Maltogenase® L

Description
Maltogenase is a heat-stable maltogenic alpha-amylase from Bacillus stearothermophilus expressed in and produced by a genetically modified strain of Bacillus subtilis.

Product Properties

Appearance
Maltogenase L is a dark brown liquid with a density of approx. 1.25 g/ml.

Product type
Maltogenase L  Declared activity.....................3200 MANU/g

Activity
A Maltogenic Amylase Novo Unit (MANU) is defined as the amount of enzyme which under standard conditions hydrolyzes 1 micromole of maltotriose per minute. See the Analytical Method for further information.

Food-grade status
Maltogenase L complies with FAO/WHO JECFA and FCC recommended purity specifications.

Standard Packaging
See the standard Packaging List for more packaging information.

Application
The enzyme will hydrolyze 1,4-alpha-glucosidic linkages in starch, partially hydrolyzed starch and low-molecular weight oligosaccharides, including maltotriose. Maltose units are removed in a stepwise manner from the non-reducing chain ends. The maltose released has the alpha-configuration.

The enzyme may be used alone or together with an amylpectin-debranching enzyme for the production of high maltose syrups. As Maltogenase L is able to hydrolyze maltotriose, some D-glucose is formed.

For industrial application, the recommended operating conditions are 60°C (140°F) and pH 5.0-5.5.
Reaction Parameters

Fig. 1. The effect of temperature on Maltogenase activity.
Substrate: 1% w/v maltotriose (Sigma M 8398), 0.05 M citrate buffer, pH 5
Reaction time: 30 minutes

Fig. 2. The effect of pH on Maltogenase activity.
Substrate: 1% w/v maltotriose (Sigma M 8378), 0.05 M citrate or acetate buffer, 37°C (99°F)
Reaction time: 30 minutes

Safety
Enzymes are proteins and inhalation of dust or aerosols may induce sensitization and may cause allergic reactions in sensitized individuals.
Some enzymes may irritate the skin, eyes and mucous membranes upon prolonged contact.
The product may create easily inhaled aerosols if splashed or vigorously stirred.
Spilled product may dry out and create dust.
Spilled material should be flushed away with water (avoid splashing).
Left-over material may dry out and create dust.
A Material Safety Data Sheet is supplied with all products. See the Safety Manual for further information regarding how to handle the product safely.
Storage

Recommended storage conditions are 0-10 °C (32-50 °F) / 0-25 °C (32-77°F) in unbroken packaging and protected from the sun. The product has been formulated for optimal stability. However, enzymes gradually lose activity over time. Extended storage or adverse conditions such as higher temperature, may lead to a higher dosage requirement.