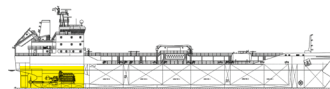


# OBWT-4



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## ORGANIC BOILER WATER TREATMENT

**ENVIRONMENTALLY SUPERIOR ORGANIC OXYGEN SCAVENGER AND CORROSION INHIBITOR FOR FEED, STEAM, AND CONDENSATE SYSTEMS**

APPROVED BY



### PHYSICAL DATA

OBWT-4 is a brown aqueous solution of neutralized organic acids and amines.  
Specific gravity (20° C): 1,05  
Flashpoint PM CC: none  
Ph (1% solution): 10,8

### ADVANTAGES

- Environmentally safe, non-toxic product
- Effective oxygen scavenger
- Highly specialized single product for control of corrosion throughout the condensate system
- Quick, simple and accurate testing
- An effective iron tannate film assures excellent boiler surface protection

### DESCRIPTION

UNIservice OBWT-4 is an environmentally superior oxygen scavenger based on neutralized organic acids and a blend of volatile/neutralizing amines. The function of the neutralized organic acids is to remove oxygen from the feed water and form an organic iron compound on the steel surfaces of the boiler. OBWT-4 also provides excellent protection on copper based metals.

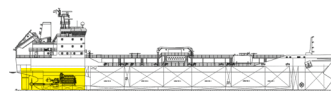
The specialized blend of amines has little or no effect on the boiler itself, but carry over with the steam in a gaseous form, condensing wherever steam has done work and reverts to water (condensate). This in turn elevates the condensate pH (9.0-10.5), neutralizing the carbonic acid and filming the system, protecting it from corrosion.

OBWT-4 filming properties also reduce corrosion on shut down lines, when moisture and oxygen are present.

### DIRECTION FOR USE

OBWT-4 is dosed at a rate which maintains a pH of 9.0-10.0 in the condensate returns. Oxygen entrainment largely depends on hot well temperatures and if these are maintained at above 80° C. the condensate pH range of pH 9.0-9.5 is adequate. If hot well temperature control is erratic and averages less than 80° C. tighter control is necessary and condensate returns should be kept in the range pH 9.5-10.0. It is not necessary to carry out oxygen or product residual tests.

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## INITIAL DOSAGE

**OBWT-4 is initially dosed at 0,2 ltr/m3 boiler water.** Systems showing signs of corrosion should be dosed at up to 0,7 ltr/m3 boiler water for the first few days in order to passivate all metal surfaces

## DAILY DOSAGE

After initial dose, start metering at a minimum of 0,4 ltr/24 hours continuously and adjust to obtain correct condensate pH.

## DOSING SYSTEM

It is recommended that OBWT-4 be dosed continuously in conjunction with OBWT-3 via a metering pump/tank unit, discharging directly into the feed system and/or the exhaust gas economizer circulating pump discharge.

It must NEVER be slug dosed to a running system via a hot well or by-pass feeder

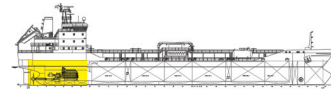
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**IMPORTANT:** WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE, THIS INFORMATION IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, 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 OBWT 4

#### 1.2 Use of the substance / preparation

Intended use Organic oxygen scavenger

#### 1.3 Company identification

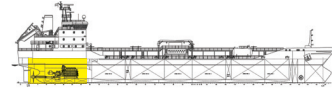
Name Urruty gg Niego S.r.l.  
Full address Via al Santuario di N.S. Guardia 58 a  
District and Country 16162 Genova Bolzaneto (GE)  
Italia  
Tel. + 39 010 711395  
Fax + 39 010 713120

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: 34

### 2.2 Danger Identification

CAUSES BURNS.

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## 3. Composition / Information on ingredients

Contains:

Name	Concentration % (C)	Classification
2-DIMETHYLAMINOETHANOL	15 <= C < 16,5	R10
CAS No 108-01-0		C R34
CE No 203-542-8		Xn R20/21/22
Index No 603-047-00-0		

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

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## 4. First aid measures

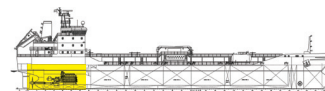
**EYES:** Irrigate copiously with clean, fresh water for at least 15 minutes. Seek medical advice.

**SKIN:** 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. Excess pressure may form in containers exposed to fire at a risk of explosion. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water and the remains of the fire according to applicable regulations.

### SUITABLE EXTINGUISHING MEDIA

The extinction equipment should contain carbon dioxide, foam or chemical powders. For product leaks and spills that have not caught 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 jets of water. Water is not effective for putting out fires but can be used to cool containers exposed to flames to prevent explosions.

### 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 ties around arms, legs and waist) work gloves (fireproof, cut proof and dielectric), self-respirator (self-protector).

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## 6. Accidental release measures

### PERSONAL PRECAUTIONS

Eliminate all sources of ignition (cigarettes, flames, sparks, etc.) from the leakage site. 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 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, see the other sections of this sheet.

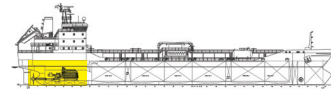
### ENVIRONMENTAL PRECAUTIONS

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

### METHODS FOR CLEANING UP

Use inert absorbent material (sand, vermiculite, diatomaceous earth, Kieselguhr, etc.) to soak up leaked product. Collect the majority of the remaining material and deposit it in containers for disposal. 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.

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## 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
2-DIMETHYLAMINOETHANOL						
	OEL	IRL		2		6
	WEL	UK		2		6

### 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 protective airtight goggles (ref. standard EN 166).

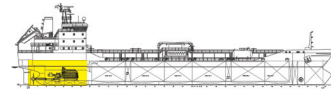
#### SKIN PROTECTION

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 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).

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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.

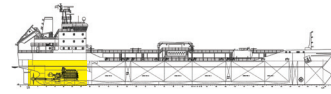
## 9. Physical and chemical properties

Colour	Not available
Odour	typical
Appearance	liquid
Solubility	soluble
Specific gravity	1,05 kg/l
Vapour density	Not available
Evaporation speed	Not available
Comburent properties	Not available
Partition coefficient: n-octanol/water	Not available
pH	10,8
Boiling point	105°C
Melting point	-5°C
Flash point	>100°C
Explosive properties	Not available
Vapour pressure	2200kPa
Specific gravity	1,050Kg/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.

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## 11. Toxicological information

This product is corrosive and causes abrasions of skin surface, accompanied by rubefaction, warmth and sting. In the most serious cases, small vesicles appear, which cause strong sting and pain. 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.

---

## 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.

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.

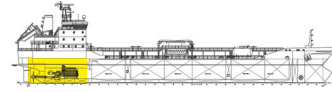
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## 14. Transport information

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.



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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: 2735  
Packing Group: II  
Label: 8  
Nr. Kemler: 80  
Proper Shipping Name: 2-Dimethylaminoethanol



## Carriage by sea (shipping):

IMO Class: 8  
UN: 2735  
Packing Group: II  
Label: 8  
EMS: F-A, S-B  
Marine Pollutant: NO  
Proper Shipping Name: AMINES, LIQUID, CORROSIVE,  
N.O.S. or POLYAMINES, LIQUID,  
CORROSIVE, N.O.S.

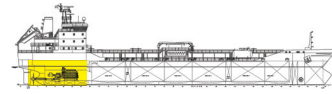


## Transport by air:

IATA: 8  
UN: 2735  
Packing Group: II  
Label: 8  
Cargo:  
Packaging instructions: 812  
Maximum quantity: 30 L  
Pass.:  
Packaging instructions: 808  
Maximum quantity: 1 L

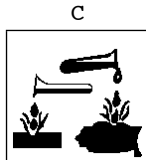


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## 15. Regulatory information



CORROSIVE

- R34 CAUSES 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).

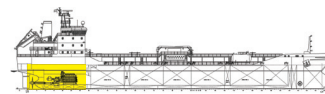
### Contains:

2-DIMETHYLAMINOETHANOL

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.

- R10 FLAMMABLE.  
R20/21/22 HARMFUL BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.  
R34 CAUSES 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 / 02 / 03 / 08 / 09 / 13 / 14 / 15 / 16