2. The Zematra SMS-2712-03
(Shell Spot Test Kit)

The Shell Spot Test Kit manufactured by Zematra is according to the Shell SMS-2712-03 method. This kit is also used to predict the stability of the residual fuel oil and to check the compatibility of the residual fuel oil with a blend stock. The Shell Spot Test is a complete self contained kit with stirrer, oven and filter unit.

ordercode 1001430

I. ZEMATRA SAMPLE UNITS

Every fuel or lube oil analysis is doomed to fail when the quality of the sample is doubtful. For this reason Zematra B.V. has developed 3 stainless steel sampling devices:

a. Fixed sampler mounted in the bunker line direct after the manifold
- **ordercode 1008001**
b. Sampler with spoolpiece (see picture) which can be mounted f.e. direct after manifold.
- **ordercode 1008002**
c. Portable Sampler fitted between bunker manifold flange and flange of the bunker hose - **ordercode 1008003**

J. ZEMATRA CARGO SAMPLING EQUIPMENT

Besides sampling equipment for fuel oil Zematra can supply you with all kind of different sampling equipment. For example the shown Liquid Bottom Sampler and the Sample Bottle holder. To obtain a small sample the Vampire vacuum pump is the most suitable option.

K. COMBINATION KITS FOR FUEL AND LUBRICATING OILS

For example this kit contains the following tests:
a. Viscosity by Falling Sphere
b. Viscotool or Visgage, viscosity comparison of lube oils
c. Watercontent of fuels and lube oils
d. Nature of water (salt or fresh)
e. Density
f. TAN either TBN (or both)
g. Compatibility/Stability (ASTM modified method D4740-95)
h. Pourpoint

ordercode 1001054

This kit is an example of the combinations possible, you want it different? We make it different.

Let us know your requirements and we will prepare a **CUSTOM MADE TEST KIT** which will meet all your specifications.

OTHER TESTS AVAILABLE:

Flashpoint
Insolubles (lubricating oil)
TAN Total Acid Number
TBN Total Base number
Bacterial
Nature of water
Shell Water Detector
Ferrous Debris
Boiler water
Cooling water
Chloride
Various Wall-Wash test kits:
* Hydrocarbons
* Acid-wash color test
* Permanganate time test

Total Oil & Grease in water. (Infrared using Hexane as extractant)
Soot Level in Diesel Engine Oils (Infrared system for used lube oils)

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Zematra

ON BOARD TEST EQUIPMENT FOR FUELS & LUBRICANTS FROM ZEMATRA bv

Zematra bv, established in 1983, has developed into a professional marketing organisation covering all facets of fuel/lube oil handling and testing. Because of the close link with the marine industry, Zematra supplies a wide range of equipment for use on board ships. Besides the available standard kits and cabinets Zematra can also produce custom made kits and cabinets.

A. CANNON-ZEMATRA MARINE FUELS VISCOMETER

ordercode 9725-F55

Easy to handle and easy to clean electronic viscometer

The Cannon-Zematra MFV (Marine Fuels Viscometer) covers a range from 30 cP up to 999 cP. FOUR different temperatures can be selected.

40, 50, 80 and 100°C

Temperature accuracy: approx. 0,1°C. Viscosity accuracy: approx. 5% (this is better then the reproducibility statement in ASTM D445 for dark fuels).

It is that simple... Fill the sample cup, place it in position, enter for Kinematic viscosity the density and press the RUN button. **From this point the unit is fully automatic. The first in marine industry**.

Viscosity will be displayed after ca. 12 minutes and if required the result can be printed. The unit switches itself OFF, only the result of the measurement will be displayed until a new sample is started.

B. VISCOSITY METER BY FALLING SPHERE METHOD

A very simple way to determine the dynamic viscosity of the fuel. Fill the tube for 3/4, add the calibrated (seize) stainless steel ball and top up with the fuel. Allow the ball to reach the lower end. Turn the meter upside down and measure the time that the ball (SPHERE) will take to reach the lower end of the calibrated distance. Multiply the measured time with the given calibaration factor and the Viscosity in centi Poise is found.

ordercode 1002054

C. VISCOSITY TESTS FOR LUBRICANTS

Zematra is offering two instruments for the determination of the viscosity of lube oils.

1. The "Visgage", a pocket viscosity comparator

The Visgage checks oil viscosity on site, without a thermometer or stopwatch. The Visgage can be used to check any oil from a light spindle oil to heavy gear oil. The principle of operation is simple. It is based on comparing the viscosity of an oil sample with an oil of known viscosity. The viscosity reading is made directly in Centistokes at 40°C, at room temperature 27°C. An accuracy of 95% or better is easily achieved when making tests with the Visgage. A careful operator in the field can test very accurate and much faster than most commercial laboratories, especially when results are needed immediately, like on board vessels.

ordercode 1002051 model 76 1002053 model 38

2. The Zematra "Viscotool"

The Zematra viscotool is a quick determination of your oil based on a comparison between a fresh oil and used oil. The result of the test will only tell you if the oil is diluted by fuel, either contaminated through wear particles or other sources.

ordercode 1002040

D. ZEMATRA WATER IN OIL TEST KIT

This test kit enables you to determine the percentage of water in your lube oil/fuel oil. The test is performed by means of the "Calcium Hydride Pressure Testvessel Method". The value obtained can be used as a check on the lube oil separator, any water leakages and operation contamination.
With the basic kit approx. 50 tests can be done.

The kit consists of:
- sturdy case
- reactionvessel with manometer and injectionvalve
- water test solution
- waterfree diluent
- magnetic stirrer
- 1 and 5 ml syringes

ordercode 1001100

E. ZEMATRA TBN TEST KIT

This test kit is specially developed to check the TBN value (alkalinity) of the engine's lubricating oil. The test is performed by means of a pressure testvessel. With the basic kit approx. 50 tests can be done.

The kit consists of:
- sturdy case
- reactionvessel with manometer and injectionvalve
- TBN test solution
- waterfree diluent
- magnetic stirrer
- 5 and 10 ml syringes

ordercode 1002300

F. ZEMATRA LUBE OIL TEST KIT

This test kit consists of five different tests which enables marine engineers to test engine oils, gear oils, hydraulic oils, etc. on board and in a relatively short time. The tests are simple and provide information on the most important parameters of used oils and the results obtained are a reliable source of information for the responsible engineer to judge the condition of the oil.

The five tests involved are:
* Viscosity
- check on 1. correct viscosity grade
2. fuel dilution
3. contamination

* TBN value
- check on 1. additive degradation
2. additive depletion
3. oilgrade

* Water content
- check on 1. water leakages lube oil separator
2. operation contamination

* Nature of water
- check on salt, brackish or fresh water

* Blottertest
- check on insoluble contaminants like soot and other combustion products

ordercode 1001050

G. THE ZEMATRA DENSITY TEST

Zematra manufactures a density unit which is fully in accordance with the specifications as mentioned in ASTM D1298 and IP 160. The sample is poured into a density tube and this tube is then placed in a thermostatic controlled heater column to heat up the sample to 50°C. After checking the temperature a hydrometer is placed in the sample. Together with the hydrometer reading and a graph, one can now determine the density of the sample (fuel oil or lube oil) at 15°C.

The density unit of Zematra consists of the following equipment:
- Density heater (thermostatic controlled heater column)
- ASTM 12C thermometer
- 4 hydrometers, range from 0,850 - 1.050 kg/cm^3
- 2 density tubes
- graph

* Also available without heater, for density measurements of light oils. The set consists of: A cardanic suspension device with glass insert and a set of hydrometers as well as an ASTM 12C thermometer.
ordercode 1001205

ordercode 1001200

H. COMPATIBILITY/STABILITY TEST

Zematra is offering two test sets to perform a compatibility/stability test.

1. The Zematra ASTM D4740-94 test set

This compatibility/stability test is a modified version of the ASTM D4740-94 method.
The test methods list two separate procedures for predicting stability of residual fuel oil and the compatibility of residual fuel oil with a blend stock.
The Zematra test set consists of the following equipment:
- sturdy case
- oven plus filterpaper holder
- magnetic stirrer plus heater
- Erlenmeyer 100 ml
- reference spot sheet ASTM D2781
- box of chromatographic paper
- electric digital thermometer
- pair of tweezers

ordercode 1001407