

NCLT

APPLICATIONS

NCLT is a nitrite, borate and organics based corrosion inhibitor suitable for all types of engines and other closed re-circulating water systems.

DIRECTIONS FOR USE

Determine the quantity of treatment required for the system from the product dosage chart. Sacrificial anodes (magnesium or zinc) and galvanized coating contained inside the cooling water system must be removed prior to *NCLT* treatment. These materials are unnecessary in the treated system. It can cause undesirable deposits if not removed. *NCLT* should be added to the system at a point where the circulation is high. Do not add to expansion tank if there is little or no circulation.

Systems contaminated with oil and/or scale should be cleaned before applying *NCLT* treatment. Use *SEA CLEAN* for degreasing and *DESCALING LIQUID* for descaling operation.

DOSAGE AND CONTROL

The effective control range of *NCLT* is 1500 - 2000 PPM NO₂. To maintain adequate reserves, nitrite level should not be allowed to fall below 1500 PPM. Initial dosage is 6 lt. of *NCLT* for every ton of cooling water. Maintenance dosages are based on the nitrite concentration shown in the product dosage chart.

| DOSAGE CHART | |
|--------------------------------|--------------------|
| Nitrite (PPM NO ₂) | NCLT (lt. per ton) |
| Initial dose | 6.0 |
| 200 | 5.2 |
| 400 | 4.4 |
| 600 | 3.6 |
| 800 | 2.8 |
| 1000 | 2.0 |
| 1200 | 1.2 |
| 1500 - 2000 | Satisfactory |

The condition of the cooling water treated with *NCLT*, should be within the following recommendation:

| | | |
|----------|---|---------------------------------|
| Nitrite | : | 1500 - 2000 PPM |
| Chloride | : | Below 100 PPM Cl |
| Hardness | : | Below 180 PPM CaCO ₃ |
| pH | : | 8.5 - 9.5 |

Use *UNIMARINE NITRITE TEST SET* to determine the *NCLT* level. If there are no leaks and a apparent drop in nitrite value is observed in the system, this could be due to bacteria contamination. Contact your *UNIMARINE* representative for assistance.

Continued on page 2

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NCLT

Corrosion and scale inhibitor for closed circuit cooling water systems

- Highly effective anodic inhibitor treatment, protects ferrous and non-ferrous metals
- Deposits a microscopic protective film on surfaces
- Built-in pH buffering compounds
- Controls formation of hard scale deposits
- Will not damage seals, glands, packing, hoses, and gaskets
- Compatible with all types of Glycol based anti-freeze

PRODUCT CHARACTERISTICS

| | |
|-------------------|--------------------|
| Appearance: | pale yellow liquid |
| Corrosive action: | none |
| Specific gravity: | 1,2 (20°C) |
| pH 1% solution: | 13 - 14 |
| IMO Class: | 6.1 / III |
| UN Number: | 3287 |
| ADR: | 6.1.65c) |

UNIClean

NATURE OF SPECIAL RISKS AND SAFETY ADVICE

In accordance with the latest EEC Council directives this product is subjected to:

- R25 : Toxic if swallowed
- S2 : Keep out of reach of children
- S27 : Immediately take off all contaminated clothing
- S36/37 : Wear suitable protective clothing and gloves
- S45 : In case of accident or if you feel unwell, seek medical advice immediately (show label if possible)

Contains sodium nitrite

Interpretation the table of dosage of NCLT according to the Nitrite Hach test kit

Normal-speed engine, with a dosage of 4 or 6 lt. of NCLT per ton of water

Multiply scale reading by 20 to obtain nitrite

Example no. 1: dosage 4 lt. of *NCLT* per ton of water, scale reading $40 \times 20 = 800$ PPM nitrite. Add 2 lt. of *NCLT* per ton of water in the circuit to obtain 1500 / 2000 PPM.

Example no. 2: dosage 6 lt. of *NCLT* per ton of water. Add 4 lt. of *NCLT* per ton of water in the circuit to obtain 2300 / 3000 PPM.

High-speed engine, with a dosage of 8 lt. of NCLT per ton of water

Multiply scale reading by 40 to obtain nitrite

After adding NitriVer 2 nitrite reagent powder pillow fill both tubes to the upper mark (= 10 ml.) with demineralised (or battery-) water, stopper again and invert ot mix. Repeat step 5, 6 and 7 and read the scale.

Example: dosage 8 lt. of *NCLT* per ton of water, scale reading $40 \times 40 = 1600$ PPM nitrite. Add about 4 lt. of *NCLT* per ton of water to the circuit to obtain 3000 / 3500 PPM.

Always add *NCLT* at the point where the circulation is high. Some new systems' header tanks are only for expansion and have very little or no circulation. In case of loss of treatment levels check first for leakage in the system. Always use distilled or de-ionized water. Call your *UNIMARINE* Service Engineer if the loss of treatment is not caused by leakage of the cooling system, but by other reasons such as bacteria contamination or oxidation of nitrite. On new buildings or overhauled systems follow the advice of the manufacturer in conjunction with *UNIMARINE*.

All competitors nitrite / borate - based water treatments are compatible with *NCLT*, but allow old product to drop to lowest limit before dosing the Unimarine product.

NCLT will slowly remove sludge and other residues during the first period of operation. This can result in cloudy water, which will clarify after draining small quantities of water. It is not necessary to remove all existing coolant unless inspection has shown excessive contamination.

If the treatment is changed after the soluble oil inhibitor type complete draining, cleaning and even degreasing of the circuit is advised. Please consult your *UNIMARINE* representative for the correct procedure of changing to *NCLT*.

INSTRUCTION ON RECOMMENDED NITRITE RANGE

| NORMAL-SPEED ENGINE | | |
|--|-----------------------------------|---|
| Types of water chlorides concentration | Initial dosage for 1 ton of water | Min. conc. Nitrite PPM (NO ₂) |
| De-ionized or up to 50 PPM chlorides | 4 lt. | 1500 |
| From 50 up to 100 PPM Chlorides | 6 lt. | 2300 |
| HIGH-SPEED ENGINE | | |
| De-ionized or up to 50 PPM chlorides | 6 lt. | 2300 |
| From 50 up to 100 PPM Chlorides | 8 lt. | 3000 |

TABLE OF DOSAGE OF NCLT ACCORDING TO NITRITE HACH TEST KIT

| | | | | | | | | | | |
|---|---|-----|-----|------|------|----------------|------|----------------|------|----------------|
| Initial dosage on <i>NCLT</i> : 4 lt. per ton of water (1000 lt.) | | | | | | | | | | |
| Nitrite (NO ₂) PPM | 0 | 400 | 750 | 1100 | 1500 | 1500 / 2000 | | | | |
| <i>NCLT</i> lt. / ton | 4 | 3 | 2 | 1 | 0 | suspend dosage | | | | |
| Initial dosage on <i>NCLT</i> : 6 lt. per ton of water (1000 lt) | | | | | | | | | | |
| Nitrite (NO ₂) PPM | 0 | 400 | 800 | 1150 | 1500 | 1900 | 2300 | 2300 / 3000 | | |
| <i>NCLT</i> lt. / ton | 6 | 5 | 4 | 3 | 2 | 1 | 0 | suspend dosage | | |
| Initial dosage on <i>NCLT</i> : 8 lt. per ton of water (1000 lt) | | | | | | | | | | |
| Nitrite (NO ₂) PPM | 0 | 400 | 750 | 1100 | 1500 | 1900 | 2250 | 2600 | 3000 | 3000 / 3500 |
| <i>NCLT</i> lt. / ton | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | suspend dosage |

RECOMMENDATION FOR COOLING WATER TREATED WITH NCLT

Sodium nitrite (NaNO₂) : from 2300 to 4500 (see instructions below)
 Or nitrite (NO₂) : from 1500 to 3000 (see instructions below)
 Chlorides : Normal-speed engine 100 PPM maximum - High-speed engine 50 PPM maximum
 Hardness : Max. 180 PPM CaCO₃
 pH : from 8,5 to 9,5

If the pH is below 8,5 add a small dose of alkalinity control to increase.

NITRITE TEST (NO₂) - HACH TEST KIT FOR NCLT

1. Thoroughly rinse the marked plastic dropper with the water to be tested. Fill the dropper to the 5 ml mark with the sample and discharge the contents of the dropper into the color viewing tube.
2. Fill the tube to the upper mark (10 ml) with demineralised water. Stopper the tube and invert to mix.
3. Divide the diluted sample between the two color viewing tubes in the kit. Each tube should be filled to the 5 ml mark.
4. Use the clippers to open one NitriVer 2 Nitrite Powder Pillow. Add the contents of the pillow to one of the tubes. Stopper and shake to mix.
5. If nitrite is present in the sample a greenish-brown color will develop.
6. Allow 10 minutes for full color development.
7. Place the Nitrite Color Disc in the comparator.
8. Place the tube prepared with NitriVer in the right opening of the color comparator.
9. Place the other tube of diluted sample in the left opening of the color comparator.
10. Hold the comparator up to a constant light source and look through the opening of the comparator. Rotate the disc until a color match is obtained. Read the scale

