

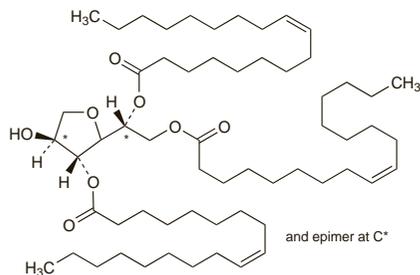
**Sorbitan Trioleate** (BAN, USAN, rINN)

Sorbitaantrioloaatti; Sorbitan, trioléate de; Sorbitani trioleas; Sorbitano trioleatas; Sorbitantrioloat; Sorbitan-trioleát; Szorbitán-trioleát; Trioleato de sorbitán.

Сорбитана Триолеат

$C_{60}H_{108}O_8$  (approximate).

CAS — 26266-58-0.



**Pharmacopoeias.** In *Eur.* (see p.vii). Also in *USNF*.

**Ph. Eur. 6.2** (Sorbitan Trioleate). A mixture usually obtained by esterification of 1 mole of sorbitol and its mono- and di-anhydrides per 3 moles of oleic acid. A suitable antioxidant may be added. A pale yellow, light yellowish or brown solid which becomes a brownish-yellow, viscous, oily liquid at about 25°. Relative density about 0.98. Practically insoluble but dispersible in water; slightly soluble in alcohol; soluble in fatty oils. Protect from light.

**USNF 26** (Sorbitan Trioleate). A tri-ester of sorbitol and its mono- and di-anhydrides with oleic acid. A yellow to amber-coloured, oily liquid. Insoluble in water, in ethylene glycol, and in propylene glycol; soluble in alcohol, in isopropyl alcohol, in methyl alcohol, in maize oil, in cottonseed oil, and in liquid paraffin. Store in airtight containers.

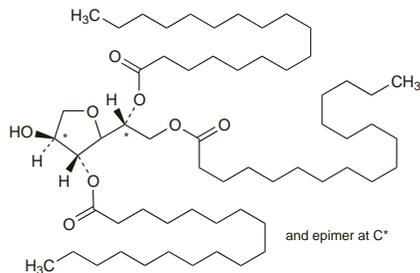
**Sorbitan Tristearate** (BAN, USAN, rINN)

E492; Sorbitan, Tristéarate de; Sorbitani Tristearas; Triestearato de sorbitán.

Сорбитана Тристеарат

$C_{60}H_{114}O_8$  (approximate).

CAS — 26658-19-5.



**Description.** A mixture of the partial tri-esters of sorbitol and its mono- and di-anhydrides with stearic acid.

**Adverse Effects**

There have been occasional reports of hypersensitive skin reactions after the topical application of creams containing sorbitan esters.

**Hypersensitivity. References.**

1. Finn OA, Forsyth A. Contact dermatitis due to sorbitan monoaurate. *Contact Dermatitis* 1975; **1**: 318.
2. Hannuksela M, *et al.* Allergy to ingredients of vehicles. *Contact Dermatitis* 1976; **2**: 105–10.
3. Austad J. Allergic contact dermatitis to sorbitan monooleate (Span 80). *Contact Dermatitis* 1982; **8**: 426–7.
4. Boyle J, Kennedy CTC. Contact urticaria and dermatitis to Al-phaderm. *Contact Dermatitis* 1984; **10**: 178.
5. Hardy MP, Maibach HI. Contact urticaria syndrome from sorbitan sesquioleate in a corticosteroid ointment. *Contact Dermatitis* 1995; **32**: 114.
6. Wakelin SH, *et al.* Sorbitan mono-oleate: a potential allergen in paste bandages. *Contact Dermatitis* 1996; **35**: 377.
7. de Waard-van der Spek FB, *et al.* Allergic contact dermatitis to sorbitan sesquioleate in Adaptic wound dressing. *Contact Dermatitis* 2007; **57**: 54–6.

**Uses**

Sorbitan esters are lipophilic nonionic surfactants that are used as emulsifying agents in the preparation of emulsions, creams, and ointments for pharmaceutical and cosmetic use. When used alone they produce stable water-in-oil emulsions but they are frequently used with a polysorbate in varying proportions to produce water-in-oil or oil-in-water emulsions or creams with a variety of different textures and consistencies. Sorbitan esters are also used as emulsifiers and stabilisers in food.

**Sucrose Esters**

E473 (sucrose esters of fatty acids); Sacarosa, ésteres de; Sacchari monopalmitas (sucrose monopalmitate); Sacchari monostearas (sucrose monostearate); Saccharose, monopalmitate de (sucrose monopalmitate); Saccharose, monostéarate de (sucrose monostearate); Sucroésteres.

Эфиры Сахарозы

**Pharmacopoeias.** *Eur.* (p.vii) includes Sucrose Monopalmitate and Sucrose Stearate.

**Ph. Eur. 6.2** (Sucrose Monopalmitate). A mixture of sucrose monoesters, mainly sucrose monopalmitate, obtained by transesterification of palmitic acid methyl esters of vegetable origin with sucrose. It contains 55.0% monoesters, a maximum 40.0% diesters, and a maximum of 20.0% for the sum of triesters and polyesters. A white or almost white, unctuous powder. Very slightly soluble in water; sparingly soluble in alcohol. Protect from humidity.

**Ph. Eur. 6.2** (Sucrose Stearate). A mixture of sucrose esters, mainly sucrose stearate, obtained by transesterification of stearic acid methyl esters of vegetable origin with sucrose. Sucrose stearate type I contains a minimum 50.0% monoesters, a maximum 40.0% diesters, and a maximum of 25.0% for the sum of triesters and polyesters. Sucrose stearate type II contains 20.0 to 45.0% monoesters, 30.0 to 40.0% diesters, and a maximum of 30.0% for the sum of triesters and polyesters. A white or almost white, unctuous powder. Very slightly soluble in water; sparingly soluble in alcohol. Protect from humidity.

**Profile**

Sucrose esters are nonionic compounds with surface-active properties produced by esterification of 1 or more hydroxyl groups in sucrose with a fatty acid such as stearic or palmitic acid. Commercial sucrose esters are mixtures of the mono-, di-, and tri-esters of palmitic and stearic acids with sucrose; various grades are available. Sucrose esters are used as dispersing, emulsifying, and stabilising agents in food and cosmetic preparations.

**Tyloxapol** (BAN, USAN, rINN)

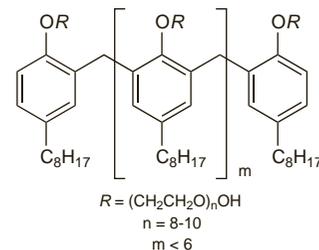
Superinone; Tiloxapol; Tyloksapoli; Tyloxapolum.

Тилоксапол

CAS — 25301-02-4.

ATC — R05CA01.

ATC Vet — QR05CA01.



**Pharmacopoeias.** In *US*.

**USP 31** (Tyloxapol). A polymer of 4-(1,1,3,3-tetramethylbutyl)phenol with ethylene oxide and formaldehyde. A viscous amber liquid, sometimes slightly turbid, with a slight aromatic odour. Slowly but freely miscible with water; soluble in chloroform, in glacial acetic acid, in carbon disulfide, in carbon tetrachloride, in toluene, and in benzene. A 5% solution has a pH of 4.0 to 7.0. Tyloxapol should not be allowed to come into contact with metals. Store in airtight containers.

**Adverse Effects**

Slight inflammation of the eyelids has been reported after prolonged use of aqueous inhalations of tyloxapol. It has been reported that occasional febrile reactions may occur.

**Uses and Administration**

Tyloxapol is a nonionic surfactant of the alkyl aryl polyether alcohol type. It is used in solutions for cleansing contact lenses and artificial eyes. Aqueous solutions have been used for inhalation as a mucolytic for tenacious bronchopulmonary secretions. Tyloxapol has also been used as a vehicle for aerosol medication and for antibacterials given in irrigation solutions for pyogenic bone or joint infections.

**Preparations**

**Proprietary Preparations** (details are given in Part 3)

**Austria:** Tacholiquin; **Canada:** Enuclene; **Ger.:** Enuclen†; Tacholiquin; **NZ:** Enuclene; **USA:** Enuclene.

**Multi-ingredient:** **Austral:** Blink-N-Clean.