

COMPA DENS CHECK (IMPA: 65 28 23)

Density, Compatibility and Stability Determination - Triple Test Kit

The COMPA DENS CHECK integrates three important test methods (**density, compatibility and stability**) to assess the quality of various oil types upon delivery. As fuel is paid by weight and delivered in volume, the key parameter of oil to be checked is its density. The test kit enables the accurate density determination for light and heavy fuel oils as well as lubricant and hydraulic oils. Other significant parameters to be measured are stability/ compatibility of marine heavy fuel oil (high sulphur and low sulphur fuel oil) and marine gas oil (MGO) that are blended and used as bunker fuel. Due to incompatibility sludge formation can occur, and the normal engine operation can be put at risk. Consequently, the relevant compatibility/ stability test analysis provides clear evidence whether the oil samples can be mixed or not.



Features:

- Density
 - Measuring range: 0.82 - 1.05 g/ml
 - Measuring time: about 2 min.
 - Oil sample: 120 ml
 - Accuracy: +/- 3 %
- Stability/ Compatibility
 - Measuring range: all heavy fuels + MGO
 - Measuring time: about 20 min.
 - Oil sample: stability - 100 ml/ compatibility - 2 x 50 ml
 - Accuracy: go/ no go

Benefits:

- Quick and adjustable heating
- Accurate and reliable analyses
- 4 various hydrometers with automatically converted density value from 50°C to 15°C
- Directly observable test results
- Easy to handle even for untrained personnel

Density of the relevant oil sample is measured in a quick and simple test procedure. The glass tube filled with oil is placed in the heating bath and is heated up to 50 °C. Once the temperature is stable, the oil density can be assessed by employing the appropriate hydrometer. The obtained density value is automatically converted to standard temperature of 15 °C. When the exact density of the oil sample is determined, the actual weight of the bunker fuel can be calculated.

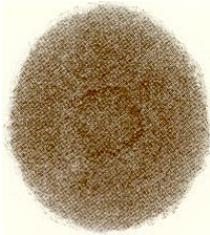
As the bunker fuel delivered on board contains a mixture of different fuel blends, it is necessary to check it for stability. It is important to identify whether asphaltene precipitations will occur because of the low aromaticity or solvent capacity of the fuel or not.

The following simple test method is developed to assess the compatibility/ stability of different bunker fuels before mixing them in the same tank. Two samples are mixed together and heated up to 95 °C in the heating bath. One drop of this heated mixture is applied on chromatographic SPOT TEST paper. As soon as the formed spot dries out, the end-result can be directly analyzed:



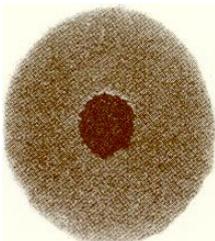
Homogeneous – no inner ring

- The oil samples are compatible and stable (no sludge detected)



Specified inner ring

- Incompatible parts are determined and sludge formations occur



Dark inner ring

- The oil samples are incompatible / instable as the high amount of sludge is observable

This test method applied by COMPA DENS CHECK follows ASTM D 4740-04 (2014).