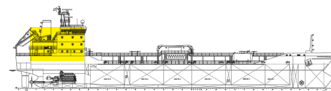


# MICROZYME LIQUID



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## ENVIRONMENTALLY SUPERIOR SANITATION TREATMENT & CLEANER

### PHYSICAL DATA

Completely soluble in water  
Environmentally safe, completely biodegradable  
Minimum aerobic bacterial count of 40 billion/gallon (3,785 liters)  
Appearance: Dark blue liquid culture  
Odour: Lightly perfumed  
Shelf life: 6 months to 1 year  
Flash point: none  
pH range: 5,5 - 8,5

### ADVANTAGES

- Eliminates sanitation wastes, grease and fat accumulation
- Eliminates foul odors and deodorizes shipboard sanitation systems
- Eliminates the hazardous use of caustics and acid by utilizing an effective blend of concentrated surfactants
- Eliminates the need for manually cleaning sanitation system
- Eliminates emergency and costly piping repairs
- Prevents clogging and avoids any back-up throughout the shipboard system
- Maintains system for long term operational efficiency.
- Safe, non-caustic, non corrosive, non-combustible, non-toxic
- Biodegradable
- USDA approved for use in federally inspected food plants
- Approved by major sanitation system manufacturers

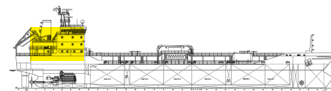
### DESCRIPTION

MICROZYME LIQUID is a concentrated blend of a liquid living aerobic and anaerobic bacteria specially selected for the unique ability to produce active enzymes which are required for degradation of sanitation wastes.

MICROZYME LIQUID, which is the fourth generation of bacteria sanitation treatments has been subjected to stringent antibiotic screening. MICROZYME LIQUID is naturally occurring and non-genetically engineered. Therefore, MICROZYME LIQUID is safe for usage under all types of applications.

With its unique ability to formulate bacterial strains which produce large amounts of amylase (starch), protease (protein), cellulase (cellulose), and lipase (grease), MICROZYME LIQUID if used on a routine basis will supplement the bacteria normally present and thereby degrade waste material more rapidly and with greater efficiency.

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## APPLICATION

MICROZYME LIQUID can be slug dosed or put directly into the sewage tank line (i.e. Marine Sanitation Device (M.S.D.), Collection, Holding and Transfer System (CHTS) or other types of holding tanks.) A more convenient method which ensures treatment throughout the system would be to apply the product directly to galley and toilet facilities (e.g. sinks, showers, commodes and scuppers). MICROZYME LIQUID with its specially designed surfactant system can be used as a neutral cleanser to replace harsh acid, caustic and bleach based products which are extremely detrimental to any type of biological system. Details of our automatic dosing system can be given to you by an UNIservice service technician.

## DIRECTION FOR USE

1. A start up dosage of 1 gallon (3.785 liters of MICROZYME LIQUID per 1.200 gallons (4.542 liters) tank capacity and should be added directly to Holding Tank and be allowed a minimum of 24-36 hours after this initial application for the system to become properly activated.
2. Additional product should be added daily if used only as a tank treatment/cleaner in the amounts of 32 oz (1 liter) per 1.200 gallons of additional liquids.
3. MICROZYME LIQUID when used as a cleanser should be applied with about 3-4 ounces (75-100 ml) of product to each toilet, sink, drain in the same manner as with any previously used sanitorial type cleaner.

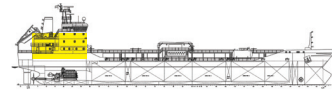
MICROZYME LIQUID performs within a pH range of 5,5 - 8,5 and at a temperature range of 10-44 °C (50-110 °F). Extreme variations of pH and temperature as well as wide shifts in either parameter over a short period of time should be avoided.

## STORAGE AND HANDLING

Store in cool dry place  
Keep container closed when not in use  
Do not ingest  
Do not get in eyes  
Avoid prolonged skin contact  
For eye and skin contact, wash thoroughly with clean fresh water.  
UNIservice recommends that all supervising personnel and employees read MSDS prior to using any product.

**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.

# MICROZYME LIQUID



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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 MICROZYME LIQUID

#### 1.2 Use of the substance / preparation

Intended use Environmentally superior sanitation treatment & cleaner

#### 1.3 Company identification

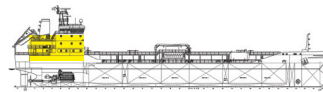
Name Urruty gg Niego S.r.l.  
Full address Via al Santuario di N.S. Guardia 58 a  
District and Country 16162 Genova Bolzaneto (GE)  
Italia  
Tel. + 39 010 711395  
Fax + 39 010 713120

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

This product is not dangerous under 67/548/EEC and 1999/45/EC directives and subsequent amendments.

## 3. Composition / Information on ingredients

The product is not classified as hazardous pursuant to directives 67/548/EEC and 1999/45/EC and subsequent amendments and upgrades and does not contain substances classified as being hazardous to human health or the environment pursuant to 67/548/EEC and subsequent amendments.

## 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.

## 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.

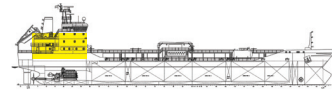
### HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

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.

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## 8. Exposure control / personal protection.

### 8.1 Exposure limit values

Not available

### 8.2 Exposure controls

Observance of safety measures used in handling chemical substances.

### RESPIRATORY PROTECTION

None required.

### EYE PROTECTION

None required.

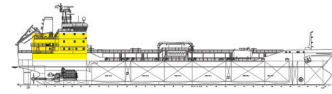
### HAND PROTECTION

None required.

### SKIN PROTECTION

None required.

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## 9. Physical and chemical properties

Colour	Not available
Odour	pleasant
Appearance	liquid
Solubility	in water completely soluble
Specific gravity	1,00 Kg/l
Vapour density	Not available
Evaporation speed	Not available
Comburent properties	Not available
Partition coefficient: n-octanol/water	Not available
pH	7.0 - 9.0
Boiling point	Not available
Flash point	Not available
Explosive properties	Not available
Vapour pressure	Not available
Specific gravity	1,000Kg/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.

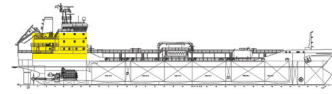
## 11. Toxicological information

According to currently available data, this product has not yet produced health damages. Anyway, it must be handled according to good industrial practices.

## 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. Neat product residues should be considered special non-hazardous waste.

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.

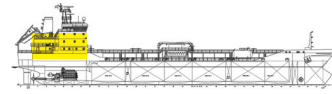
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## 15. Regulatory information

S 2                    KEEP OUT OF THE REACH OF CHILDREN.  
S24/25                AVOID CONTACT WITH SKIN AND EYES.

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

# MICROZYME LIQUID



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## 16. Other information

### 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 / 08 / 09 / 13