

Liquid / Powder Cooling Water Corrosion Inhibitor

PRODUCT DESCRIPTION

PWT 544 is a liquid/powder, nitrite/borate based compound with organic corrosion control in re-circulating water systems.

Directions for use and Dose Rates

PWT 544 is a highly effective corrosion inhibitor for all the common ferrous and non-ferrous metals in cooling water systems using distilled or fresh water.

The stable microfilm coating that is provided prevents corrosion due to electrolytic action between dissimilar metals used in the system.

The product was developed to overcome the inherent difficulties sometimes experienced by using chromate treatments and soluble oils. PWT 544 has been field tested and found to have no detrimental effects on non-metallic substances such as seals, glands, packing, hoses, gaskets etc., normally used in these systems.

The compound is alkaline and so will suppress acid based corrosion, which would otherwise result in corrosion damage such as pitting.

However, the alkalinity control is such that even if the product is accidentally overdosed, the pH of the water will remain within limits, so that the metals which would be affected by extremes of alkalinity or acidity are protected.

PWT 544 combines and reacts with sludge, scale and rust deposits found in incorrectly treated cooling systems and will ensure their gradual removal in all but the most severely fouled systems.

In cases where systems are contaminated with oil and/or scale they should be cleaned before starting to apply PWT 544. There are suitable products to carry out the cleaning. Degreasing should be carried out using PES30 and descaling using PR402A.

The use of antifreeze is sometimes required if the vessel is to be laid up in cold areas and so PWT544 can be used in conjunction with antifreeze products.

SAMPLING AND TESTING

The test kit provides the necessary equipment to carry out the control tests.

Obtain a representative sample of the cooling water. Carry out the tests (following the instructions given in the test kit) and log the results on the log sheets provided. These log sheets should be returned to Account Office for review by Marine Chemical Specialists.

Use the dosage chart over the page to adjust the treatment to obtain the optimum level. It is important that regular testing is carried out to ensure levels of treatment are correct.

FEATURES AND BENEFITS

Has the advantage of a liquid in ease of application and economy of use.

By depositing a microfilm on the metal surfaces electrolytic corrosion is prevented.

- § Controls deposit formation and sludge.
- § Non chromate product
- § Effective against cavitation erosion.
- § Compatible with non-metals such as hoses, gaskets and seals.
- § Maintains constant pH levels so metals such as copper and brass are not affected by high pH.
- § Compatible with permanent types of antifreeze.
- § Simple control tests.

Applications

The product can be used for corrosion inhibition in many types of closed recirculation systems such as: -

- § Diesel engine cooling water systems.
- § Compressor cooling water systems.
- § Centralised cooling systems.
- § Hot water heating systems.
- § Chilled water systems.
- § Transformer cooling systems.
- § Fresh water ballast tanks.

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DOSAGE AND CONTROL

Initial dosage for an untreated system is 10 litres of PWT 544 or 1.77 kg PWT 544 NB POWDER/1000 litres of untreated distilled feed water. This will bring the treatment up to a suitable minimum level of 1000 ppm nitrite.

The dosage chart given below is for convenience in calculating the amount required to bring the level to the suitable point between the minimum and maximum - this being 1500 ppm nitrite. Normal nitrite limits: - 1000 - 2400 ppm nitrite (NO₂).

After a short period of use the operator will be able to easily determine the level of treatment required.

Nitrite ppm NO ₂	0	250	500	750	1000	1250	1500	2000	3000	4000
PWT 544 litres/100 litres	12.5	10.5	8.3	6.25	4.2	2.1	0	0	0	0
PWT 544 POWDER kg /100 Litres	2.21	1.86	1.47	1.10	0.37	0	0	0	0	0

The table above indicates the dosage required to keep the nitrite level at a safe mid point level of 1500 ppm NO₂

Normal pH should be maintained between 8 and 10 by the treatment.

Dosing Method

The optimum methods for dosing PWT 544 are: -

- by metering pump.
- into the expansion tank/cascade tank.
- directly by means of a treatment pot installed in a small bypass line in the main circulating system.

Circulation of the system should be allowed for a while to ensure the make up product has been distributed before testing again.