



TEST METHOD FOR DETERMINATION OF LUBRICANTS SPECIFIC GRAVITY (CUP METHOD)

Application

This method is for the determination of the Specific Gravity (SG) of grease. This method is based on GKN 311450 and adopted by Ford in Brazil.

Definition

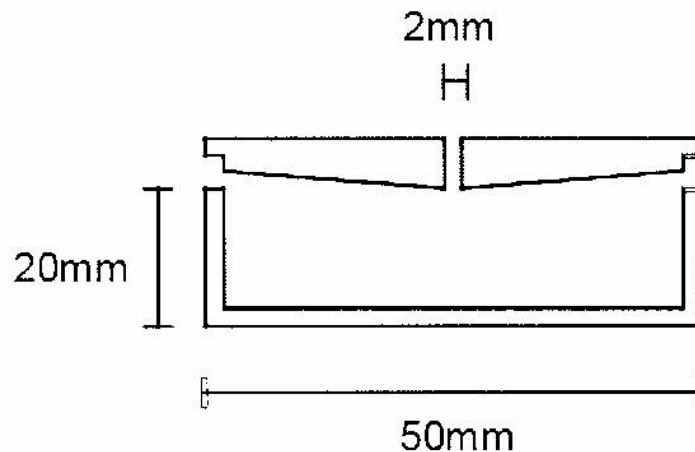
Specific Gravity (relative density) of grease is defined as the ratio of a given volume of grease at a given temperature to the mass of an equal volume of water at the same temperature.

Apparatus Required

Specific Gravity (SG) Cup and Lid conforming to the dimensions given in figure 1. It can be manufactured from aluminium or stainless steel.

Spatula, with flat sufficient to level off the grease in the cup.

Top Pan Balance (4 figure, capacity 200g).



Date	Action	Revisions
2007 06 07	Activated	





Procedure

The test should be performed at 20 °C if working to set parameters, otherwise a temperature of 15 °C to 30 °C is acceptable.

Weight the SG cup and record the result (A).

Using a spatula, charge the SG cup with the test grease, periodically jarring the cup in order to drive out trapped air.

Overfill the cup slightly and scrape off the excess grease extending above the rim by drawing the blade of the spatula across it.

Place the lid onto the cup and gently push down, thus forcing excess grease out of the side of the cup and through the hole in the lid.

Ensure all excess grease has escaped, then wipe clean.

Weigh the SG cup + grease (B).

Calculation:

Apply the following calculation to determine the SG of the test grease:

$$\text{SG of test grease} = \text{Weight of grease (B - A)} \times \text{Cup Constant}$$

Note: For this method a cup constant must be calculated. This is done by first determining the weight of water (with known SG) required to fill the cup and by then applying the following:

$$\text{Cup Constant} = \frac{\text{SG Water}}{\text{Wt. Water}} \times 100$$

Expression of Results

Two determinations should be carried out in order to obtain an average result.

The result should be considered suspect if the difference between two determinations > 0.5%.

Report results to two decimal places.

Precision and Bias:

At this time the precision of the method has not been established.

Note: This method does not take into account the air buoyancy correction which for an SG of 0.90 is 0.00012 and can therefore be considered negligible.