



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

Macrogol 20 Glycerol Monostearate



[General Notices](#)

(Ph. Eur. monograph 2044)

Action and use

Non-ionic surfactant.

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DEFINITION

Macrogol 20 glycerol monostearate is obtained by ethoxylation with ethylene oxide of different types of glycerol stearates, mainly [Glycerol monostearate 40-55 \(0495\)](#). The number of moles of ethylene oxide reacted per mole of glycerol stearate is 20 (nominal value).

CHARACTERS

Appearance

Pale yellow, oily liquid or gel.

Solubility

Soluble in water at 40 °C and above and in ethanol (96 per cent), practically insoluble in light liquid paraffin and in fatty oils.

[Relative density](#)

About 1.07.

IDENTIFICATION

- Hydroxyl value (see Tests).
- Saponification value (see Tests).
- Composition of fatty acids (see Tests).
- Place 1 g in a test tube and add 0.1 mL of [sulfuric acid R](#). Heat the tube until white fumes appear. The fumes turn filter paper impregnated with [alkaline potassium tetraiodomercurate solution R](#) black.

TESTS

Acid value (2.5.1)

Maximum 2.0, determined on 5.0 g.

Hydroxyl value (2.5.3, Method A)

65 to 85, determined on 0.350 g.

Iodine value (2.5.4, Method A)

Maximum 2.0.

Peroxide value (2.5.5, Method A)

Maximum 6.0.

Saponification value (2.5.6)

40 to 60.

Composition of fatty acids

Gas chromatography (2.4.22, Method C).

Composition of the fatty-acid fraction of the substance:

Type of macrogol 20 glycerol monostearate	Type of glycerol stearate used	Composition of fatty acids
Type I	Type I (obtained using stearic acid 50)	<u>Stearic acid</u> : 40.0 per cent to 60.0 per cent, <i>Sum of the contents of palmitic and stearic acids</i> : minimum 90.0 per cent.
Type II	Type II (obtained using stearic acid 70)	<u>Stearic acid</u> : 60.0 per cent to 80.0 per cent, <i>Sum of the contents of palmitic and stearic acids</i> : minimum 90.0 per cent.
Type III	Type III (obtained using stearic acid 95)	<u>Stearic acid</u> : 90.0 per cent to 99.0 per cent, <i>Sum of the contents of palmitic and stearic acids</i> : minimum 96.0 per cent.

Ethylene oxide and dioxan (2.4.25, Method A)

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

Water (2.5.12)

Maximum 3.0 per cent, determined on 1.00 g.

Total ash (2.4.16)

Maximum 0.2 per cent.

STORAGE

Protected from light.

LABELLING

The label states the type of macrogol 20 glycerol monostearate.

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