

CARETREAT CWT AL10

- Excellent:
 - > Corrosion inhibition
 - > Aluminum inhibition
 - > Scale distortion
 - > Sludge dispersion

Diesel engine cooling water corrosion and scale inhibitor, for closed circuit systems with up to 10% Aluminum alloy present

DESCRIPTION

Caretreat CWT AL10 is a liquid blend of nitrite, borate, silicates and polymer based corrosion inhibitors with a suitable buffer to ensure stable pH conditions. It protects the diesel engine cooling water system as well as any auxiliary cooling water systems from corrosion, sludge formation and scale. Caretreat CWT AL10 is suitable for cooling systems with maximum 10% aluminum alloys present.

ADVANTAGE

- Suitable for slow, medium and high speed engines
- Effective corrosion inhibition on ferrous and non ferrous metals
- Aluminum corrosion inhibition up to 10% aluminum alloys present
- Prevents scale and sludge built up
- Approved by major diesel engine manufacturers

APPLICATIONS

Caretreat CWT AL10 can be used in multi-metal:

- diesel cooling water systems,
- compressor cooling water systems,
- general cooling water systems and central heating systems.

DIRECTIONS FOR USE

Starting with the treatment of a system, the nitrite level must be kept at the higher nitrite level of the corresponding chloride concentration by testing and dosing daily. If the system is passivated, the testing frequency and dosing can be reduced to once a week. Always add Caretreat CWT AL10 at a point where circulation is high. Most modern systems header tanks are purely for expansion and have little or no circulation, preferably this is not used as dosing point. The majority of loss in treatment levels will be due to leakage and subsequent dilution by make up water (distilled, RO or DI water should always be used). We advise testing of the Caretreat CWT AL10 level with the Marine Care Cooling water test kit.



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CARETREAT CWT AL10

DIRECTIONS FOR USE

Recommendations for cooling water treated with Caretreat CWT AL10 :

Nitrite	1000-1500 ppm NO_2^-
Chloride	max. 100 ppm Cl^-
Hardness	max. 100 ppm as CaCO_3
pH	8,7 - 9,5

Remarks

On new buildings or overhauled systems, follow engine manufacturer's advice or consult Marine Care. If changing to Caretreat CWT AL10 from nitrite borate based products of another make, start dosing Caretreat CWT AL10 using Marine Care tests. Caretreat CWT AL10 will slowly remove sludge and other residues during the first month. This can result in slightly cloudy water which will clarify after draining small quantities of water and as make up water is added, leaving the system clean. It is not necessary to drain existing cooling water completely unless inspection or analysis results of cooling water, has shown excessive contamination. Marine Care can give advice on cleaning contaminated systems.

DOSAGE

Caretreat CWT AL10 is used in a dosage of 20-30 liter per 1000 liter system volume and will give a 1000 - 1500 mg/l nitrite (NO_2^-) concentration, depending on the chloride level and engine type, please refer to the engine manufacturers instructions on recommended nitrite levels:

Chloride Concentration	Initial Dosage	Nitrite Level
0 - 50 ppm Cl^-	20- 24 ltr/ m^3 cooling water	1000 - 1200 ppm NO_2^-
50 - 100 ppm Cl^-	24 - 30 ltr/ m^3 cooling water	1200 - 1500 ppm NO_2^-

DOSING SYSTEMS

Caretreat CWT AL10 is normally dosed by a timer based dosing system consisting of a timer operated metering pump, dilution tank and injector. *Marine Care* supplies a complete range of dosing systems, from manual operated systems, to custom built computer operated high tech systems, for every application.

MONITORING

Cooling water should be monitored regularly on pH Value, nitrite and chloride concentrations with *Marine Care* Cooling Water Test Kit. Log the analysis results in a log book or electronically in E-care. Results of the analysis are compared with the specifications and adjusted according the table 1. Periodically an extended analysis, on at least dissolved copper and iron on cooling water, is highly recommended. When in doubt contact *Marine Care*.

Table 1: Adjust Nitrite Concentration

Dosing / m^3	1 Ltr	5 Ltr	10 Ltr	15 Ltr	20 Ltr
Nitrite concentration	50 ppm	250 ppm	500 ppm	750 ppm	1000 ppm
Adjust with CWT AL10	19 L/ m^3	15 L/ m^3	10 L/ m^3	5 L/ m^3	

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CARETREAT
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CORROSION RATE

Caretreat CWT AL10 has been subjected to corrosion tests on several metal alloys;

- Corrosion test for CWTs in Glassware (ASTM D1384-05)
- Corrosivity of water in absence of heat transfer (ASTM D2688-05)
- Static corrosion test with Rohrback Corratel

Results of the corrosion tests are compared with ASTM D3306, FNACE and VW774-G. Maximum corrosion rate allowance mentioned in ASTM D3306 and VW774-G are used on the corrosion results from tests performed according ASTM D1384-05 and D2688-05.

Table 2: Corrosion rate results

Alloy	ASTM D1384 D3306	ASTM D1384 FNACE	ASTM D2688 FNACE	Corrator FNACE	ASTM D1384 VW774G
CDA706, C70600 Copper Nickel 90/10	Pass	Excellent	Excellent		Pass
CDA 110 Copper UNS C11000	Pass	Excellent		Excellent	Pass
Cast Iron UNS F10007, SAE G3500	Pass	Excellent			Pass
C1020 steel UNS G10200	Pass	Excellent			Pass
AL1100, A91100 Aluminum	Pass	Excellent	Excellent	Excellent	
SAE 329, UNS 23190 Cast Aluminum, AL319.1 GAISi6Cu4	Pass	Excellent	Excellent	Excellent	Pass
AL6061, UNS A96061 Aluminum	Pass	Excellent		Excellent	
C1010 Low carbon steel	Pass	Excellent	Excellent	Excellent	Pass
Brass alloy CDA260, C26000	Pass	Excellent			Pass
Red Brass alloy CDA230, UNS C23000, 85/15 brass	Pass	Excellent			Pass
Solder 30/70C Alloy grade 30A (SAE 3A)	Pass				Pass

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PHYSICAL PROPERTIES

COLOR : COLORLESS TO SLIGHT YELLOW
PH 1% (v/v) : 8,9-9,2
SPECIFIC GRAVITY : 1,12-1,18 KG/L
FLASH POINT : NOT APPLICABLE
BOILING POINT : >100 °C



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