

87108 Menthol

Menthol (menthanol-3), 1-methyl-4-isopropyl-cyclohexanol-(3) (C₁₀H₂₀O)

Menthol is the natural main product of the peppermint oil. Similar to natural camphene, it is present in the optically active form. Menthol can also be produced synthetically in which case it is then a racemic product. It is a terpene of the methane family and it has an OH-group at C-3. Racemic menthol has a melting point of 31-35°C and a boiling point of 216°C. It is not easily soluble in water (0.400 mg/l), however it is readily soluble in many organic solvents such as alcohols, ethers, etc..

The secondary OH-group at C-3 causes the molecule to be sensitive to acids under certain circumstances, since a double-bond can be formed if water is split off. For this reason, it has to be taken care that no acid conditions are present in or at the object. The most outstanding property of menthol is its extremely good film formation ability.

Application

Menthol is used as a protection of objects during their transportation. Due to its good pasting ability, menthol is especially suitable for laminations. A film thickness of about 500 µ is sufficient to guarantee a stability of two weeks. For this purpose a saturated solution of menthol in pentane is prepared.

Menthol is also used in cleaning water-sensitive surfaces or in partial cleaning, etc. A protective film of menthol is suitable during renovation measures to protect against all kinds of contaminations (i.e. paint, mortar, etc.). Menthol is applied as a molten bath by means of a hot spraying apparatus.

Toxicity

Menthol is considered to be non-toxic. It has however a high inflammability and explosion risk in closed rooms which are not sufficiently ventilated.

Product Specification

Parameter	Specification
Appearance	Prismatic or acicular, colorless, shiny crystals
Solubility	Practically insoluble in water, very soluble in alcohol, in ether or in light petroleum, freely soluble in fatty oils and in liquid paraffin, very slightly soluble in glycerol.
Identification	Passes test A and C (GC)
Melting range	41 – 44°C
Appearance of solution	Clear and colorless
Acidity or alkalinity	Passes test
Specific rotation	-48 to -51°
Related substances (GC)	Passes test
Residue on evaporation	Max. 0.05%
Chromatographic purity (GC)	Passes test