POLYOXYETHYLENE (8) STEARATE

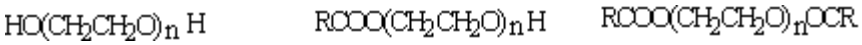
Prepared at the 17th JECFA (1973), published in FNP 4 (1978) and in FNP 52 (1992). Metals and arsenic specifications revised at the 55th JECFA (2000). An ADI of 0-25 mg/kg bw was established at the 17th JECFA (1973)

SYNONYMS Polyoxyl (8) stearate; INS No. 430

DEFINITION Consists of a mixture of the mono- and diesters of edible commercial stearic acid and mixed polyoxyethylene diols (having an average polymer length of about 7.5 oxyethylene units) together with free polyol.

C.A.S. number 9004-99-3

Structural formula Nominal formula and approximate composition:



free polyol monoester diester

where RCO- is the fatty acid moiety, and "n" has an average value of approximately 7.5. The distribution of polymers is approximately in accordance with the Poisson expression.

Assay Not less than 53.0 and not more than 57.0% of oxyethylene groups equivalent to not less than 96.0 and not more than 103.0% of polyoxyethylene (8) stearate calculated on the anhydrous basis.

DESCRIPTION Cream-coloured, soft, waxy or pasty solid at 25°, with a faint fatty odour

FUNCTIONAL USES Emulsifier

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4) Soluble in ethanol, methanol, acetone, ether, ethyl acetate and dioxane; dispersible in warm water; soluble with haze in mineral oil

Congealing range (Vol. 4) 27 - 29°

Infrared absorption The infrared spectrum of the sample is characteristic of a partial fatty acid ester of a polyoxyethylated polyol

Colour reaction To 5 ml of a 5% (w/v) aqueous solution of the sample add 10 ml of ammonium cobaltothiocyanate solution and 5 ml of chloroform, shake well and allow to separate; a blue colour is produced in the chloroform layer. (Ammonium cobaltothiocyanate solution: 37.5 g of cobalt nitrate and 150 g of ammonium thiocyanate made up to 100 ml with water - freshly prepared).

Saponification (Vol. 4) 100 g of the sample yields approximately 44 g of fatty acids and 59 g of polyols

PURITY

Water (Vol. 4)	Not more than 3% (Karl Fischer Method)
Acid value (Vol. 4)	Not more than 2
Saponification value (Vol. 4)	Not less than 87 and not more than 97
Hydroxyl value (Vol. 4)	Not less than 85 and not more than 100
Lead (Vol. 4)	Not more than 2 mg/kg Determine using an atomic absorption technique appropriate to the specified level. The selection of sample size and method of sample preparation may be based on the principles of the method described in Volume 4, “Instrumental Methods.”
METHOD OF ASSAY	Determine the content of *Oxyethylene groups*.