Le Chatelier Flask

LT-CE0061 | Density measurement by liquid displacement

Glass body • Two volume readings • Mass / volume calculation



0.1 ml

GRADUATION INTERVAL

Dual scale

0-1 ml AND 18-24 ml

ASTM C188 • AASHTO T 133 | Hydraulic cement density

LT-CE0061

Photograph and Measuring Components

Glass stopper, upper neck, intermediate bulb and lower flask body

The Le Chatelier flask measures the liquid volume change caused by a weighed cement sample. The difference between initial and final readings gives the sample volume used in the density calculation.

GLASS STOPPER

Close the flask after adding the sample. Follow the method when moving the flask to release trapped air.

UPPER NECK

Read the final volume at the upper measuring region after the sample has been added.



LOWER NECK

Read the initial liquid level at the lower measuring region. Observe the meniscus at eye level.

FLASK BODY

The liquid and sample occupy the main body. Prepare a clean, dry flask before testing.



Upper neck and glass stopper region



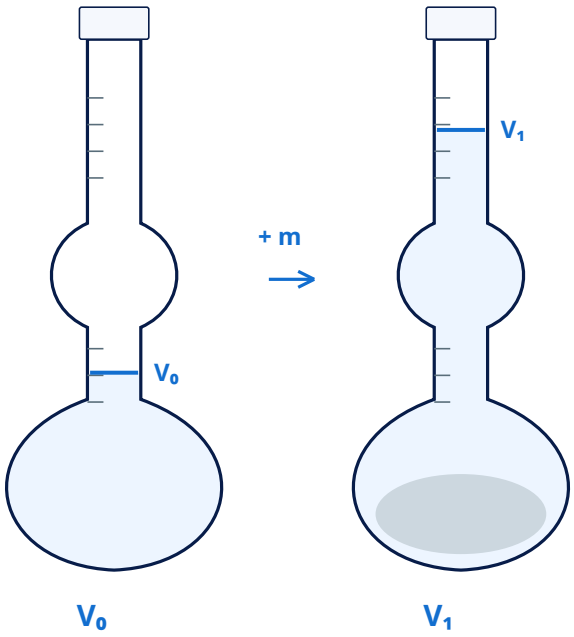
Intermediate bulb and lower neck region

LT-CE0061

From Volume Difference to Density

Read initial volume • Add weighed sample • Read final volume and calculate

INITIAL READING V_0 • FINAL READING V_1



DISPLACED VOLUME: $\Delta V = V_1 - V_0$

DENSITY: $\rho = m / \Delta V$

m: SAMPLE MASS • ρ: g/cm³ • 1 ml = 1 cm³ • NOT TO SCALE

Record Initial Volume

Fill with suitable liquid to the lower scale range. Take initial reading V_0 after temperature equilibration.

Add the Sample

Add weighed cement in small increments. Use the method movement to remove air bubbles.

Read Final Volume and Calculate

Take V_1 after temperature equilibration. Divide sample mass by displaced volume to calculate density.

Take initial and final readings under the same temperature conditions. Particles left in the neck and trapped air can affect the measured volume. Use the actual sample mass introduced during the test for the density calculation.

Meniscus and Temperature Control

ASTM C188 uses water-free kerosene or suitable naphtha. Take initial and final readings after the flask has reached temperature equilibrium in a water bath.

Read the liquid level at eye height. Add cement in small increments; prevent accumulation in the neck and remove air bubbles.

Density and Relative Density

With m in grams and ΔV in millilitres, density is expressed in g/cm³. Record sample identification, liquid, temperature and volume readings together.

Relative density is dimensionless: the ratio of density to the reference water density specified by the method. ASTM C188 and AASHTO T 133 are method references for hydraulic cement density.

LT-CE0061

Technical Specifications and Measuring Data

LT-CE0061 • Glass body, graduated ranges and volume calculation

Parameter	Technical Information
Product Code	LT-CE0061
Product Name	Le Chatelier Flask
Body Material	Borosilicate glass
Lower Graduated Range	0-1 ml
Upper Graduated Range	18-24 ml
Graduation Interval	0.1 ml
External Dimensions	10 × 10 × 30 cm
Weight	0.1 kg
Measurement Principle	Liquid displacement
Volume Calculation	$\Delta V = V_1 - V_0$
Density Calculation	$\rho = m / \Delta V$
Method References	ASTM C188; AASHTO T 133

Clean Glass, Air Removal and Consistent Readings

Take readings under the same temperature conditions. Record sample mass and both volumes; remove trapped air according to the method.

From Weighed Cement to Density Result

01
Prepare
Prepare clean flask and suitable liquid.

02
Initial Read
Take V_0 after temperature equilibration.

03
Add Sample
Add weighed cement and remove trapped air.

04
Calculate
Read V_1; report the $m / \Delta V$ result.

Product Page | liyatest.com.tr/en/urun/le-chatelier-flask/