3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

# ProductInformation

**D-(+)-Maltose monohydrate**
**Cell Culture Tetsted**

Product Number **M 5895**
Store at Room Temperature

## Product Description

Molecular Formula: $C_{12}H_{22}O_{11} \cdot H_2O$
Molecular Weight: 360.3
CAS Number: 6363-53-7
Melting point: 102-103 °C[1,2]
Specific Rotation: +130.4° ± 1.3°
(40 mg/ml $H_2O$, 20 °C) calculated on the basis of the monohydrate.[1,3]
Synonyms: 4-O-α-D-Glucopyranosyl-D-glucose, malt sugar, maltobiose[1]

This product is both mammalian cell culture tested and insect cell culture tested at 2.0 g per liter and is appropriate for use in these cell culture applications.

Maltose is a component of starch and glycogen. It is a sugar composed of 2 α-D-glucose molecules[4] coupled by an α(1→4) glycosidic bond. It is a reducing sugar with one anomeric carbon not linked in an anomeric bond. It contains a hemiacetal function and can mutarotate. Maltose is one product generated from starch and glycogen by the action of α-amylase.[5] Maltose can be further hydrolyzed to glucose by the action of α-glucosidase (maltase), an enzyme commonly found in yeast[6] and many other sources.[7] It is called malt sugar when it is formed in fermenting grains during the production of alcoholic beverages.

Maltose is used as a sweetener with about one-third the sweetness of sucrose and as a nutrient in culture media. It is used in pharmaceutical formulations and as a parenteral supplement of sugar for diabetics.[1] It is easily digested by humans.

Maltose is also available as the following products:
M 5885 From potato.
M 9171 SigmaUltra tested for trace elements.
M 2250 Minimum 95% purity.

## Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

## Preparation Instructions

This product is soluble in water (50 mg per ml).

## References

1. The Merck Index, 11th Ed., Entry# 5536.
2. CRC Handbook of Chemistry and Physics, 74th Ed., Lide, D.R., ed., CRC Press (Boca Raton, FL: 1993), p. 3-314.
3. Specifications and Criteria for Biochemical Compounds, 3rd Ed., National Research Council, National Academy Press (Washington, DC: 1972), p. 43.
4. The Condensed Chemical Dictionary, 8th Ed., G. G. Hawley, ed., Van Nostrand Reinhold Co., 1971, page 539.
5. Bernfeld, P., Meth. Enzymol., **1**, 149-158 (1955).
6. Halvorson, H., Meth. Enzymol., **8**, 559 (1966).
7. Schomberg, D. and Salzmann, M., Enzyme Handbook, Vol. 4 (1991), α-glycosidase 3.2.1.20.

RLG/JRC 11/03