colours
- Pin holes can be detected
- Gives flawless, uniform, smooth contamination free, sterile, particle free, passive surface

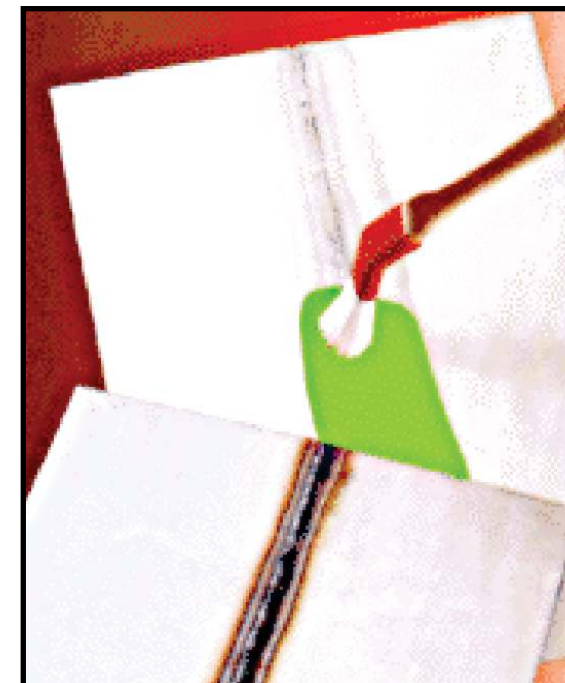


SOME FIELDS OF APPLICATION

(All stainless steel pharmaceutical machinery / chemical machinery / dairy & beverage machinery / process systems / pressure vessels / storage tanks / reactors / fermentators / s.s. pipelines / stirrers / mixers / heat exchangers / process plants / silos / huge s.s equipments etc. can be cleaned as per ASTM – A380 standards using K-2 range of chemicals.

We also undertake contract for pickling & passivation job work at site for our customers. K-2 chemicals are now approved satisfactorily by third party inspection agencies as per international standards ASTM-A380.)

K-2® PICKLING PASTE (GEL FORM)



K-2 Paste – it is used to clean weld seams and the areas surrounding the welds.

AREA COVERED

K-2 paste form covers 90 – 100 meters of weld seams with 1 kg. of chemical.

APPLICATION PROCEDURE FOR K-2 PASTE

- Add 50gms of SI. 56 Degreaser to 1 ltr. of water (5% w/v). Apply solution on the surface for 10-15 minutes & then wash thoroughly and allow the surface to air dry.
- K-2 paste is to be applied on the weld seam and surrounding area with a brush.
- Leave the K-2 paste on the weld seam for 30-45 minutes depending on the thickness of the oxide scale.
- Brush the surface with a plastic bristled brush and then wash surface thoroughly with high pressures water and allow the surface to air dry.
- Next apply K-2 passivation solution and leave it for 20-25 minutes.
- Finally clean the surface thoroughly with demineralised water and dry.

Note:

Chloride content in rinse water should be less than 50 ppm.

Shake the products well before use.

Do not apply the products on the SS Surface under direct sunlight.

K-2 passivation is a must after every pickling process.

K-2[®] PICKLING SPRAY (SEMI GEL FORM)

K-2 Spray (semi gel form) - It is used to clean large fabricated equipments of stainless steel e.g. Vessels equipments, internal & external surface of pipes by a pressurized spray bottle or spray pump.

AREA COVERED

K-2 spray form covers 40-50 sq. ft. of area with 1 kg. of chemical.



APPLICATION PROCEDURE FOR K-2 SPRAY

- Add 50gms of SI. 56 Degreaser to 1 ltr. of water (5% w/v). Apply solution on the surface for 10-15 minutes & then wash thoroughly with water and allow the surface to dry.
- K-2 spray is to be sprayed on the S.S. surface with a pressurized plastic spray bottle or spray pump.
- After spraying leave it for 30-60 minutes then scrub the surface with plastic bristled brush.
- Then wash the surface thoroughly with high pressure water and allow the surface to dry.
- Next apply K-2 passivation solution and leave it for 20-30 mins.
- Finally rinse the surface thoroughly with demineralised water and dry.

SOME FIELDS OF APPLICATION:

(All Stainless steel pharmaceutical machinery / chemical machinery / dairy & beverage machinery / process systems / pressure vessels / storage tanks / reactors / fermentators / SS pipeline / stirrers / mixers / heat exchangers / process plants / silos / huge SS equipments etc. can be cleaned as per ASTM-A380 standards.) using K-2 range of chemicals.

Note:

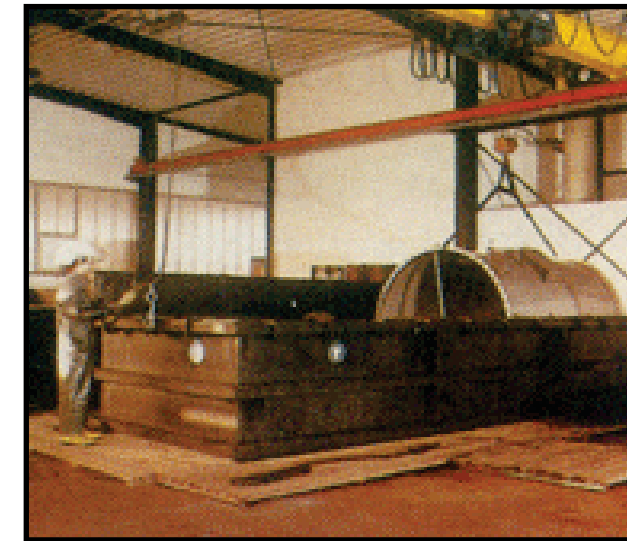
Chloride content in rinse water should be less than 50 ppm.

Shake the products well before use.

Do not apply the products under direct sunlight.

K-2 passivation is a must after every pickling process.

K-2[®] PICKLING DIP (LIQUID FORM)



AREA COVERED

K-2 dip form covers 40 - 50 sq. ft. of area with 1 ltr. of chemical.

It is used to clean complicated items, like internals of pipelines by circulatory systems. It is also used to clean wire rolls internal recessed areas of machinery by dipping into a large tank containing K-2 Dip by means of a chain pulley.

APPLICATION PROCEDURE FOR K-2 DIP

- Apply liquid SI. 56 degreaser solution on the surface for 5 - 10 minutes or immerse the item into the degreasing tank for 10 minutes . Then wash the surface thoroughly with high pressure water and allow the surface to dry.
- Immerse the equipments into the dip tank containing K-2 Dip.
- Leave it for 5-60 minutes.(depending on scale on S.S. surface)
- Remove the equipment from the tank and wash thoroughly with high pressure water and allow the surface to air dry.
- Dip the equipments again into the K-2 passivating solution for 30 minutes.
- Finally wash the equipments thoroughly with demineralised water and dry.

Note:

Chloride content in rinse water should be less than 50 ppm.

Shake the products well before use.

Do not apply the products under direct sunlight.

K-2 passivation is a must after every pickling process.

K-2[®] DUPLO

Pickling and passivation on duplex and super duplex stainless steel
K-2 DUPLO is used to clean and descale duplex stainless steel

DESALINATION PLANT - HEAT EXCHANGERS - PRESSURE VESSELS



STORAGE TANKS - REACTORS AND CHEMICAL PLANTS



Note:

Chloride content in rinse water should be less than 50 ppm.

Shake the products well before use.

Do not apply the products under direct sunlight.

K-2 passivation is a must after every pickling process.

Kindly ask for the method statement

Application Procedure is available upon request

K-2[®] SSA

(SURFACE SUPER ADDITIVE) INHIBITOR FOR STAINLESS STEEL

USE K-2 SSA AND SAVE ENVIRONMENT BY SUPPRESSING NITROUS OXIDE (NOX) FUMES
FOR BULK PICKLING ON STAINLESS STEEL



HOW TO USE / ADDITIONS?

- 0.5-1 LITRE OF K-2 SSA has to be added to the existing, regular pickling bath of 100 litres, and it can be used in both online/batch process.
- K-2 SSA works best when the iron content in the bath is approximately 0.25 gms/ltr. to 50 gms/ltr. Thus when there is some iron (Fe) content it reacts far superior.
- With additions of K-2 SSA it gives extra brighter and lustrous finish to the surface of stainless steel.
- Replenishment of K-2 SSA is to be done at regular intervals in existing pickling bath of HF; HN03; H2O only.
- With addition of K-2 SSA regular pickling bath can be discarded after maximum 60 gms/ltr of Fe content is detected.
- The most important feature of K-2 SSA is that it suppresses NOX fumes making environment more user friendly.
- Regular usage of K-2 SSA does not allow the base acid to eat up the parent metal.
- It reduces metal loss.

Note:

Chloride content in rinse water should be less than 50 ppm.

Shake the products well before use.

Do not apply the products under direct sunlight.

K-2[®] BIO PASSIVE

A bio-degradable chemical for cleaning and passivation of stainless steel process system.

Surface Innovators Pvt. Ltd. introduces a unique, safe nitric acid free, non-hazardous, non-fuming, non-toxic, bio-degradable disinfectant cleaning & passivation chemicals and cleaning techniques for pharma, food, dairy and beverage industries.

K-2 Bio Passive is ideally suitable for intermediary cleaning during production batches or while product switch over.

K-2 Bio Passive also removes residual product or contaminated deposits on the surface preventing cross contamination of the products, therefore the dual purpose of cleaning as well as passivating the stainless steel surface is achieved .

K-2 Bio Passive produces a truly passive surface and the chelating agents do not have a negative impact on the stainless steel surfaces, making the stainless steel metal absolutely corrosion resistant.

K-2 Bio Passive enhances the passive layer on stainless steel giving an optimum chrome to iron ratio making the surface corrosion resistant.

Even stainless steel electro polished surfaces when treated with K-2 Bio Passive further increases the corrosion resistance.

(K-2 BIO PASSIVE IS USEFUL IN PRE OPERATIONAL MAINTENANCE AND POST OPERATIONAL CLEANING OF STAINLESS STEEL EQUIPMENTS.)



Note:

Chloride content in rinse water should be less than 50 ppm.

Shake the products well before use.

Do not apply the products under direct sunlight.

K-2[®] 400 SERIES (PASSIVE PROTECT)

We manufacture K-2 400 series special chemicals for pickling and passivation of stainless steel.



K-2 400 series cleans, descales 400 grade of stainless steel.

K-2 passive protect is use for passivating and protecting 400 series of stainless steel.

Note:

Chloride content in rinse water should be less than 50 ppm.

Shake the well before use.

Do not apply the products under direct sunlight.

K-2 passivation is a must after every pickling process.

Important

K-2[®] PASSIVATION

K-2 passivation protects the stainless steel from further corrosion.

K-2 passivation is a must after every pickling process.

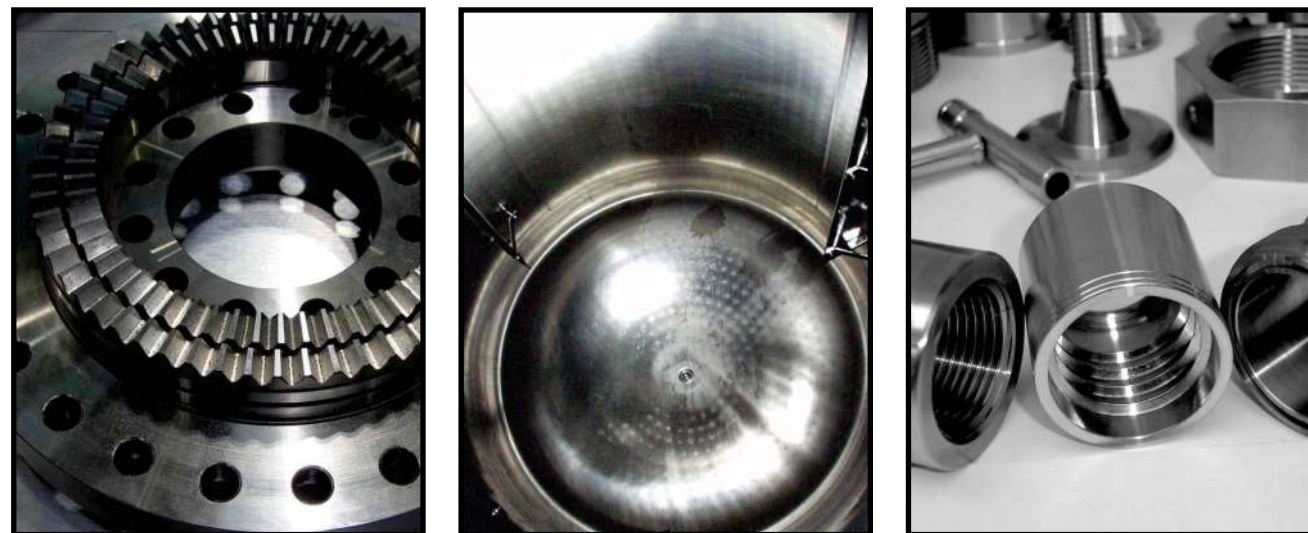
K-2[®] CARBOCHEM

A CHEMICAL POLISHING AND DEBURRING PROCESS FOR

- Machined components and pressings
- Hydraulic and pneumatic controls
- Pistons, tubes and nozzles
- Textile machines components and needles
- Gear wheels, pinions and ball bearing cages
- Stator plates
- Spring and control switch elements
- Apparatus, containers and fittings
- Wire and strips

THE PRINCIPLE OF THE K-2 CARBOCHEM PROCESS

K-2 carbochem process for chemical polishing and deburring uses a unique formulated chemical solutions and is carried out at room temperature without electrical current. K-2 carbochem can control chemical erosion it polishes and deburrs the surface of the metal.



Kindly ask for method statement

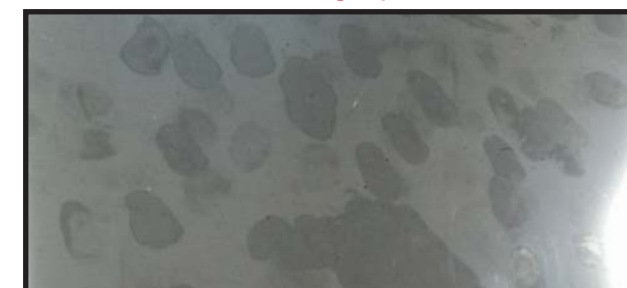
K-2[®] SHINE ALL (ANTI FINGER IMPRINT)

Polishes removes and protects finger imprints and smudges



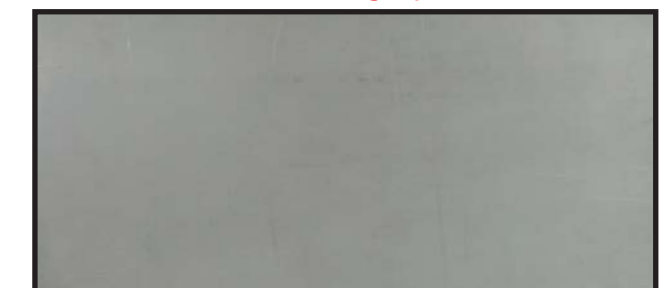
- Brighten stainless steel by removing fingerprints with one wipe
- Ideal for use on polished surfaces
- Stainless Steel
- Polished wood
- Chrome
- All metals

With Fingerprints



BEFORE K-2 SHINE ALL

Without Fingerprints



AFTER K-2 SHINE ALL

Kindly ask for method statement

Safety & Personal Protective Equipments



APPLICATION OF THE CHEMICAL SHOULD BE CARRIED OUT WITH PERSONAL PROTECTIVE CLOTHING CONSISTING OF:

- PVC suit
- PVC hand gloves
- PVC safety glasses for eyes protection
- Gumboots
- Air respirator and half mask air filter covering nose and mouth

The Pickling and Passivation activity must be carried out in a well ventilated atmosphere. Care must be taken to have sufficient exhaust systems installed across the premises. The pickling and passivation operation should never be conducted under direct sunlight.

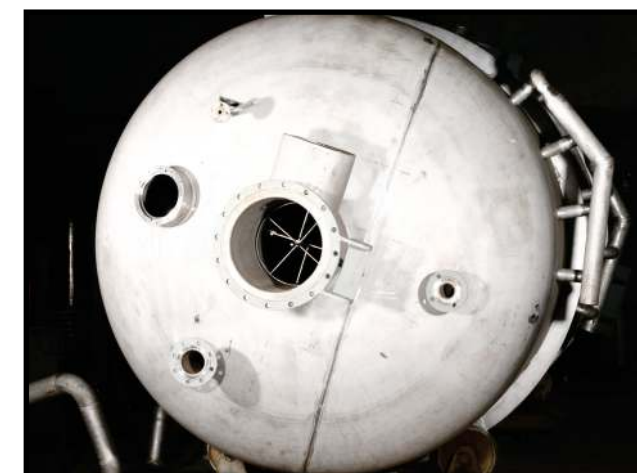
NEUTRALIZATION PROCEDURE AND WASTE-DISPOSAL

The contaminated rinsed water resulting from the pickling process will be acidic and contains heavy metal mainly iron, chromium and nickel which have been dissolved from the steel. Therefore the waste water must be subjected to a neutralization procedure. The use of a neutralizing facility is recommended in accordance to the waste limit and regulation of the country the waste must be disposed off as per the local guidelines.

Note: Mandatory Requirement

Calcium gluconate gel should be readily available in case of spillage of K-2 chemicals on human body.

BELOW ARE STAINLESS STEEL EQUIPMENTS PICKLED AND PASSIVATED WITH K-2 CHEMICALS



Kindly ask for method statement

We under take job work and training for K-2 pickling and passivation chemicals on stainless steel at site.

OUR PRESENCE



INDIA
SAUDI ARABIA
UAE
KUWAIT
BAHRAIN
OMAN
KENYA

SRI LANKA
INDONESIA
SINGAPORE
TAIWAN
MAURITIUS
AFRICA

Customer Satisfaction Certification For K-2 Chemical

National

International
