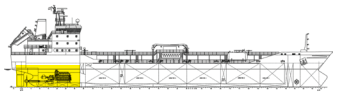
CONDENSATE CONTROL



USED FOR PROTECTION CONDENSATE AND FEED WATER SYSTEMS IN BOILER SYSTEMS OF ALL PRESSURE.

APPROVED BY
AALBORG INDUSTRIES

PHYSICAL DATA

Appearance: Colourless liquid
Specific Gravity: 1 at 20°C
Ph: 13
Flash Point: > 70°C
Compatibility: Avoid copper and copper alloys

DESCRIPTION

CONDENSATE CONTROL is a liquid product containing neutralising amines, readily mixable in water.

APPLICATIONS

- CONDENSATE CONTROL is a neutralising type corrosion inhibitor in use in steam and steam condensate system.
- CONDENSATE CONTROL can be used at boiler operating pressures up to 100 bar.
- CONDENSATE CONTROL can also be used to protect shell-type boilers that have been taken out of service, or between installation and actual commissioning

DOSAGE AND CONTROL

The dosage of CONDENSATE CONTROL required for regular treatment will depend upon the carbon dioxide content of the condensate. CONDENSATE CONTROL should be injected as frequently as necessary to maintain the pH of the condensate at the main condensate pump discharge between 8,3 and 9,0. When added continuously in conjunction with HIDRAZINE, the daily requirements of CONDENSATE CONTROL should be adjusted to maintain the correct pH of 8,3 to 9,0 in the CONDENSATE. Control is by determination of the pH of fresh samples of condensate.

A typical dosage for an average 10 metric ton. system would be 2.5 Lts/day.

For protection of idle boilers, the amount of CONDENSATE CONTROL required will be between 5 and 15 litres, depending on the size of the boiler. Details of a suitable protection programme will be provided on request by your Uniservice Representative.

CONDENSATE CONTROL may be added intermittently or continuously to the feed-water. Steel is suitable for feeding equipment. Avoid copper or copper alloys. CONDENSATE CONTROL should never be fed to the surface of hot water in a boiler feed tank, but should be fed below the surface.

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agent of **UNIservice** sa
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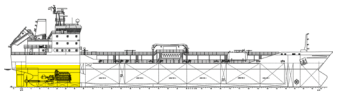
Genoa 16162 Italy
T +39 010.711.395
F +39 010.713.120
www.uniservicemarine.com
info@uniservicemarine.com

CONDENSATE CONTROL



NATURE OF SPECIAL RISKS

Caustic product, avoid contact with eyes and skin, in case rinse immediately with fresh water, and seek immediate medical attention.

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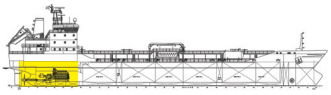

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Safety Data Sheet

1. Identification of the substance / preparation and the Company

1.1 Identification of the substance or preparation

Product name	CONDENSATE CONTROL

1.2 Use of the substance / preparation

Intended use	Steamlines corrosion inhibitor

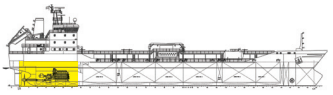
1.3 Company identification

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).

CONDENSATE CONTROL



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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: 20/21/22-35

2.2 Danger Identification

HARMFUL BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
CAUSES SEVERE BURNS.

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3. Composition / Information on ingredients

Contains:

Name	Concentration % (C)	Classification
MORPHOLINE	8,5 <= C < 10	R10
CAS No 110-91-8		C R34
CE No 203-815-1		Xn R20/21/22
Index No 613-028-00-9		
CYCLOHEXYLAMINE	18 <= C < 19,5	R10
CAS No 108-91-8		C R34
CE No 203-629-0		Xn R21/22
Index No 612-050-00-6		

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

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4. First aid measures

EYES: Wash immediately with plenty of water for at least 15 minutes and seek medical advice at once.

SKIN: Immediately take off all contaminated clothing and have a shower. Seek medical advice.

INGESTION: Have the patient drink water as much as possible and seek medical advice immediately. Do not induce vomiting before consulting a doctor.

INHALATION: Immediately seek medical advice. In the meantime, remove the patient to open air, far from the contaminated premises; if respiration stops or is difficult, give an artificial respiration adopting the proper measure for the helper.

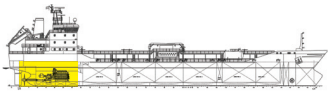
5. Fire-fighting measures

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).

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, diatomeous earth, Kieselguhr, etc.) to soak up leaked product. Collect the majority of the remaining material

CONDENSATE CONTROL



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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.

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	
MORPHOLINE							
	TLV-ACGIH		71				Skin
	OEL	EU	36	10	72	20	Skin
	OEL	IRL		20		30	Skin
	WEL	UK		20		30	Skin
CYCLOHEXYLAMINE							
	TLV-ACGIH		41				Skin
	OEL	IRL		10			Skin
	WEL	UK		10			Skin

8.2 Exposure controls

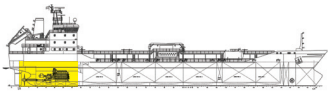
As the use of adequate technical equipment must always take priority over personal protection equipment, make sure that the workplace is well aired through effective local aspiration or bad air vent. If such operations do not make it possible to keep the concentration of the product below the permitted 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.
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
Odour	ammoniacal
Appearance	liquid
Solubility	soluble
Vapour density	Not available
Evaporation speed	Not available
Comburent properties	Not available
Partition coefficient: n-octanol/water	Not available
pH	13
Boiling point	105°C
Melting point	-5°C
Flash point	>65°C
Lower explosive limit	2% (v/v)
Upper explosive limit	9% (v/v)
Ignition temperature	345°C

CONDENSATE CONTROL



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Vapour pressure	1950kPa
Specific gravity	0,972Kg/l

10. Stability and reactivity

Thermal decomposition and combustion release carbon monoxides and other toxic gases and vapours. The product may react exothermically on contact with strong oxidizing agents or reducers, strong acids or bases.

11. Toxicological information

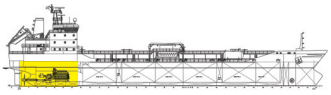
Acute effects: inhalation, cutaneous absorption and ingestion of this product are harmful. This product may irritate mucosas, the upper respiratory tract, and eyes. Exposure symptoms may include: stinging and irritated eyes, mouth, nose, throat; cough, respiratory disorders, dizziness, headache, nausea and sickness.
In the most serious cases, inhalation of this product may cause larynx and bronchial tube edema and irritation, chemical pneumonia and pulmonary edema. Upon contact with skin, this product may irritate it, causing an increase in skin temperature, swelling and itchiness. Ingestion of even small amounts of this product may cause serious health problems (stomach pain, nausea, sickness, diarrhoea).
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.

MORPHOLINE: oral LD50 (mg/kg) 1050 (RAT) ; dermal LD50 (mg/kg) 500 (RABBIT) ; inhalation LC50 (rat) 8000 ppm/8h.

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.

CONDENSATE CONTROL



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13. Disposal consideration

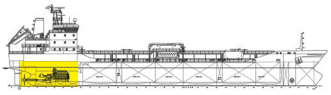
Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.
CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

---

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 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.

CONDENSATE CONTROL



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Road and rail transport:

ADR/RID Class:	8
UN:	2735
Packing Group:	II
Label:	8
Nr. Kemler:	80
Limited Quantity	LQ22
Tunnel restriction code	(E)
Proper Shipping Name:	Amines liquid, corrosive, n.o.s. (CYCLOHEXYLAMINE; MORPHOLINE)

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. (CYCLOHEXYLAMINE)

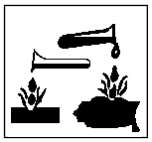
Transport by air:

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
Special Instructions:	A3
Proper Shipping Name:	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (CYCLOHEXYLAMINE)

CONDENSATE CONTROL

15. Regulatory information

C



CORROSIVE

R20/21/22	HARMFUL BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
R35	CAUSES SEVERE BURNS.
S26	IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
S36/37/39	WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.
S45	IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).

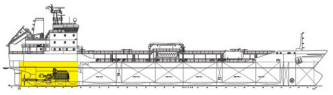
Contains:
MORPHOLINE
CYCLOHEXYLAMINE

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.

CONDENSATE CONTROL

UNIservice MARINE PRODUCTS AND SERVICES



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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.
R21/22	HARMFUL 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:
08 / 13 / 14