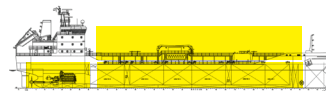


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POWERFUL SOLVENT BASED CLEANING AGENT FOR TANK CLEANING AT SEA



IMO APPROVED
MEPC.2/CIRC.13 Annex 10

PHYSICAL DATA

Appearance: Clear amber liquid
Apparent Specific Gravity: 0.90 at 20°C
Flash Point: More than 70° C (158° F)
Corrosive action:
Metals and Coatings: None
Rubber: Slight swelling

DESCRIPTION

Strong emulsifying cleaning agent for the removal of heavy crude oil, soot, asphalt and carbon black stains, by direct injection, sea-clean method, spraying and/or recirculation method. Based on aliphatic/aromatic hydrocarbons and non-ionic/anionic surface active agents. Washing times are reduced by 50% and only slight agitation is normally required. The product is safe to use on common metals.

APPLICATIONS

Tanks

UNIservice SEACLEAN can be used for the removal of most mineral oils and fats in cargo and storage tanks.

Double Bottom Tanks

SEACLEAN can be used for cleaning and gas freeing of Double Bottom Tanks. Using the rolling motion of the ship will normally provide sufficient agitation.

DIRECTIONS FOR USE

Cleaning of Cargo and Storage Tanks:

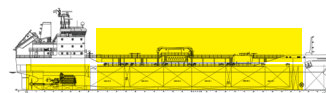
Pre-wash

Before cleaning with SEACLEAN, it is recommended to prewash tanks with hot water of approximately 50°C except for crude oil, drying and semi-drying oils where a prewash with cold water should be applied.

Direct Injection Method for Cargo Tanks

Undiluted SEACLEAN should be injected at a predetermined rate into the pressure side of the automatic tank cleaning system line on deck by means of an air-operated drum (barrel) pump. Usually an injection rate of 0.1 0.2 liter SEACLEAN per 100 liters of tank wash water is sufficient. Cleaning time 2-6 hours. Subsequently rinse with water.

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Hand Spraying Method

Spray undiluted SEACLEAN on to bulkhead, frames, stringers, longitudinals etc. using an air-operated drum pump connected with a delivery hose and hand spray gun. After a predetermined reaction time, tanks should be rinsed with water using the automatic tank washing machines. For spot cleaning only, use hand held hose for rinsing, for instance a firehose with nozzle. Hand Spraying Method is the most economical system in terms of chemical consumption but requires tanks being gasfree enabling men to enter tanks. However, Hand Spraying Method has a practical time limitation depending on tank sizes, i.e. total tank surface to be sprayed.

Recirculation Method

A chemical solution is prepared in one of the after tanks near the pump room, circulated via the automatic tank washing system pump and heater to the tank to be cleaned, wherefrom the solution is returned to the chemical solution tank via the stripping line. Usually it is not possible to recirculate solution through the tank washing system heater (to maintain solution temperature) without making a temporary connection between the chemical solution tank and the tank washing pump. Capacities of solution tank, pipelines and pumps etc. should be calculated carefully to ensure sufficient volumetric quantity for a continuous recirculation. Depending on size and condition of tanks to be cleaned and quantity of chemical solution, a drawback in this method is that usually only 3 (three) tanks can be cleaned with one solution after which a fresh solution should be made and heated before cleaning can continue. The required solution strength is 2-6% SEACLEAN. After chemical cleaning the tanks should be rinsed thoroughly with sea water or fresh water depending on availability and requirements.

At Sea Cleaning Method: (Double Bottom Tanks)

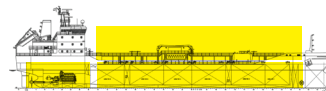
Time, temperature and agitation of chemical solution are important factors for the successful cleaning of Double Bottom Tanks.

Procedure:

1. Heat tank to higher than normal temperature, pump out as much fuel as possible and trim vessel to ensure complete stripping.
2. Close all valves on engine room manifold.
3. Introduce first dose of SEACLEAN, through the sounding pipe, in accordance with the dosage table stated below and fill the tank to 25% of its capacity with sea water. For filling the tanks it is advised not to use the ballast lines as they may contain fuel oil making the cleaning more difficult.
4. Heat cleaning solution to minimum 60°C and maintain temperature for 48 hours. If heating coils are not available, live steam may be used for heating the solution and maintain temperature.
5. Empty tanks completely, fill to 50% capacity and empty again. Where single stage cleaning is used the previous steps are ignored.
6. Add second dose of SEACLEAN and fill tank with sea water to 50% of its capacity, continue heating and maintain at this level for 48 hours.
7. Add further sea water to fill tank to 75% capacity, continue heating and maintain for another 48 hours.
8. Empty tanks and pressure rinse with clean water through sounding pipes for 1-1 hour under continuous stripping. Pressure should be kept as high as safety permits.
9. When rinsing is completed stop discharge (stripping) pump and fill tank until clear water runs from sounding pipes on deck.
10. Stop water supply and empty (strip) tank. Trim vessel to ensure complete stripping.

Note: If tanks are not severely contaminated and/or the fuel oil viscosity is lower than 180 cSt at 50°C the cleaning process should be in one stage using step 5-10 only.

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PROPERTIES

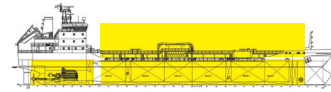
Highly concentrated blend of aromatic solvents, emulsifiers and surface active ingredients. Emulsifiable with water to a maximum of 50%. Undiluted at room temperature or in emulsions with water up to 6% at a maximum temperature of 60°C it can also be used on plastic materials, epoxy and zinc silicate coatings.

DOSAGE TABLE FOR SEACLEAN

Tank Capacity	Proportioning of SEACLEAN in liters			Tank Capacity	Proportioning of SEACLEAN in liters		
in ton	minimum	normal	maximum	in ton	minimum	normal	maximum
2.5	2	4	6	100	80	160	240
5	4	8	12	200	160	320	480
10	8	16	24	250	200	400	600
15	12	24	36	300	240	480	720
20	16	32	48	400	320	640	960
25	20	40	60	500	400	800	1200
30	24	48	72	600	480	960	1440
40	32	64	96	700	560	1120	1680
50	40	80	120	800	640	1280	1920
75	60	120	180	900	720	1440	2160
				1000	800	1600	2400

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 SEACLEAN

1.2 Use of the substance / preparation

Intended use Medium heavy duty solvent based cleaner for mineral oil & grease

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: Xn
R phrases: 65-66

2.2 Danger Identification

HARMFUL: MAY CAUSE LUNG DAMAGE IF SWALLOWED.
REPEATED EXPOSURE MAY CAUSE SKIN DRYNESS OR CRACKING.

3. Composition / Information on ingredients

Contains:

Name	Concentration % (C)	Classification
MARLIPAL 31-9	2,5 <= C < 3	Xn R22
CAS No 68439-54-3		Xi R41
KEROSINE (PETROLEUM), STRAIGHT RUN KEROSINE	82 <= C < 86	R66
CAS No 8008-20-6		Xn R65
CE No 232-366-4		Note H 4
Index No 649-404-00-4		

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

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4. First aid measures

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

SKIN: Wash immediately with plenty of water. Remove contaminated clothing. If irritation persists, seek medical attention. Wash contaminated clothing before using them again.

INHALATION: Remove to open air. If breathing is irregular, seek medical advice.

INGESTION: Obtain immediate medical attention. Induce vomiting only if indicated by the doctor. Never give anything by mouth to an unconscious person.

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 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

Eliminate sources of ignition (cigarettes, flames, sparks, etc.) from the air in which the leak occurred. If there are no contraindications, spray solid products with water to prevent the formation of dust. 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 leaked product before donning appropriate protective gear. Send away individuals who are not suitably equipped. 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

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The product must not penetrate the sewers, surface water, ground water and neighbouring areas.

METHODS FOR CLEANING UP

For liquid products, suck into a suitable container (made of material not incompatible with the product) and soak up any leaked product with absorbent inert material (sand, vermiculite, diatomeous earth, Kieselguhr, etc). Collect the majority of the remaining material and deposit in containers for disposal. For solid products, use spark proof mechanical tools to collect the leaked product and place in plastic containers. If there are no contraindications, use jets of water to eliminate product residues. Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

7. Handling and storage

Store in a well ventilated place, keeping the containers closed when not used. Do not smoke while handling. Keep far away from sources of heat, bright flames and sparks and other sources of ignition.

8. Exposure control / personal protection.

8.1 Exposure limit values

Name	Type	Country	TWA/8h		STEL/15min		
			mg/m3	ppm	mg/m3	ppm	
Kerosine (Petroleum), Straight Run Kerosine							
	TLV-ACGIH		200				Skin
	OEL	IRL	100				Skin

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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 II (ref. Directive 89/686/EEC and standard EN 374) work gloves, such as those in PVC, neoprene, nitril 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 protective airtight goggles (ref. standard EN 166).

SKIN PROTECTION

Wear category II 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 B 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.

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.

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9. Physical and chemical properties

Colour	Not available
Odour	technical
Appearance	liquid
Solubility	emulsifying
Vapour density	Not available
Evaporation speed	Not available
Comburent properties	Not available
Partition coefficient: n-octanol/water	Not available
pH	Not available
Boiling point	190°C
Melting point	-30°C
Flash point	>75°C
Lower explosive limit	0,5% (v/v)
Upper explosive limit	8% (v/v)
Ignition temperature	225°C
Vapour pressure	0,04kPa
Specific gravity	0,790Kg/l

10. Stability and reactivity

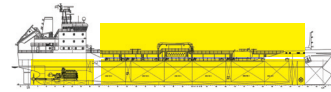
The product is stable in normal conditions of use and storage. When heated or in the event of a fire, carbon oxides may be released and vapours which are dangerous to health. The vapours may also form explosive mixtures with the air.

11. Toxicological information

The introduction of even small quantities of this liquid into the respiratory system in case of ingestion or vomit may cause bronchopneumonia and pulmonary edema.

This product may have a degreasing action on the skin, producing dryness and chapped skin after repeated exposure.

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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.

Petroleum distillates, charcoal, vegetable extracts: they are mixtures of paraffinic, naphthenic, diterpenic and aromatic hydrocarbons. Their behaviour on the environment depends on the concentration. In each case use, according to good working practices, avoiding disposal in the environment. As a rule, the product is poorly biodegradable.

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

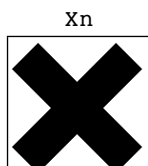
This product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

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15. Regulatory information



HARMFUL

- R65 HARMFUL: MAY CAUSE LUNG DAMAGE IF SWALLOWED.
- R66 REPEATED EXPOSURE MAY CAUSE SKIN DRYNESS OR CRACKING.
- S62 IF SWALLOWED, DO NOT INDUCE VOMITING: SEEK MEDICAL ADVICE IMMEDIATELY AND SHOW THIS CONTAINER OR LABEL.

Contains:

KEROSINE (PETROLEUM), STRAIGHT RUN KEROSINE

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

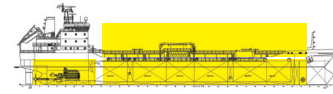
Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

16. Other information

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

- R22 HARMFUL IF SWALLOWED.
- R41 RISK OF SERIOUS DAMAGE TO EYES.
- R65 HARMFUL: MAY CAUSE LUNG DAMAGE IF SWALLOWED.
- R66 REPEATED EXPOSURE MAY CAUSE SKIN DRYNESS OR CRACKING.

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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:

08