



Edition: BP 2025 (Ph. Eur. 11.6 update)

Macrogol 6 Glycerol Caprylocaprate



[General Notices](#)

(Ph. Eur. monograph 1443)

Action and use

Non-ionic surfactant.

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DEFINITION

Mixture of mainly mono- and diesters of polyoxyethylene glycerol ethers mainly with caprylic (octanoic) and capric (decanoic) acids. The average number of moles of ethylene oxide reacted per mole of substance is 6.

Macrogol 6 glycerol caprylocaprate may be obtained by ethoxylation of glycerol and esterification with distilled coconut or palm kernel fatty acids, or by ethoxylation of mono- and diglycerides of caprylic and capric acids.

CHARACTERS

Appearance

Pale yellow liquid.

Solubility

Partly soluble in water, freely soluble in castor oil, in glycerol, in isopropanol and in propylene glycol.

[Viscosity](#)

About 145 mPa·s.

IDENTIFICATION

A. Dissolve 1.0 g in 99 g of a mixture of 10 volumes of [2-propanol R](#) and 90 volumes of [water R](#). Heat the solution obtained to about 40 °C. A turbidity is produced. Allow to cool until the turbidity disappears. The cloud point is between 15 °C and 35 °C.

- B. Saponification value (see Tests).
- C. Composition of fatty acids (see Tests).

TESTS

Appearance

The substance to be examined is clear ([2.2.1](#)) and not more intensely coloured than reference solution Y₂ ([2.2.2, Method I](#)).

Alkalinity

Dissolve 2.0 g in a hot mixture of 10 mL of [ethanol \(96 per cent\) R](#) and 10 mL of [water R](#). Add 0.1 mL of [bromothymol blue solution R1](#). Not more than 0.5 mL of [0.1 M hydrochloric acid](#) is required to change the colour of the indicator to yellow.

Acid value ([2.5.1](#))

Maximum 5.0, determined on 5.0 g.

Hydroxyl value ([2.5.3, Method A](#))

165 to 225.

Saponification value ([2.5.6](#))

85 to 105, determined on 2.0 g.

Composition of fatty acids

Gas chromatography ([2.4.22, Method A](#)).

Composition of the fatty-acid fraction of the substance:

- [caproic acid](#): maximum 2.0 per cent;
- [caprylic acid](#): 50.0 per cent to 80.0 per cent;
- [capric acid](#): 20.0 per cent to 50.0 per cent;
- [lauric acid](#): maximum 3.0 per cent;
- [myristic acid](#): maximum 1.0 per cent.

Ethylene oxide and dioxan ([2.4.25](#))

Maximum 1 ppm of ethylene oxide and maximum 10 ppm of dioxan.

Water ([2.5.12](#))

Maximum 1.0 per cent, determined on 1.00 g.

Total ash (2.4.16)

Maximum 0.3 per cent.

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