

2. Oiso N, *et al.* Concomitant allergic reaction to cetyl alcohol and crotamiton. *Contact Dermatitis* 2003; **49**: 261.
3. Soga F, *et al.* Contact dermatitis due to lanocanazole, cetyl alcohol and diethyl sebacate in lanocanazole cream. *Contact Dermatitis* 2004; **50**: 49–50.
4. Kiec-Swierczynska M, *et al.* Photoallergic and allergic reaction to 2-hydroxy-4-methoxybenzophenone (sunscreens) and allergy to cetyl alcohol in cosmetic cream. *Contact Dermatitis* 2005; **53**: 170–1.

## Preparations

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

**Arg.:** Lactopan†.

**Multi-ingredient:** **Arg.:** Caieni; **Hong Kong:** Ego Skin Cream; **Malaysia:** Ego Skin Cream; **NZ:** Ego Skin Cream; **Philipp.:** Dermalin; Sebo Fluid; **Singapore:** Ego Skin Cream.

## Cetyl Esters Wax

Cera Cetyla; Cera de ésteres cetílicos; Cera de ésteres del alcohol cetílico; Esperma de ballena sintético; Spermaceti Wax Replacement; Synthetic Spermaceti.

Воск Сложных Цетиловых Эфиров

CAS — 85566-24-1.

**Pharmacopoeias.** In *Int.* Also in *USNF*.

**USNF 26** (Cetyl Esters Wax). A mixture consisting primarily of esters of saturated fatty alcohols (C<sub>14</sub> to C<sub>18</sub>) and saturated fatty acids (C<sub>14</sub> to C<sub>18</sub>). White to off-white somewhat translucent flakes with a crystalline structure and a pearly lustre when caked; it has a faint odour and is free from rancidity. M.p. 43° to 47°. Insoluble in water; practically insoluble in cold alcohol; soluble in boiling alcohol, in chloroform, in ether, and in fixed and volatile oils; slightly soluble in cold petroleum spirit. Store in a dry place at a temperature not exceeding 40°.

## Profile

Cetyl esters wax is used mainly as a stiffening agent and emollient in creams and ointments. It is also used in the coating of some oral dosage forms. It is a synthetic replacement for natural spermaceti obtained from the sperm whale and the bottle-nosed whale.

## Preparations

**USP 31:** Rose Water Ointment.

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

**Multi-ingredient:** **Arg.:** Cold Cream Nature†.

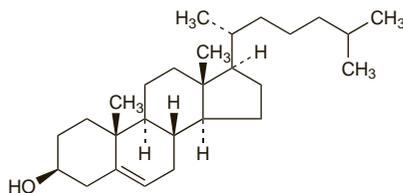
## Cholesterol

Cholesterin; Cholestérol; Cholesterolis; Cholesterolium; Colesterina; Colesterol; Kolesterol; Kolesteroli; Koleszterin; Koleszterin. Cholest-5-en-3 $\beta$ -ol.

Холестерин; Холестерол

C<sub>27</sub>H<sub>46</sub>O = 386.7.

CAS — 57-88-5.



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

**Ph. Eur. 6.2** (Cholesterol). A white or almost white, crystalline powder. It is sensitive to light. M.p. 147° to 150°. Practically insoluble in water; sparingly soluble in alcohol and in acetone. Protect from light.

**USNF 26** (Cholesterol). White or faintly yellow, practically odourless, pearly leaflets, needles, powder, or granules. It acquires a yellow to pale tan colour on prolonged exposure to light. M.p. 147° to 150°. Insoluble in water; slowly soluble 1 in 100 of alcohol; soluble 1 in 50 of dehydrated alcohol; soluble in acetone, in chloroform, in dioxan, in ether, in ethyl acetate, in petroleum spirit, and in vegetable oils. Protect from light.

## Profile

Cholesterol imparts water-absorbing power to pharmaceutical preparations and is used as an emulsifying agent. It has emollient activity and is used mainly in topical preparations. It is also used in ophthalmic and vaginal formulations, and in preparations for parenteral use.

Cholesteryl benzoate has been used as an ingredient in dermatological preparations.

## Preparations

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

**Fr.:** Senophile†.

**Multi-ingredient:** **Arg.:** Liposomas; **Belg.:** Senophile; **Chile:** Perfungol.

## Coconut Oil

Aceite de coco; Coco (huile de) raffinée; Cocos oleum raffinaturn; Coconut Butter; Copra Oil; Finomított kókuszolaj; Hindistancévi Yağ; Kokosolja, raffinerad; Kokosový olej čišťený; Kokosový olej; raffinotus; Kookosölj, puhdistettu; Oleum Cocos; Oleum Cocos Raffinatum; Oleum Cocosis.

Кокосовое Масло

CAS — 8001-31-8.

**Pharmacopoeias.** In *Eur.* (see p.vii), *Jpn.*, and *USNF*.

**Ph. Eur. 6.2** (Coconut Oil, Refined). The refined fatty oil obtained from the dried, solid part of the endosperm of *Cocos nucifera*. A white or almost white, unctuous mass. M.p. 23° to 26°. Practically insoluble in water; very slightly soluble in alcohol; freely soluble in dichloromethane and in petroleum spirit (b.p. 65° to 70°). Store in well-filled containers. Protect from light.

**USNF 26** (Coconut oil). The refined fixed oil obtained from the seeds of *Cocos nucifera*. A clear, white to light yellow-tan, viscous liquid. Practically insoluble in water; very slightly soluble in alcohol; freely soluble in dichloromethane and in light petroleum. M.p. 23° to 26°. Store in airtight, well-filled containers. Protect from light.

## Profile

Coconut oil is used as a basis for topical creams and ointments, in rectal and vaginal suppositories, and in solid dosage forms. It is also used in food manufacturing. Topical preparations have been used for pediculosis.

Fractionated coconut oil (thin vegetable oil) is used as a source of medium-chain triglycerides (p.1956).

**Hypersensitivity.** Sensitivity reactions to coconut products, including coconut oil,<sup>1</sup> have been reported rarely. Cases of anaphylaxis have been reported.<sup>2,3</sup>

1. Couturier P, *et al.* Un cas d'allergie à l'huile de noix de coco chez un nourrisson: responsabilité des laits maternelisés. *Allerg Immunol (Paris)* 1994; **26**: 386–7.
2. Rosado A, *et al.* Anaphylaxis to coconut. *Allergy* 2002; **57**: 182–3.
3. Nguyen SA, *et al.* Cross-reactivity between coconut and hazelnut proteins in a patient with coconut anaphylaxis. *Ann Allergy Asthma Immunol* 2004; **92**: 281–4.

## Preparations

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

**Ger.:** Aesculo Gel L; **UK:** Nitlotion.

**Multi-ingredient:** **Arg.:** Tersoderm Cabellos Grasos†; **Cz.:** Nutralipid MCT†; **Fr.:** Biostop; **Indon.:** Minyak Telon; Minyak Telon Cap Tiga Anak Yanthi Baby Oil; **Mex.:** Nutegen G†; **NZ:** Mr Nits; **Turk.:** Kataljin.

## Emulsifying Wax

Anionic Emulsifying Wax; Cera emulgente; Cera Emulsificans; Cera emulsionante; Cetylanum; Emulsif. Wax.

Эмульгирующий Воск

CAS — 8014-38-8.

**Pharmacopoeias.** In *Br.* Also in *USNF*.

**BP 2008** (Emulsifying Wax). It is prepared from 9 parts of ceto-stearyl alcohol and 1 part of sodium laurilsulfate or sodium salts of similar sulfated higher primary aliphatic alcohols. An almost white or pale yellow, waxy solid or flakes, becoming plastic when warmed, with a faint characteristic odour. Practically insoluble in water, forming an emulsion; partly soluble in alcohol.

**USNF 26** (Emulsifying Wax). It is prepared from ceto-stearyl alcohol containing a polyoxyethylene derivative of a fatty acid ester of sorbitan. M.p. 50° to 54°. It is a creamy-white, wax-like solid, with a mild characteristic odour. Insoluble in water; soluble in alcohol; freely soluble in chloroform, in ether, in most hydrocarbon solvents, and in aerosol propellants.

## Profile

Emulsifying wax added to fatty or paraffin bases facilitates the preparation of oil-in-water emulsions which are absorbed and are nongreasy when rubbed into the skin. It is a constituent of many hydrophilic ointment bases for so-called 'washable' ointments, and is also used in rectal preparations, and in cosmetics.

**Sunscreens activity.** Emulsifying ointment, which contains emulsifying wax with white soft paraffin and liquid paraffin, was found to have major sunscreen activity in clinically normal skin.<sup>1</sup> It should not be used before phototherapy or in phototesting procedures.

1. Cox NH, Sharpe G. Emollients, salicylic acid, and ultraviolet erythema. *Lancet* 1990; **335**: 53–4.

## Preparations

**BP 2008:** Aqueous Cream; Emulsifying Ointment.

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

**Multi-ingredient:** **UK:** Epaderm; Hydromol.

## Hard Fat

Adeps Neutralis; Adeps solidus; Glicéridos semisintéticos sólidos; Glicéridos hémi-synthétiques solides; Glicéridos Semi-synthétiques Solides; Grasa sólida; Hãrdfett; Hartfett; Kietieji riebalai; Kovarvasa; Massa Estearífrica; Neutralfett; Szilárd zsír; Tuk ztužený; Tłuszcz objętą.

Твёрдый Жир

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

**Ph. Eur. 6.2** (Hard Fat). A mixture of triglycerides, diglycerides, and monoglycerides obtained either by esterification of fatty acids of natural origin with glycerol or by transesterification of natural fats. A white or almost white, waxy, brittle mass. M.p. 30° to 45°; it does not differ by more than 2° from the nominal value. Practically insoluble in water; slightly soluble in dehydrated alcohol. When heated to 50°, it melts giving a colourless or slightly yellowish liquid. Protect from light and heat.

**USNF 26** (Hard Fat). A mixture of glycerides of saturated fatty acids. A white mass, almost odourless and free from rancid odour, and greasy to the touch. M.p. is between 27° and 44° and does not differ by more than 2° from the nominal value. The melted substance is colourless or slightly yellowish and forms a white emulsion when shaken with an equal amount of hot water. Practically insoluble in water; slightly soluble in alcohol; freely soluble in ether. Store in airtight containers at a temperature 5° or more below the melting-point.

## Profile

The name Hard Fat is applied to a range of bases with varying degrees of hardness and differing melting ranges used for the preparation of suppositories and vaginal pessaries. Hard fat is also used in some topical preparations.

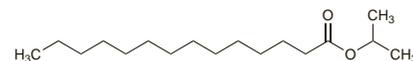
## Isopropyl Myristate (USAN)

Isopropyl myristát; Isopropyle, myristate d'; Isopropylis myristas; Isopropylmyristat; Isopropylmyristaatti; Isopropil-mirisztát; Isopropilo miristata; Isopropylu miristynian; Miristato de isopropilo. Tetradecanoic acid 1-methylethyl ester; Isopropyl tetradecanoate.

Изопропилимиристан

C<sub>17</sub>H<sub>34</sub>O<sub>2</sub> = 270.5.

CAS — 110-27-0.



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

**Ph. Eur. 6.2** (Isopropyl Myristate). A clear, colourless, oily liquid. Relative density about 0.853. Immiscible with water; miscible with alcohol, with dichloromethane, with fatty oils, and with liquid paraffin. Protect from light.

**USNF 26** (Isopropyl Myristate). A clear practically colourless, almost odourless, oily liquid; congeals at about 5°. Insoluble in water, in glycerol and in propylene glycol; freely soluble in alcohol. Miscible with most organic solvents and with fixed oils. Store in airtight containers. Protect from light.

**Incompatibility.** Isopropyl myristate is incompatible with hard paraffin.

## Profile

Isopropyl myristate is resistant to oxidation and hydrolysis and does not become rancid. It is absorbed fairly readily by the skin and is used as a basis for relatively nongreasy emollient ointments and creams. It is also used as a penetration enhancer for many substances applied externally as creams, sprays, or transdermal patches.

Other isopropyl fatty acid esters, including di-isopropyl adipate, isopropyl laurate, isopropyl linoleate, and isopropyl palmitate (below) have similar properties and are used for similar purposes to those of isopropyl myristate.

**Hypersensitivity.** A case of sensitivity to isopropyl myristate has been reported<sup>1</sup> in a 64-year-old woman. She developed a rash after using a sunscreen containing isopropyl myristate for 3 days, and patch testing confirmed a sensitivity both to this substance and to isohexadecane (a mixture of C<sub>16</sub> paraffins).

1. Bharati A, King CM. Allergic contact dermatitis from isohexadecane and isopropyl myristate. *Contact Dermatitis* 2004; **50**: 256–7.

## Preparations

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

**Spain:** Nucoa.

**Multi-ingredient:** **Hong Kong:** Hydromol†; **Ir.:** Emulsiderm; Hydromol†; **Israel:** Emulsiderm; **UK:** Dermal; Diprobath; Doublebase; Emulsiderm; Full Marks Solution; Hydromol.