

Hydroxypropylmethylcellulose (E464) Methylcellulose B

Culinary data

Methylcellulose A, used preferably at a rate of 1g for 100g of final preparation or less, is a thickener.

To prepare foams with a texture similar to this of whipped egg white.



Technological data

Dissolution

To dissolve methylcellulose B, it is recommended to blend thoroughly at room temperature, or at elevated temperature and keep stirring while allowing to cool down to room temperature. The preparations are made viscous by the presence of polymer chains: it is the thickening effect.

The amount usually used ranges from 0.2 to 1g for 100g of final preparation.

Sensory characteristics

Light wood taste

Influence of the acidity

Methylcellulose B is little sensitive to the pH, and enables to work with pH ranging from 2 to 13.

Storage

Maximal temperature 25°C

Air moisture < 60%.

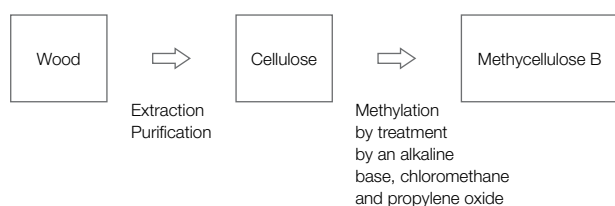
Toxicological data

- No acceptable daily intake level.
- The dose used should not exceed the required quantity in order to achieve the desired effect.
- Methylcellulose B, as cellulose, is not digested by humans that have not the necessary enzyme, and plays therefore the role of alimentary fibre.

Scientific data

Origin

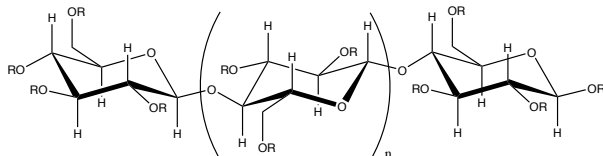
Cellulose is the most abundant polymer on Earth's surface. It is the main material used by plants to form their rigid structure. Cellulose is one of the constituent of wood, for example. Methylcellulose B (or hydroxypropyl-methylcellulose) is obtained by a chemical modification of cellulose.



Chemical composition

Methylcellulose B is obtained by treating cellulose with an alkaline base, chloromethane and propylene oxide. Methylcellulose B is therefore a polymer (long molecules made by attaching one after the other a large number from one or several small molecules). Part of its hydroxyl groups is alkylated. This modification makes the methylcellulose B soluble in water.

Structure of methyl cellulose B



R = CH₃ ou CH₂CH(OH)CH₃
in approx 2/3 of the case, H otherwise

The solubility of the methylcellulose B in water decreases as the temperature increases.

Information from:

- Beltz H.-D., Grosch W., Schieberle P., *Food Chemistry*, 3rd Edition, Springer, **2004**, 331.
- Takahashi M., Shimazaki M., *J. Polym. Sci., Part B: Polym. Phys.* **2001**, 39, 943-946. *Formation of Junction Zones in Thermoreversible Methylcellulose Gels.*