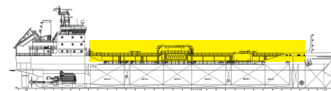


STAINLESS STEEL PASSIVATION PRODUCTS



Page
01 of 02

PASSIVATION IS REQUIRED TO RESTORE THE CHROMIUM OXIDE FILM AND THE ORIGINAL STAINLESS STEEL PROPERTIES

PHYSICAL DATA

PASSIVATING LIQUID

Appearance: yellow liquid
pH (1% solution): 2.0
Density: 1

PASSIVATING PASTE

Appearance: whitish paste
pH (1% solution): 1.8
Density: 1.07

PASSIVATING LIQUID

Applicable by brush, spray or immersion bath. Contact time: 2 hours. If sprayed, contact time 4 hours, followed by rinsing with deionized and chloride-free water. To be applied pure on stainless steel surfaces, in 50% fresh water dilution on aluminium and other similar metals.

PASSIVATING PASTE

Applied pure on small surfaces where straining is to be avoided. Passivation time: approx. 20 minutes.

PACKAGING

- PASSIVATING LIQUID: 25 ltr containers
- PASSIVATING PASTE: 10 Kg containers

PALLADIUM PASSIVATION TEST FOR STAINLESS STEEL (with palladium chloride reagent)

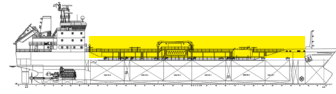
The measure of passivation of stainless steel can be determined with palladium chloride reagent. This reagent keeps colour on good passivated stainless steel. A black spot will arise when the surface has not been passivated correctly. Various qualities of passivation will give gradation of grey shades, rising from light (acceptable) to dark (unacceptable)

PROCEDURE

1. Put some drops of the reagent (palladium-chloride) on the surface.
2. Let the reagent act during 3 minutes.
3. Rinse the surface for shades.
4. Inspect the surface for shades:
 - If a black spot appears, there have to be passivated again
 - If a grey spot appears, the metal is partially passivated
 - If a white or clear spot appears, the metal has to be considered passivated

NOTE: The palladium chloride reagent is corrosive for stainless steel, therefore it is very important to rinse carefully.

STAINLESS STEEL PASSIVATION PRODUCTS

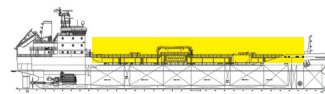


Page
02 of 02

IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE, THIS INFORMATION IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, WE RECOMMEND THAT YOU DO A TEST TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER, YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION FURNISHED BY URRUTY GG NIEGO SRL HEREUNDER ARE GIVEN GRATIS, AND URRUTY GG NIEGO SRL ASSUMES NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK.

this space intentionally left blank

STAINLESS STEEL PASSIVATING PRODUCTS



Rev.
011

Safety Data Sheet

1. Identification of the substance / preparation and the Company

1.1 Identification of the substance or preparation

Product name PASSIVATING LIQUID
Chemical name and synonym passivating liquid

1.2 Use of the substance / preparation

Intended use PASSIVATING LIQUID

1.3 Company identification

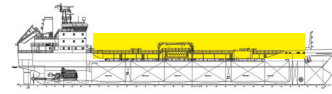
Name Urruty gg Niego S.r.l.
Full address Via al Santuario di N.S. Guardia 58 a
District and Country 16162 Genova Bolzaneto (GE)
 Italia
 Tel. + 39 010 711395
 Fax + 39 010 713120

e-mail address of the competent
person responsible for the info@uniservicemarine.com
Safety Data Sheet

1.4 Emergency telephone

For urgent inquiries refer to First Aid Information: Centro Antiveleni
 Milano - Niguarda
 Phone: 02 - 66101029 (specialized in
 chemical products poisoning).

STAINLESS STEEL PASSIVATING PRODUCTS



Rev.
011

2. Hazards Identification

2.1 Substance/Preparation Classification

This product is dangerous under 67/548/EEC and 1999/45/EC directives and subsequent amendments. Therefore, this product requires a safety data sheet according to the Regulation (EC) 1907/2006 and subsequent amendments. Further information on health and/or environmental hazards can be found in sections 11 and 12 of this sheet.

Danger Symbols: C
R phrases: 35

2.2 Danger Identification

CAUSES SEVERE BURNS.

3. Composition / Information on ingredients

Contains:

Name	Concentration % (C)	Classification
NITRIC ACID	96 <= C < 100	O R 8
CAS No 7697-37-2		C R35
CE No 231-714-2		Note B
Index No 007-004-00-1		

The complete text of -R- phrases is specified in section 16.

4. First aid measures

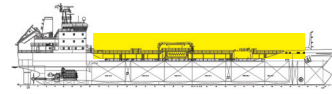
EYES: Irrigate copiously with clean, fresh water for at least 15 minutes. Seek medical advice.

SKIN: Immediately wash with plenty of water. Remove all contaminated clothing. Obtain immediate medical attention. Wash contaminated clothing separately before using them again.

INHALATION: Remove to open air. If breathing is irregular or stopped, administer artificial respiration. Obtain immediate medical attention.

INGESTION: Obtain immediate medical attention. Induce vomiting only if indicated by the doctor. Give nothing by mouth to an unconscious person.

STAINLESS STEEL PASSIVATING PRODUCTS



Rev.
011

5. Fire-fighting measures

In the event of a fire, cool containers immediately to prevent hazard of explosions and the generation of gas hazardous to health and safety. Always wear full fireproof gear.

GENERAL INFORMATION

In the case of fire, use jets of water to cool the containers to prevent the risk of explosions (product decomposition and excess pressure) and the development of substances potentially hazardous for health. Always wear full fire prevention gear.

SUITABLE EXTINGUISHING MEDIA

Use extinction equipment containing carbon dioxide, foam and chemical powders. For product leaks and spills that do not catch fire, nebulised water can be used to dispel flammable fumes and protect the individuals taking part in stemming the leak.

EXTINGUISHING MEDIA WHICH SHALL NOT BE USED FOR SAFETY REASONS

Do not use water.

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Do not breathe combustion products (carbon oxide, toxic pyrolysis products, etc).

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Hardhat with visor, fireproof clothing (fireproof jacket and trousers with straps around arms, legs and waist) work gloves (fireproof, cut proof and dielectric), self-respirator (self-protector).

6. Accidental release measures

PERSONAL PRECAUTIONS

Wear appropriate protective equipment. Send away individuals who are not suitably equipped. Use breathing equipment if fumes or powders are released into the air. Block the leakage if there is no hazard. Do not handle damaged containers or the leaked product before donning appropriate protective gear. For information on risks for the environmental and health, respiratory tract protection, ventilation and personal protection equipment, refer to the other sections of this sheet.

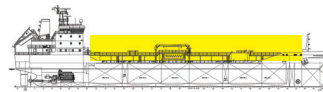
ENVIRONMENTAL PRECAUTIONS

The product must not penetrate the sewers, surface water, ground water and neighbouring areas. Dilute the product well with water after collection.

METHODS FOR CLEANING UP

Suck the liquid into a suitable container (made of material not incompatible with the product) and soak up any leaked product with absorbent inert material (sand, vermiculite, diatomaceous earth, Kieselguhr, tripoli powder, universal cement, etc). Neutralise remaining material. Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

STAINLESS STEEL PASSIVATING PRODUCTS



Rev.
011

7. Handling and storage

Store only in the original container. Follow the instructions of the supplier. Store in a ventilated and dry place, far away from sources of ignition. Ensure that there is an adequate earthing system for the equipment and personnel.

8. Exposure control / personal protection.

8.1 Exposure limit values

Name	Type	Country	TWA/8h		STEL/15min	
			mg/m3	ppm	mg/m3	ppm
NITRIC ACID	TLV-ACGIH		5,2		10	
	OEL	EU			2,6	1
	OEL	IRL		2		4
	WEL	UK		2		4

8.2 Exposure controls

As the use of adequate technical equipment must always take priority over personal protection equipment, make sure that the workplace is well aired through effective local aspiration or bad air vent. If such operations do not make it possible to keep the concentration of the product below the permitted workplace exposure thresholds a suitable respiratory tract protection must be used. See product label for hazard details during use. Ask your chemical substance suppliers for advice when choosing personal protection equipment. Personal protection equipment must comply with the rules in force indicated below.

HAND PROTECTION

Protect hands with category III (ref. Directive 89/686/EEC and standard EN 374) work gloves, such as those in PVA, butyl, fluoroelastomer or equivalent. The following should be considered when choosing work glove material: degradation, breakage times and permeation. Work glove resistance to preparations should be checked before use, as it can be unpredictable. Gloves' limit depends on the duration of exposure.

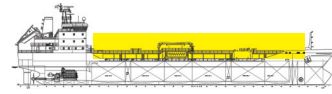
EYE PROTECTION

Wear hood visor or protective visor together with airtight goggles (ref. standard EN 166)

SKIN PROTECTION

Wear category III professional long-sleeved overalls and safety footwear (ref. Directive 89/686/CEE and standard EN 344). Wash body with soap and water after removing overalls.

STAINLESS STEEL PASSIVATING PRODUCTS



Rev.
011

RESPIRATORY PROTECTION

If the threshold value for one or more of the substances present in the preparation for daily exposure in the workplace or to a fraction established by the company's prevention and protection service is exceeded, wear a mask with an E or universal filter, the class (1, 2 or 3) of which must be chosen according to the limit concentration of use (ref. standard EN 141).

The use of breathing protection equipment, such as masks with organic vapour and dust/mist cartridges, is necessary in the absence of technical measures limiting worker exposure. The protection provided by masks is in any case limited.

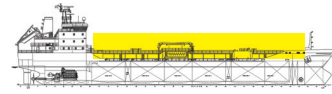
If the substance in question is odourless or its olfactory threshold is higher than the relative exposure limit and in the event of an emergency, or when exposure levels are unknown or the concentration of oxygen in the workplace is less than 17% volume, wear self-contained, open-circuit compressed air breathing apparatus (ref. standard EN 137) or fresh air hose breathing apparatus for use with full face mask, half mask or mouthpiece (ref. standard EN 138).

An emergency eye washing and shower system must be provided.

9. Physical and chemical properties

Colour	Not available
Odour	pungent
Appearance	liquid
Solubility	soluble
Vapour density	Not available
Evaporation speed	Not available
Comburent properties	Not available
Partition coefficient: n-octanol/water	Not available
pH	1
Boiling point	>1205°C
Melting point	-354°C
Flash point	Not available
Explosive properties	Not available
Vapour pressure	38mmHg
Specific gravity	1,405Kg/l

STAINLESS STEEL PASSIVATING PRODUCTS



Rev.
011

10. Stability and reactivity

The product can decompose and/or violently react.

Nitric acid is a corrosive and oxidizing agent. With organic compounds, it may form explosive products; it attacks all metals, excluding the noble ones; in the light and when heated, it decomposes producing toxic vapours of nitrous oxides. Suitable materials are: stainless steel, aluminium, titanium, teflon.

11. Toxicological information

This product is corrosive and causes serious burns and vesicles on the skin, which can arise even after exposure. Burns are very stinging and painful. Upon contact with eyes, it may cause serious harm, such as cornea opacity, iris lesions, irreversible eye coloration. Possible vapours are caustic for the respiratory system and may cause pulmonary edema, whose symptoms sometimes arise only after some hours. Exposure symptoms may include: sting, cough, asthma, laryngitis, respiratory disorders, headache, nausea and sickness. If swallowed, it may cause mouth, throat and oesophagus burns, sickness, diarrhoea, edema, larynx swelling and, consequently, asphyxia. Perforation of the gastrointestinal tract is also possible.

NITRIC ACID: inhalation LC50 (rat) 67 ppm/4h.

12. Ecological information

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or sewers or contaminate soil or vegetation.

13. Disposal consideration

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

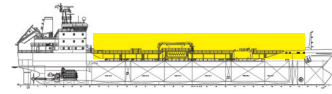
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

Waste transportation may be subject to ADR restrictions.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

STAINLESS STEEL PASSIVATING PRODUCTS



Rev.
011

14. Transport information

These goods must be transported by vehicles authorized to the carriage of dangerous goods according to the provisions set out in the current edition of the Code of International Carriage of Dangerous Goods by Road (ADR) and in all the applicable national regulations.

These goods must be packed in their original packagings or in packagings made of materials resistant to their content and not reacting dangerously with it. People loading and unloading dangerous goods must be trained on all the risks deriving from these substances and on all actions that must be taken in case of emergency situations.

Road and rail transport:

ADR/RID Class:	8
UN:	2031
Packing Group:	II
Nr. Kemler:	80

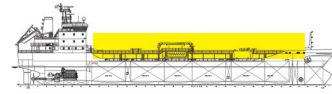
Carriage by sea (shipping):

UN:	2031
Packing Group:	II
Marine Pollutant	NO

Transport by air:

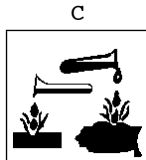
IATA:	8
UN:	2031
Packing Group:	II

STAINLESS STEEL PASSIVATING PRODUCTS



Rev.
011

15. Regulatory information



CORROSIVE

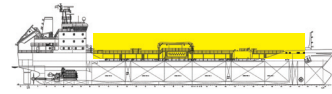
- R35 CAUSES SEVERE BURNS.
- S23 DO NOT BREATHE GAS/FUMES/VAPOUR/SPRAY (APPROPRIATE WORDING TO BE SPECIFIED BY THE MANUFACTURER).
- S26 IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
- S36/37/39 WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.
- S45 IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).

Contains:
NITRIC ACID

Danger labelling under directives 67/548/EEC and 1999/45/EC and following amendments and adjustments.

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

STAINLESS STEEL PASSIVATING PRODUCTS



Rev.
011

16. Other information

Text of (R) phrases quoted in section 3 of the sheet.

R 8 CONTACT WITH COMBUSTIBLE MATERIAL MAY CAUSE FIRE.
R35 CAUSES SEVERE BURNS.

GENERAL BIBLIOGRAPHY

1. Directive 1999/45/EC and following amendments;
2. Directive 67/548/EEC and following amendments and adjustments (technical adjustment XXIX);
3. Regulation (EC) 1272/2008 (CLP) of the European Parliament;
4. Regulation (EC) 1907/2006 (REACH) of the European Parliament;
5. The Merck Index. - 10th Edition;
6. Handling Chemical Safety;
7. Niosh - Registry of Toxic Effects of Chemical Substances;
8. INRS - Fiche Toxicologique (toxicological sheet);
9. Patty - Industrial Hygiene and Toxicology;
10. N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition;

Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product .

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Changes to previous review

The following sections were modified:

01 / 08 / 09 / 13 / 14