MARICHEM WORLDWIDE MARIGASES SERVICES

COLD CORROSION TEST KIT ™

DESCRIPTION

Increased iron concentration in cylinder drain oil with regard to two-stroke marine diesel engines represents currently a big challenge for ship operators. Latest changes in operation of such vessels (slow-steaming practices with a partial load) as well as modified design of two-stroke engines (longer piston strokes) for optimization of fuel oil expenses often result in lower operating temperatures and in effect the phenomenon of "cold corrosion". The amount of iron present in cylinder drain oil provides direct indication of wear rate of cylinder components. Regular verification of iron concentration gives valuable information about the condition of engine parts, i.e. helps to determine the level of wear caused either by mechanical abrasion (iron particles) or acid corrosion (iron salts) at an early stage.

For effective management of cylinder lubricant, Marichem Marigases is distributing a new digital test called **COLD CORROSION TEST KIT** which enables easy on-board trend monitoring of the degree of iron concentration. Optimized semi-automatic test procedures with automatic electronic analysis of cylinder drain oil samples and direct digital display of iron amount provide engineers and users with quick and precise test results.

Through a combination of Iron test and BN measurements with Marichem Marigases **TBN TEST KIT** or **COMBINED TEST KIT** allows monitoring proper lubrication of cylinder components and therefore optimal engine performance can be ensured.

ADVANTAGES & CHARACTERISTICS

- Precise automatic measurement of iron content
- Easy-to-read, digital display of test results
- No need to use color reference chart
- Early warning of corrosion problems
- Efficient adjustment of lubrication of cross-head engines

FEATURES

Measuring range: 15/20 - 1100 mg/kg

Measuring temperature: 70 °C

Measuring time: about 15min. for two cylinder drain oil samples

Measurement method: chroma meter with LED transmitted light source

Accuracy: +/- 20mg/kg (confirmed repeatability of test results)

PACKAGING

Order Number : 720108

Container : Sturdy Case

TESTING PROCEDURE

TThe measurement of iron content in cylinder drain oil is based on the chemical reaction of iron present in cylinder lubricant in corrosive or abrasive state and special indicator solution. The color of liquids obtained through the chemical reaction will vary from light blue to dark blue directly depending on the iron concentration in cylinder drain oil samples (the so-called "Prussian blue reaction"). The darker the hue of the liquid, the higher level of iron concentration the cylinder lubricant contains.

Once the **COLD CORROSION TEST KIT** is turned on, it is necessary to simply follow the instructions appearing on the digital display of the test device. In the first step,

two chambers A and B are automatically heated to the preset temperature. During the heating process cylinder drain oil samples can be prepared. After quick manual preparation and as soon as the heating process is completed, the glass vials filled with the mixture of reagent, indicator solution and the cylinder drain oil sample are placed into the corresponding chambers.

No further action is required: heating and evaluation of the cylinder lubricants will be automatically processed. While the chemical reaction occurs, the derived color of the liquids will be automatically assessed by means of the built-in chroma meter with LED transmitted light source. The degree of iron concentration ranging up to 1100 mg/kg will be shown on the display. The measured values will be then automatically saved on the internal memory chip.

Read the Material Safety Data Sheet before using this product.

For detailed information on safety and health, please refer to Material Safety Data Sheet and/or Product Label.