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Calcimeter

Part No. 152-95

Instruction Manual

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Ver. 3.1

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Intro

The OFITE Calcimeter is used to determine the amount of Calcium Carbonate (CaCO_3) and Magnesium Carbonate (Dolomite) in a sample of alkaline earth carbonates such as oil well cores or drilled cuttings. Calcite build up in drilling fluids and in water treatment processes causes scaling problems. Data from the OFITE Calcimeter can help determine the proper chemical treatment.

This instrument complies with the ASTM D 4373 - 84 (Reapproved 1990) Standard Test Method for Calcium Carbonate Content in Soils. This test method is under the jurisdiction of ASTM Committee D-18 on Soil and Rock and is the direct responsibility of Subcommittee D -18.13 on Marine Geotechnics, published July 1984.

Description

In the OFITE Calcimeter, calcium carbonate and magnesium carbonate are reacted with 10 percent hydrochloric acid in a sealed reaction cell to form CO_2 . As the CO_2 is released, the pressure build up is measured using either a pressure gauge or a pressure recorder. During the calibration process, a calibration curve is created by reacting HCl with pure, reagent-grade CaCO_3 . By using a known weight of CaCO_3 reagent, you can determine the relationship between the amount of pressure released and the weight of CaCO_3 in the sample. Since all reaction cells are slightly different, this relationship will be different for each cell. Therefore a calibration curve is required to obtain accurate results.

The calcium carbonate content of soil (ASTM Procedure D 4373) is determined by treating a 1 g dried soil specimen with HCl in the reactor cell. The resulting pressure increase is then measured and compared to the calibration curve to determine the total weight of CaCO_3 in the test sample.

Components

#142-54	O-ring for Bleed-Off Screw
#152-95-1	Gauge with Cover, 30 PSI, 4" Diameter
#152-95-2	Bleed-Off Screw
#152-95-3	Cell Cap
#152-95-4	Reaction Cell
#152-95-5	O-ring for Cap
#152-95-6	Sample Cup

Optional:

#152-96-6	Mortar, 65 mL, Porcelain
#152-96-7	Pestle, Porcelain
#153-02	Brush, Graduate, 1.5" × 10.75"
#153-18	Graduated Cylinder, 10 mL × .2 mL, Glass
#153-55	Stopcock Grease, Silicone
#166-03	Hand-held Balance, 0 - 320 g × .1 g
#275-03	Hydrochloric Acid, 10%, 8 oz UN 1789
#285-00-1	Calcium Carbonate, 100 g