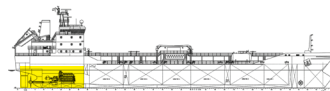


# CHLORINE



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## FOR SWIMMING POOL, SPA - JACUZZI POOL, SEWAGE WATER SYSTEM



IMO APPROVED  
MEPC.2/CIRC.13 Annex 10

### ADVICE

For SPAS and JACUZZI POOLS the use of Bromine product Bulletin No. 7/37 is strongly recommended

### DESCRIPTION

These strong oxidisers and disinfectants when dissolved in water hydrolyse thus releasing active chlorine in its most effective hypochlorous acid form. They are available in powder, granule, tablets, pellets, large tablets and liquid form.

#### 1) GRANULAR CHLORINE - 60% Minimum Chlorine (Sodium Dichloroisocyanurate)

For chlorination of swimming pools, sewage and waste water. Initial chlorination: 150 grams every 10 m<sup>3</sup> of swimming pool water. Keep 1.0 PPM active chlorine residual in case of swimming pool water.

#### 2) CHLORINE Tablets 200 gr. - (Sanuril 115 or Hichlor type) (Trichlorineisocyanuric Acid 90%)

For chlorination of swimming pools, sewage and waste water. Standard tablet size: 75 mm diameter - 25 mm H. For swimming pool water treatment: 4 large tablets every 100 m<sup>3</sup> of water to be put in skimmers or in floating trays. For waste water treatment, fill the chlorinating pipes until 2 to 5 PPM of residual active chlorine are obtained. If below 2 PPM, use both chlorinating pipes. Assess residual chlorine level with the appropriate TEST KIT supplied by UNISERVICE.

#### 3) CHLORINE Tablets 20 gr. (Trichlorineisocyanuric Acid 90%)

Can be used for maintenance or shock treatment of swimming and Jacuzzi pool. Dosage: initial 20 tablets every 10 m<sup>3</sup> Maintenance: 1/2 tablets every 10 m<sup>3</sup> every day

#### 4) CALCIUM HYPOCHLORITE - Granular

For chlorination of swimming pools, sewage and waste water. Same dosage as granular chlorine (1).

#### 5) CALCIUM HYPOCHLORITE - Tablets 5 gr.

For chlorination of swimming pools, sewage and waste water. For swimming pools: 2 tablets every 10 m<sup>3</sup> of swimming pool water. For waste and sewage water treatment, place the tablets in proper containers according to requirement.

#### 6) CHLORINE-BROMINE and pH TEST KIT DPD 1 and Phenol Red Tablets

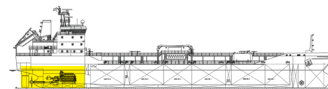
For Swimming Pools, Jacuzzi and Aqueducts.

#### 7) CHLORINE-BROMINE and pH TEST KIT Ortholidine

For Swimming Pools, Jacuzzi and Aqueducts.

All the above products are very strong oxidisers. Therefore do not mix nor put them in contact with other chemical products, particularly acid ones. For periodical washing of chlorinator, follow the manufacturer's instructions by using DESCALING LIQUID or SAFE DESCALER (powder).

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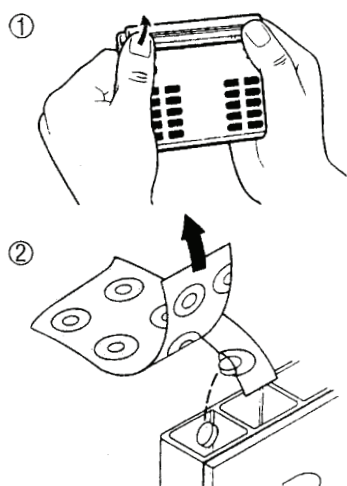


## SAFETY INSTRUCTIONS

These products may cause severe burns. Dangerous to the eyes, they may cause skin lesions. Immediately flush the area with water for at least 15 minutes. Always seek medical advice. See safety data sheet of each product.

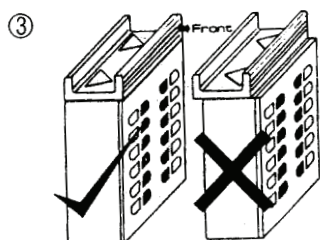
## INSTRUCTION FOR USING POOLTESTER "CHLORINE-PH" AND "BROMINE-PH"

With DPD 1 tablets (active or free chlorine) - DPD 3 tablets (total chlorine)



1. Remove the lid (see picture 1) and rinse out the compartments with the swimming pool water to be tested.
2. Fill all three compartments to the top with the swimming pool water to be analysed. This is conveniently done by scooping up the water from a few inches below the surface.
3. Add one PHENOL RED tablet to the left hand compartment by tearing open the foil strip (see picture 2) without touching the tablets with your fingers.
4. Add one DPD 1 tablet to the right hand compartment by tearing open the foil strip (see picture 2) without touching the tablet with your fingers.
5. Replace the lid of the POOLTESTER with the arrows pointing towards to printed front.
6. The tablets will quickly disintegrate. Invert the POOLTESTER several times to mix the contents thoroughly.
7. Take the readings by holding the POOLTESTER towards natural daylight. Select the nearest colour match against the colour standards and read off the corresponding values.
8. The value on the left is the pH value.
9. The value on the right is the concentration of the active or free chlorine ppm or mg/l. (The value on the right is the concentration of bromine ppm or mg/l).

Note: To find total chlorine add DPD 3 tablet into the water in which a tablet of DPD 1 has been already dissolved.



### IMPORTANT

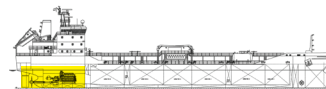
- Touching the tables with your fingers can lead to inaccurate results.
- The colour matching must be carried out immediately after the tablets have dissolved in the water sample.
- After each measurement the POOLTESTER and lid should be thoroughly rinsed out to prevent errors by cross contamination.
- Levels of Chlorine above 10 ppm or mg/l can cause bleaching of the DPD colour.
- Levels of Bromine above 20 ppm or mg/l can cause bleaching of the DPD colour.
- pH values below 6.8 also produce a yellow coloration, so a reading of 6.8 may be incorrect.
- pH values above 8.2 also produce a red coloration, so a reading of 8.2 may be incorrect.

Tablets of DPD 1 are used to measure ACTIVE CHLORINE or free CHLORINE such as contained in hypochlorous acid used to eliminate the bacteria.

If DPD 3 tablet is added into the water in which a tablet of DPD 1 has been already dissolved the TOTAL CHLORINE will be measured which is the sum of ACTIVE CHLORINE plus COMBINED CHLORINE (combined with other substances such as ammonia, chloroamine, etc.).

The Total Chlorine can also be measured with ORTHOTOLIDINE reagent but ACTIVE CHLORINE, i.e. the important one for disinfection can only be measured with tablets of DPD 1.

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## ORTHOTOLIDINE TEST KIT FOR CHLORINE, BROMINE AND pH

### CHLORINE AND BROMINE TEST



**This test indicates the concentration of available Chlorine (or Bromine) for Bacteria Control.**

1. Add four (4) drops of Orthotolidine test solution.
2. Cover the test cell with cap and mix solution.
3. Allow solution to stand for about 30 seconds and compare colour of solution with Chlorine or Bromine colour standards. Chlorine or Bromine concentration will be indicated in parts per million (ppm or mg./l).
4. Chlorine: maintain 1.0 to 2.0 ppm (ideal) range for comfortable swimming.
5. Bromine: maintain 2.0 to 4.0 ppm (ideal) range for comfortable swimming.

### pH TEST:

**This test indicates the pH condition of your pool water.**

1. Fill the test cell next to the pink pH color standards to the line with water.
2. Add four (4) drops of Phenol Red test solution.
3. Cover the test cell with your finger and mix solution.
4. Allow solution to stand for about 30 seconds and compare color of solution with pH color standards. Maintain pH at 7.2-7.6 (ideal) range for comfortable swimming. Use your test kit in the early morning and late afternoon. Store out of direct sunlight and heat. Replace Orthotolidine and Phenol Red Solution at the beginning of the pool season.

Hands should be clean and free from pool chemicals when making water tests.

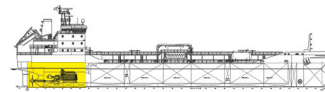
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**IMPORTANT:** WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE, THIS INFORMATION IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, 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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## 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: O-Xn-N  
R phrases: 8-22-31-36/37-50/53

### 2.2 Danger Identification

CONTACT WITH COMBUSTIBLE MATERIAL MAY CAUSE FIRE.  
HARMFUL IF SWALLOWED.  
CONTACT WITH ACIDS LIBERATES TOXIC GAS.  
IRRITATING TO EYES AND RESPIRATORY SYSTEM.  
VERY TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.

## 3. Composition / Information on ingredients

Contains:

Name	Concentration % (C)	Classification
TRICHLOROISOCYANURIC ACID	74 <= C < 78	R31
CAS No 87-90-1		O R 8
CE No 201-782-8		Xn R22
Index No 613-031-00-5		Xi R36/37
		N R50/53

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

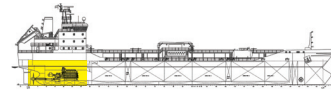
## 4. First aid measures

**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.

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**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

In the event of a fire, cool containers immediately to prevent hazard of explosions and the generation of gas hazardous to health and safety. Always wear full fireproof gear.

### GENERAL INFORMATION

In the case of fire, use jets of water to cool the containers to prevent the risk of explosions (product decomposition and excess pressure) and the development of substances potentially hazardous for health. Always wear full fire prevention gear.

### SUITABLE EXTINGUISHING MEDIA

Use extinction equipment containing carbon dioxide, foam and chemical powders. For product leaks and spills that do not catch 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 water.

### 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), self-respirator (self-protector).

## 6. Accidental release measures

### PERSONAL PRECAUTIONS

Eliminate sources of ignition (cigarettes, flames, sparks, etc.) from the area in which the leak occurred. If there are no contraindications, spray powder with water to prevent the formation of dust. Use breathing equipment if powders are released into the air. Block the leakage if there is no hazard. Do not handle damaged containers or leaked product before donning appropriate protective gear. Send away individuals who are not suitably equipped. For information on risks for the environmental and health, respiratory tract protection, ventilation and personal protection equipment, see the other sections of this sheet.

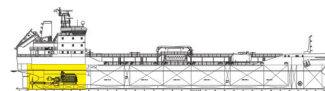
### ENVIRONMENTAL PRECAUTIONS

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

### METHODS FOR CLEANING UP

Use spark proof mechanical tools to collect the leaked product and place in a plastic container. If there are no contraindications, use jets of water to

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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 only in the original container. Follow the instructions of the supplier. Store in a ventilated and dry place, far away from sources of ignition. Ensure that there is an adequate earthing system for the equipment and personnel.

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## 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.

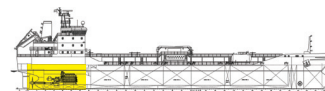
#### EYE PROTECTION

Wear protective 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.

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## 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 an FFP3 (ref. standard EN 141) type half mask.

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).

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.

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.

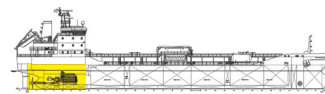
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## 9. Physical and chemical properties

Colour	Not available
Odour	technical
Appearance	tablets / powder
Vapour density	Not available
Evaporation speed	Not available
Comburent properties	Not available
Partition coefficient: n-octanol/water	Not available
pH	Not available
Boiling point	Not available
Flash point	>240°C
Explosive properties	Not available
Vapour pressure	Not available
Specific gravity	Not available



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## 10. Stability and reactivity

The product is stable even if the powders are potentially explosive when mixed with air.

## 11. Toxicological information

Acute effects: ingestion of this product is harmful. Even small amounts of product may cause serious health problems (stomach pain, nausea, sickness, diarrhoea). This product may slightly irritate mucosae, the upper respiratory tract, eyes, and skin. Exposure symptoms may include: sting, cough, asthma, laryngitis, respiratory disorders, headache, nausea and sickness. This product generates toxic harmful gases upon contact with acids.

## 12. Ecological information

This product is dangerous for the environment and highly toxic for aquatic organisms. In the long term, it may even have negative effects on aquatic environment.

### TRICHLOROISOCYANURIC ACID

EC50 (48h):

0,17 mg/l/48h Daphnia magna

LC50 (96h):

0,08 mg/l/96h Oncorhynchus mykiss

## 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.

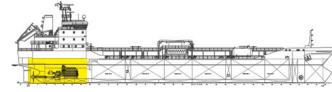
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

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 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.

### Road and rail transport:

ADR/RID Class: 5.1  
UN: 2468  
Packing Group: II

### Carriage by sea (shipping):

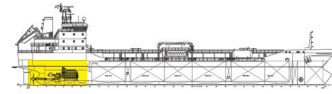
IMO Class: 5.1  
UN: 2468  
Packing Group: II  
Marine Pollutant NO



### Transport by air:

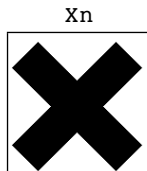
IATA: 5.1  
UN: 2468  
Packing Group: II

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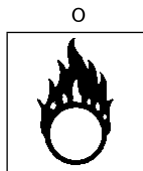


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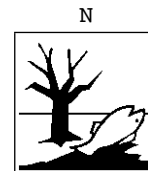
## 15. Regulatory information



HARMFUL



OXIDIZING



DANGEROUS FOR THE ENVIRONMENT

- R 8 CONTACT WITH COMBUSTIBLE MATERIAL MAY CAUSE FIRE.
- R22 HARMFUL IF SWALLOWED.
- R31 CONTACT WITH ACIDS LIBERATES TOXIC GAS.
- R36/37 IRRITATING TO EYES AND RESPIRATORY SYSTEM.
- R50/53 VERY TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.
- S 8 KEEP CONTAINER DRY.
- S26 IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
- S29 DO NOT EMPTY INTO DRAINS.
- S41 IN CASE OF FIRE AND/OR EXPLOSION DO NOT BREATHE FUMES.
- S60 THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF AS HAZARDOUS WASTE.
- S61 AVOID RELEASE TO THE ENVIRONMENT. REFER TO SPECIAL INSTRUCTIONS/SAFETY DATA SHEETS.

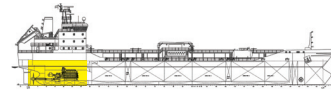
### Contains:

TRICHLOROISOCYANURIC ACID

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.

- R 8 CONTACT WITH COMBUSTIBLE MATERIAL MAY CAUSE FIRE.  
R22 HARMFUL IF SWALLOWED.  
R31 CONTACT WITH ACIDS LIBERATES TOXIC GAS.  
R36/37 IRRITATING TO EYES AND RESPIRATORY SYSTEM.  
R50/53 VERY TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.

### 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 / 14