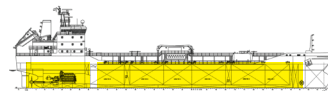


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## HEAVY DUTY ALKALINE CLEANING OF TANKS AND BOILER FIRE SIDES WATER BASED



**IMO APPROVED**  
MEPC.2/CIRC.13 Annex 10

### PHYSICAL DATA

Appearance: Clear light amber liquid  
Apparent Specific Gravity: 1.34 at 20°C  
Flash Point: None  
pH Value (10%): 13 at 25°C  
Corrosive action: Avoid contact with aluminium, tin, zinc or their alloys

### DESCRIPTION

Strong alkaline liquid degreasing agent for removal of vegetable, fish and animal oils and fats from epoxy/polyurethane coated or stainless steel tanks by injection or circulation method. Thorough saponification and emulsification provides economic removal of vegetable and animal oils. Can be used on most common metals except aluminium, tin, zinc and galvanised metals. Safe to use on epoxy and polyurethane coatings but it is not suitable for use on zinc silicate coatings, most paints and lacquers. Deodorises certain residues.

### APPLICATIONS

#### Steam Boilers

Prior to acid cleaning of steam boilers which are also contaminated with oil and grease or when silicates/calcium sulphates are present it is advantageous to first perform a boil out operation with ALKACLEAN.

#### Tanks

Suitable for removal of fatty acids, fish oils and other drying or semidrying oil deposits present as residues in storage and cargo tanks. It is very effective on dried oil films. When cleaning from "black oils" to "white oils" and from "black oils" to "grain cargo" it is a useful final treatment.

### DIRECTIONS FOR USE -PRODUCT DOSE

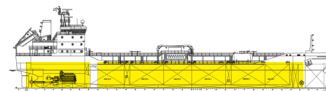
#### Cleaning of Steam Boilers

Fill the boiler with a 5-10% solution of ALKACLEAN in water. Depending on the degree of contamination allow this solution to circulate for 12 to 24 hours at a temperature of 100°C. After this boil out operation completely drain away the warm cleaning liquid and rinse the boiler thoroughly with cold water.

#### Tank Recirculation method

ALKACLEAN is added to a mixing tank containing a water quantity of 1% of the capacity of the tanks to be cleaned. The solution is heated by using the heating coils in the tanks. The tanks are washed by using a cargo pump after which the solution is recycled to the mixing tank. Usually one solution can be used to wash 2-3 tanks. ALKACLEAN is circulated as a 5-10% solution at 80-90°C for a period of 2-6 hours. After circulation rinse thoroughly with water.

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## Direct Injection method

Inject 1-2 litres of ALKACLEAN per 100 litres of wash water directly into the tank washing system. The recommended cleaning temperature is 80°C. When completed rinse thoroughly with water.

## Closing remarks regarding cleaning

In many cases an after treatment with UNIservice RUST REMOVER solution is recommended for the removal of white lime deposits originating from sea water and/or residues from the cargo. Inject 0.5 litre UNIservice RUST REMOVER per 100 litres of wash water directly into the tank washing system for approx. 20 minutes. The recommended temperature is 75-85°C. Finally rinse the tanks thoroughly with cold fresh water.

## Boiler Firesides Cleaning

Use a 10% to 20% solution of ALKACLEAN with fresh water. For deposits which are very hard to remove a concentrated solution of up to 50% can be used.

## Boiler/Heat Exchangers Water Side Cleaning

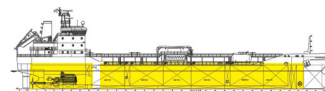
Generally the amount required is 4% of the unit capacity depending on conditions, the above dosage may be increase to 5-10%.

### For cleaning oil contamination from boilers, condensers and other heat exchangers (water side)

1. Blank off unit to be certain it is isolated.
2. Drain unit of all water.
3. Connect steam hose, preferably to bottom of unit.
4. Connect small recirculating pump, if available. If not, use steam for agitation, vent unit at highest possible point to prevent pressure build-up and allow escape of fumes.
5. Pour into the unit 4% of ALKACLEAN of the total capacity and certain that all drains are closed so that chemical is not lost.
6. Add fresh water to the top of tube bundle lever or minimum water level boilers.
7. Heat to at least 60°C (140 °F) and recirculate for a minimum of 12-24 hours after temperature is attained.
8. After heating and recirculation or agitation, dump the solution from the unit.
9. On boilers, flush each tube with fresh water in order to remove oil residues.

**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.

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## Safety Data Sheet

### 1. Identification of the substance / preparation and the Company

#### 1.1 Identification of the substance or preparation

Product name ALKACLEAN

#### 1.2 Use of the substance / preparation

Intended use Heavy duty alkaline cleaning

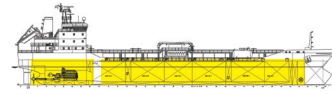
#### 1.3 Company identification

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 Safety Data Sheet info@uniservicemarine.com

#### 1.4 Emergency telephone

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

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## 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: 22-35

### 2.2 Danger Identification

HARMFUL IF SWALLOWED.  
CAUSES SEVERE BURNS.

---

## 3. Composition / Information on ingredients

Contains:

Name	Concentration % (C)	Classification
POTASSIUM HYDROXIDE	58 <= C < 62	C R35
CAS No 1310-58-3		Xn R22
CE No 215-181-3		
Index No 019-002-00-8		

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.

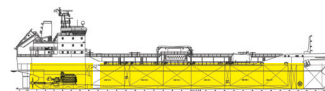
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## 5. Fire-fighting measures

### GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from

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draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

#### SUITABLE EXTINGUISHING MEDIA

The extinction equipment should be of the conventional kind: carbon dioxide, foam, powder and nebulised water.

#### EXTINGUISHING MEDIA WHICH SHALL NOT BE USED FOR SAFETY REASONS

None in particular.

#### 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), a depressurised mask with facemask covering the whole of the operator's face or a self-respirator (self-protector) in the event of large quantities of fume.

---

## 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

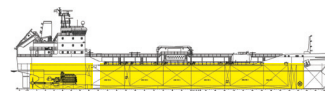
Suck the liquid into a suitable container (made of material not incompatible with the product) and soak up any leaked product with absorbent inert material (sand, vermiculite, diatomaceous earth, Kieselguhr, tripoli powder, universal cement, etc). Neutralise remaining material. Make sure the leakage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

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## 7. Handling and storage

Make sure that equipment is available for cooling the vessels, to prevent the danger of overpressure and overheating in the event of fire in the vicinity. Refer to the other sections of this data sheet for information relating to health and environmental risks.

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## 8. Exposure control / personal protection.

### 8.1 Exposure limit values

Name	Type	Country	TWA/8h		STEL/15min	
			mg/m3	ppm	mg/m3	ppm
POTASSIUM HYDROXIDE						
	TLV-ACGIH				2 (C)	
	OEL	IRL			2	
	WEL	UK			2	

C = CEILING

### 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

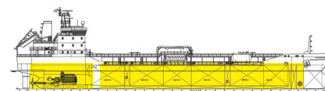
Wear category III professional long-sleeved overalls and safety footwear (ref. Directive 89/686/CEE and standard EN 344). Wash body with soap and water after removing overalls.

#### 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.

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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.

In the presence of risks of exposure to splashes or squirts during work, adequate mouth, nose and eye protection should be used to prevent accidental absorption.

## 9. Physical and chemical properties

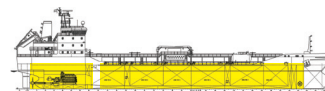
Colour	Not available
Appearance	liquid
Solubility	soluble
Specific gravity	1,06 Kg/l
Vapour density	Not available
Evaporation speed	Not available
Comburent properties	Not available
Partition coefficient: n-octanol/water	Not available
pH	12,50
Boiling point	105°C
Melting point	-5°C
Flash point	98°C
Lower explosive limit	2% (v/v)
Upper explosive limit	9% (v/v)
Vapour pressure	1950kPa
Specific gravity	1,060Kg/l

## 10. Stability and reactivity

The product is stable in normal conditions of use and storage. Due to thermal decomposition or in the event of a fire vapours may be produced potentially dangerous to health.

Potassium hydroxide: in preparing the solutions always add the substance to the water and not vice versus in order to avoid the formation of corrosive sprays due to a rise in temperature. It attacks aluminium, tin, lead and zinc; it reacts violently with acids.

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## 11. Toxicological information

Acute effects: ingestion of this product is harmful. Even small amounts of product may cause serious health problems (stomach pain, nausea, sickness, diarrhoea). This product may slightly irritate mucosae, the upper respiratory tract, eyes, and skin. Exposure symptoms may include: sting, cough, asthma, laryngitis, respiratory disorders, headache, nausea and sickness.

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.

POTASSIUM HYDROXIDE: oral LD50 (mg/kg) 270 (RAT).

## 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.

### CONTAMINATED PACKAGING

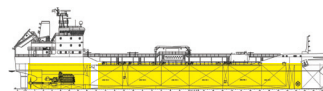
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

## 14. Transport information

These goods must be transported by vehicles authorised 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




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original packaging or in packaging 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: 1814  
Packing Group: II  
Label: 8   
Nr. Kemler: 80  
Limited Quantity LQ22  
Tunnel restriction code (E)  
Proper Shipping Name: Potassium hydroxide solution

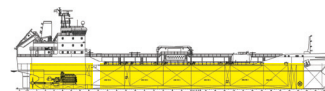
**Carriage by sea (shipping):**

IMO Class: 8  
UN: 1814  
Packing Group: II  
Label: 8   
EMS: F-A, S-B  
Marine Pollutant NO  
Proper Shipping Name: POTASSIUM HYDROXIDE SOLUTION

**Transport by air:**

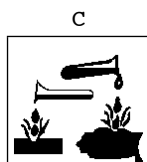
IATA: 8  
UN: 1814  
Packing Group: II  
Label: 8  
Cargo:  
Packaging instructions: 813   
Maximum quantity: 30 L  
Pass.:  
Packaging instructions: 809  
Maximum quantity: 1 L  
Special Instructions: A3  
Proper Shipping Name: POTASSIUM HYDROXIDE SOLUTION

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## 15. Regulatory information



CORROSIVE

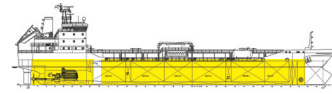
- R22 HARMFUL IF SWALLOWED.
- R35 CAUSES SEVERE BURNS.
- S26 IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
- S28 AFTER CONTACT WITH SKIN, WASH IMMEDIATELY WITH PLENTY OF . . . (TO BE SPECIFIED BY THE MANUFACTURER).
- S36/37/39 WEAR SUITABLE PROTECTIVE CLOTHING, 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:  
POTASSIUM HYDROXIDE

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.

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## 16. Other information

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

R22            HARMFUL IF SWALLOWED.  
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