

Lactose

Cat. 1902

Ingredients (Carbohydrates and Glycosides)

Practical information

Applications	Categories
Carbon source	General use

Industry: Ingredients for culture media / Manufacturing process

Principles and uses

Lactose is a disaccharide composed of the monosaccharides glucose and galactose, and it is synthesized only by the cells of the lactating mammary gland. Its empirical formula is C₁₂H₂₂O₁₁. Lactose is one of the three major solid components of milk and its only carbohydrate.

Lactose is used in microbiology as a source of carbon and energy, and also allows differentiating bacteria that can ferment lactose from non-fermenting lactose bacteria. Lactose utilization is the primary function of lactic acid bacteria used in industrial dairy fermentation.

Disaccharides are sweet, water soluble and crystalline. This disaccharide, along with dextrose, constitute the most commonly used carbohydrates used in biology today.

Physical-chemical characteristics

Description	Specification
Loss on drying	max. 0,5%
Appearance	White, crystalline powder
Identification	Complies with Pharmacopoeia
Specific optical rotation	+54,4° to +55,9°
Heavy metals	<5 ppm
Appearance of solution	Clear and not more coloured than ref.BY7
Sulfated ash	max.0,1%
Water (KF)	4,5%-5,5%
Absorbance: proteins and light-absorbing impurities [A], 1%, 1 cm at 400 nm	<0,04
Absorbance: proteins and light-absorbing impurities, [A] 1%, 1 cm at 210 to 220 nm	<0,25
Absorbance: proteins and light-absorbing impurities, [A] 1%, 1 cm at 270 to 300 nm	<0,07
Acidity or alkalinity	<0,4 ml NaOH 0,1M
Particle size distribution %<45 µm	<50
Particle size distribution %<100 µm	>70
Particle size distribution %<150 µm	>85
Particle size distribution %<315 µm	>97
Solubility	Freely soluble in water

Microbiological test

Description	Specification
Total aerobic microbial count	max. 100 CFU/g
Salmonella in 1 g	Neg.
Escherichia coli in 1g	Neg.
Total yeast and moulds count	max. 50 CFU/g

Storage

Temp. Min.:2 °C
Temp. Max.:25 °C