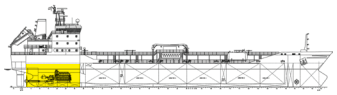
OSMO / CLEAN 1/3/5



REVERSE OSMOSIS CLEANING PRODUCTS

PHYSICAL DATA

OSMO/CLEAN 1 (acid)
OSMO/CLEAN 3 (alkaline)
OSMO/CLEAN 5 (preserver)

REVERSE OSMOSIS DRINKING WATER SYSTEMS CLEANING RECOMMENDATIONS:

When properly employed, REVERSE OSMOSIS DRINKING WATER SYSTEMS need no frequent cleaning. However, the use of a membrane with 2 to 12 pH, high temperature resistance and easy to clean when necessary is recommended.

DIRECTION FOR USE

Membranes need cleaning in the following cases:

1. Pressure loss at each stage is greater than 15%
2. Permeate flow is less than 10% of nominal flow. Obviously enough, in this case, flow variations due to water temperature and salinity are to be taken into account.

MEMBRANES CLEANING TIME
For all products: Cleaning time = 30-60 min. Max. temperature = 35°C Pressure: 3.5 kg/cm^2

OSMO CLEAN 1 (pH = 2) - Liquid Product

Acid detergent particularly useful to remove salt precipitates and scaling due to calcium carbonate, calcium sulphate, barium etc. Dilute OSMO CLEAN 1 at 2% in water. Then, clean the membranes according to the instructions of the water treatment unit manufacturer.

OSMO CLEAN 3 (pH = 11-12) - Liquid Product

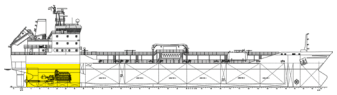
Concentrated detergent specially designed for perfect cleaning of reverse osmosis water purifiers. Employed to remove metal oxides, biofilms and organic substances also from water polluted by sewage, discharge water etc. Dilute OSMO CLEAN 3 at 2% in water. Then, clean the membranes according to the instructions of the water treatment unit manufacturer.

OSMO CLEAN 5 preserver - Liquid Product

Dilute OSMO CLEAN 5 at 2% in water. Then, clean the membranes according to the instructions of the water treatment unit manufacturer.

Urruty gg Niego srl
agent of **UNIservice** sa
Via S.N.S. della Guardia 58a
Genoa 16162 Italy
T +39 010.711.395
F +39 010.713.120
www.uniservicemarine.com
info@uniservicemarine.com

OSMO / CLEAN 1/3/5



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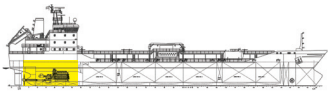
OSMO / CLEAN 1



Rev. 014

Safety Data Sheet

1. Identification of the substance / preparation and the Company

1.1 Identification of the substance or preparation

Product name	OSMOCLEAN 1

1.2 Use of the substance / preparation

Intended use	Cleaning Additive for R-O membranes

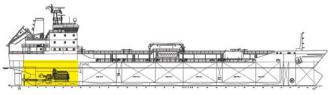
1.3 Company identification

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).

OSMO / CLEAN 1



Rev. 014

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: Xi

R phrases: 41

2.2 Danger Identification

RISK OF SERIOUS DAMAGE TO EYES.

---

3. Composition / Information on ingredients

Contains:

Name	Concentration % (C)	Classification
CITRIC ACID	16,5 <= C < 18	Xi R37/38
CAS No 77-92-9		Xi R41
CE No 201-069-1		

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: 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
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, diatomeous 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.

---

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.

---

8. Exposure control / personal protection.

8.1 Exposure limit values
Not available

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.

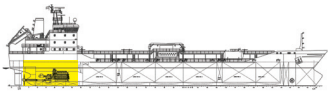
HAND PROTECTION
Protect hands with category I (ref. Directive 89/686/EEC and standard EN 374) work gloves, such as those in latex, PVC or equivalent. The following should be considered when choosing work glove material: degradation, breakage times and permeation. Work glove resistance to preparations 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 I 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).

OSMO / CLEAN 1



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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.

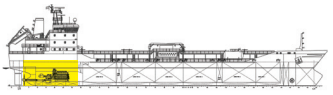
9. Physical and chemical properties

Colour	Not available
Odour	neutral
Appearance	liquid
Solubility	in water completely soluble
Specific gravity	1,20 kg/l
Vapour density	Not available
Evaporation speed	Not available
Comburent properties	Not available
Partition coefficient: n-octanol/water	Not available
pH	1,8
pH	Not available
Boiling point	115°C
Flash point	Not available
Explosive properties	Not available
Vapour pressure	Not available
Specific gravity	1,063

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.

OSMO / CLEAN 1



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014

11. Toxicological information

This product may cause serious ocular lesions, cornea opacity, iris lesions, irreversible eye coloration.

CITRIC ACID: oral LD50 (mg/kg) 3000 (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.

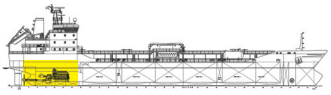
CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

---

14. Transport information

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.

OSMO / CLEAN 1



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014

15. Regulatory information

Xi

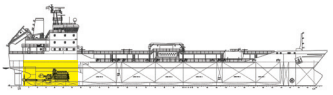
IRRITANT

R41	RISK OF SERIOUS DAMAGE TO EYES.
S25	AVOID CONTACT WITH EYES.
S26	IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
S39	WEAR EYE/FACE PROTECTION.

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.

OSMO / CLEAN 1



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014

16. Other information

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

R37/38 IRRITATING TO RESPIRATORY SYSTEM AND SKIN.
R41 RISK OF SERIOUS DAMAGE TO EYES.

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;

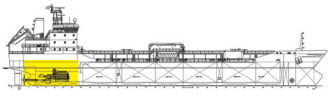
Note for users:

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

OSMO / CLEAN 3



Rev. 010

Safety Data Sheet

1. Identification of the substance / preparation and the Company

1.1 Identification of the substance or preparation

Product name	OSMOCLEAN 3

1.2 Use of the substance / preparation

Intended use	Alkaline additive cleaning for R-O membranes

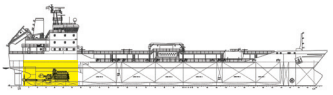
1.3 Company identification

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	Informazioni di primo soccorso/First Aid Information: Centro Antiveleni Milano - Niguarda Tel./Phone: 02 - 66101029 (specializzato in intossicazioni di prodotti chimici / specialized in chemical products poisoning).

OSMO / CLEAN 3



Rev. 010

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
SODIUM HYDROXIDE	3 <= C < 3,5	C R35
CAS No 1310-73-2		
CE No 215-185-5		
Index No 011-002-00-6		

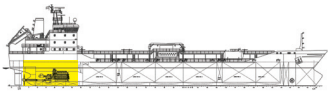
The complete text of -R- phrases is specified in section 16.

---

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.

OSMO / CLEAN 3



5. Fire-fighting measures

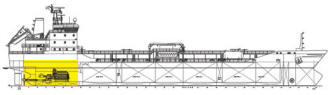
GENERAL INFORMATION
Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated 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
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, diatomeous 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.

OSMO / CLEAN 3



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.

---

8. Exposure control / personal protection.

8.1 Exposure limit values

Name	Type	Country	TWA/8h		STEL/15min	
			mg/m3	ppm	mg/m3	ppm
SODIUM 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.
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.

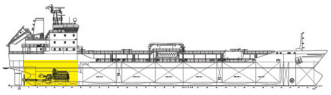
9. Physical and chemical properties

Colour	Not available
Odour	neutral
Appearance	liquid
Solubility	in water completely soluble
Vapour density	Not available
Evaporation speed	Not available
Comburent properties	Not available
Partition coefficient: n-octanol/water	Not available
pH	13
Boiling point	Not available
Flash point	Not available
Explosive properties	Not available
Vapour pressure	Not available
Specific gravity	1,150Kg/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.
Sodium hydroxide (caustic soda) attacks aluminium, tin, lead, zinc and reacts violently with acids. In order to obtain aqueous solutions always add soda to the water and not vice versus.

OSMO / CLEAN 3



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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 gastro-intestinal tract is also possible.

SODIUM HYDROXIDE: oral LD50 (mg/kg) 1350 (RAT) ; dermal LD50 (mg/kg) 1350 (RAT).

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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.

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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.

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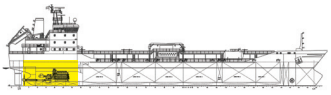
14. Transport information

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.

OSMO / CLEAN 3



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010

Road and rail transport:

ADR/RID Class:	8
UN:	1824
Packing Group:	II
Label:	8
Nr. Kemler:	80
Limited Quantity	LQ22
Tunnel restriction code	(E)
Proper Shipping Name:	Sodium hydroxide solution

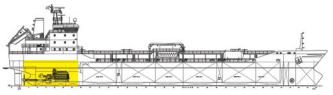
Carriage by sea (shipping):

IMO Class:	8
UN:	1824
Packing Group:	II
Label:	8
EMS:	F-A, S-B
Marine Pollutant	NO
Proper Shipping Name:	SODIUM HYDROXIDE SOLUTION

Transport by air:

IATA:	8
UN:	1824
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:	SODIUM HYDROXIDE SOLUTION

OSMO / CLEAN 3



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15. Regulatory information

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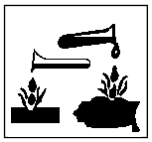


CORROSIVE

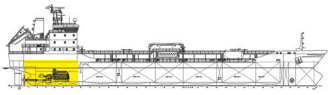
R35	CAUSES SEVERE BURNS.
S26	IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
S28	AFTER CONTACT WITH SKIN, WASH IMMEDIATELY WITH PLENTY OF . . . (TO BE SPECIFIED BY THE MANUFACTURER).
S36/37/39	WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.
S45	IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).

Contains:
SODIUM 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.

OSMO / CLEAN 3



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16. Other information

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

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:

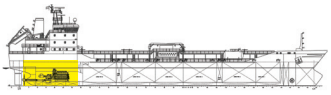
The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product .
This document must not be regarded as a guarantee on any specific product 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

OSMO / CLEAN 5

UNIservice MARINE PRODUCTS AND SERVICES



Rev. 010

Safety Data Sheet

1. Identification of the substance / preparation and the Company

1.1 Identification of the substance or preparation

Product name	OSMOCLEAN 5 Preserver

1.2 Use of the substance / preparation

Intended use	Preserving detergent for R-O system membrane cleaning

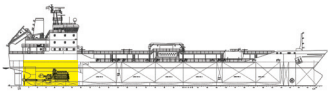
1.3 Company identification

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).

OSMO / CLEAN 5



Rev. 010

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.
R phrases:
31

2.2 Danger Identification
CONTACT WITH ACIDS LIBERATES TOXIC GAS.

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3. Composition / Information on ingredients

Contains:

Name	Concentration % (C)	Classification
Sodium hydrogen sulphite 1%	12 <= C < 13,5	R31
CAS No 7631-90-5		Xn R22
CE No 231-548-0		Note B
Index No 016-064-00-8		

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

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4. First aid measures

No episodes of damage to health ascribable to the product have been reported. Nevertheless, observance of good industrial hygiene is recommended.

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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 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.

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6. Accidental release measures

PERSONAL PRECAUTIONS
Use breathing equipment if fumes or powders are released into the air.
ENVIRONMENTAL PRECAUTIONS
The product must not penetrate the sewers, surface water, ground water and neighbouring areas.
METHODS FOR CLEANING UP
Confine using earth or inert material. Collect as much material as possible and eliminate the rest using jets of water. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

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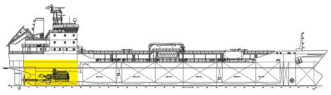
7. Handling and storage

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.

OSMO / CLEAN 5



8. Exposure control / personal protection.

8.1 Exposure limit values

Not available

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 I (ref. Directive 89/686/EEC and standard EN 374) work gloves, such as those in latex, PVC 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
Use of protective airtight goggles (ref. standard EN 166) recommended.

SKIN PROTECTION
Wear category I 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).

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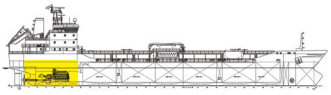

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All appropriate action must be taken to ensure that the above substance or preparation (blend, solution, dispersion, etc.) does not come into contact, even by accident, with acids, by adopting suitable technological and/or organisational measures.
If the above substance is intentionally made to react with acids, the need to provide adequate PPE should be considered in view of the characteristics of hazardousness of the reagents and reaction by-products.

9. Physical and chemical properties

Colour	Not available
Odour	acre
Appearance	liquid
Solubility	in water completely soluble
Vapour density	Not available
Evaporation speed	Not available
Comburent properties	Not available
Partition coefficient: n-octanol/water	Not available
pH	4,5
Boiling point	Not available
Flash point	Not available
Explosive properties	Not available
Vapour pressure	Not available
Specific gravity	1,050Kg/l

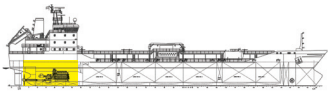
10. Stability and reactivity

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

11. Toxicological information

This product generates toxic harmful gases upon contact with acids.

OSMO / CLEAN 5



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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.

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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.

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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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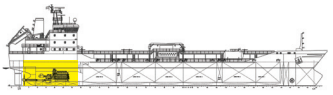
15. Regulatory information

R31 CONTACT WITH ACIDS LIBERATES TOXIC GAS.

Caution recommendations (S): None

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

OSMO / CLEAN 5



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010

16. Other information

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

R22 HARMFUL IF SWALLOWED.
R31 CONTACT WITH ACIDS LIBERATES TOXIC GAS.

GENERAL BIBLIOGRAPHY
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