

## LACTOMETERS — SPECIFICATION : IS 9585 : 2021

*A lactometer is a scientific instrument used to measure the specific gravity (density) of milk. It helps determine the milk's purity, fat content, and overall quality. The principle behind its operation is that pure milk has a specific gravity (density) close to 1.030, and the density of milk changes depending on its composition, including water content, fat content, and the presence of impurities.*

*A lactometer is usually a glass tube with a scale printed on it. When placed in a sample of milk, it floats to a certain level, and the level it reaches corresponds to the density of the milk.*

*If the milk has a lower density (indicating it may be watered down or diluted), the lactometer will float higher.*

*Conversely, if the milk is richer in fat or solids, the lactometer will float lower.*

*Some of the uses of Lactometers are in Milk Quality Testing: Dairy farmers and processors use lactometers to assess whether milk is adulterated with water or other substances.*

*Fat Content Estimation: Although lactometers don't directly measure fat content, they can give an indication of it since milk with higher fat content tends to have a lower density.*

*The Indian Standard IS 9585:2021 specifies the requirements for lactometers used to measure the specific gravity of milk, with a range from 1.020 to 1.035 at a temperature of 27°C. The lactometers are calibrated for a liquid medium with a surface tension of 50 m N/m, as determined by the Drop Method. Key technical details include a stem diameter of approximately 4.0mm, a bulb diameter of 22±1mm, and a scale length of 41±4mm. The instrument requires about 200ml of milk for testing and features 30 subdivisions on its scale, with each sub-division representing 0.0005 specific gravity units.*

*The permissible error at any point is ±0.0005. The standard also specifies that readings should be taken at the top of the meniscus and includes requirements for scale markings, inscriptions, and testing procedures. The lactometer should be used in cylindrical vessels with specific dimensions (32±2 mm internal diameter, 185±5 mm depth). The standard also outlines specifications for the construction material, scale markings, necessary inscriptions, and testing procedures to ensure the accuracy and reliability of the lactometers in practical applications.*