

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

Ph. Eur. 6.2 (Squalane). A clear, colourless, oily liquid. Relative density about 0.815. It may be of vegetable (unsaponifiable matter of olive oil) or animal (shark liver oil) origin. Practically insoluble in water and in alcohol; freely soluble in acetone and in cyclohexane; miscible with most fats and oils.

USNF 26 (Squalane). A saturated hydrocarbon obtained by hydrogenation of squalene, an aliphatic triterpene occurring in some fish oils. It is a colourless, almost odourless, transparent oil. Insoluble in water; very slightly soluble in dehydrated alcohol; miscible with chloroform and with ether; slightly soluble in acetone. Store in airtight containers.

Profile

Squalane is a saturated derivative of squalene, a constituent of human sebum. It is miscible with human sebum and is included in topical preparations to increase skin permeability. It is also used as an emollient.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: *Arg.:* Cremisona†; *Hong Kong:* Apaisac; Physiogel; *Israel:* CleanEars; *Port.:* Creme Laser Hidrante; Lactonic†.

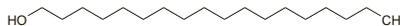
Stearyl Alcohol

Alcohol stearílico; Alcohol octadecílico; Alcohol stearílico; Alcohol Stéarylique; Alkohol stearýlowý; 1-Octadecanol; Octadecan-1-ol; Octadecyl Alcohol; Stearilo alkoholis; Stearylalkohol; Stéarylique; alcool; Stearylialkohol; Stearil-alkohol.

Стеариловый Спирт

$C_{18}H_{38}O = 270.5$.

CAS — 112-92-5.



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

Ph. Eur. 6.2 (Stearyl Alcohol). A mixture of solid alcohols; it contains not less than 95.0% of stearyl alcohol. White or almost white, unctuous flakes, granules, or mass. M.p. 57° to 60°. Practically insoluble in water; soluble in alcohol. When melted, it is miscible with fatty oils, with liquid paraffin, and with melted wool fat.

USNF 26 (Stearyl Alcohol). It contains not less than 90% of stearyl alcohol the remainder consisting chiefly of related alcohols. White unctuous flakes or granules with a faint characteristic odour. M.p. 55° to 60°. Insoluble in water; soluble in alcohol and in ether.

Profile

Stearyl alcohol is used to thicken topical and vaginal ointments and creams, and to increase their water-holding capacity; it has emollient and weak emulsifying properties. Stearyl alcohol is also used in oral solid dosage forms, including modified-release preparations.

Stearyl alcohol can cause hypersensitivity.

Hypersensitivity. Stearyl alcohol is usually considered to have a low potential for sensitisation although there have been isolated case reports of contact dermatitis to topical products containing it.¹⁻³

1. Black H. Contact dermatitis from stearyl alcohol in Metosyn (fluocinonide) cream. *Contact Dermatitis* 1975; **1**: 125.
2. de Berker D, et al. Contact sensitivity to the stearyl alcohol in Efudix cream (5-fluorouracil). *Contact Dermatitis* 1992; **26**: 138.
3. Yesudian PD, King CM. Allergic contact dermatitis from stearyl alcohol in Efudix cream. *Contact Dermatitis* 2001; **45**: 313-14.

Preparations

Proprietary Preparations (details are given in Part 3)

USA: SFC Lotion.

Multi-ingredient: *Arg.:* Caien.

Theobroma Oil

Beurre de Cacao; Burro di Cacao; Butyrum Cacao; Cacao Butter; Cacao Oleum; Cocoa Butter; Kakaobutter; Kakaový olej; Manteca de cacao; Manteiga de Cacaú; Ol. Theobrom; Olej kakaowy; Oleum Cacao; Oleum Theobromatis.

Какао-Масло; Масло Какао

CAS — 8002-31-1.

Pharmacopoeias. In *Br.*, *Fr.*, *Ger.*, *Jpn.* and *Pol.* Also in *USNF*.

BP 2008 (Theobroma Oil). The solid fat obtained from the roasted seeds of *Theobroma cacao*. A yellowish-white, somewhat brittle, solid fat, with a slight odour of cocoa. M.p. 31° to 34°. Slightly soluble in alcohol; freely soluble in chloroform, in ether, and in petroleum spirit (boiling range, 40° to 60°). Store at a temperature not exceeding 25°.

The symbol † denotes a preparation no longer actively marketed

USNF 26 (Cocoa Butter). A fat obtained from the seeds of *Theobroma cacao* (Sterculiaceae). It is a yellowish-white, usually brittle solid with a faint agreeable odour. M.p. 31° to 35°. Slightly soluble in alcohol; soluble in boiling dehydrated alcohol; freely soluble in chloroform and in ether.

Profile

Theobroma oil is used as a basis for suppositories. If it is heated to more than 36° during preparation the solidification point will be appreciably lowered due to the formation of metastable states; this leads to subsequent difficulty in setting. Theobroma oil is a major ingredient of chocolate.

Preparations

Proprietary Preparations (details are given in Part 3)

Spain: Lapiz Gras†.

Multi-ingredient: *Malaysia:* Palmer's Cocoa Butter Formula; Palmer's Cocoa Butter Formula Scar Serum.

Wool Alcohols

Alcoholes adipis lanae; Alcoholes de lana; Alcoholes de lanolina; Alcoholia Lanae; Alcolanum; Alcools de graisse de laine; Alkoholý tuky z ovčí vlny; Gyapjúviaszalkoholok; Lanalcolum; Lanolin Alcohols; Ullfettalkoholer; Villa-alkoholit; Vilny riebalý alkoholiai; Wollwachsalkohole; Wool Wax Alcohols.

Спирты Шерстяного Жира

CAS — 8027-33-6.

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

Ph. Eur. 6.2 (Wool Alcohols). A mixture of sterols and higher aliphatic alcohols obtained from wool fat and containing not less than 30.0% of cholesterol. It may contain not more than 200 ppm of butylated hydroxytoluene. A pale yellow to brownish-yellow, brittle mass becoming plastic on heating. M.p. not lower than 58°. Practically insoluble in water; slightly soluble in alcohol (90%); soluble in boiling dehydrated alcohol, and in dichloromethane. Store in well-filled containers. Protect from light.

USNF 26 (Lanolin Alcohols). A mixture of sterols, aliphatic alcohols, and triterpenoid alcohols obtained by the hydrolysis of wool fat. It may contain not more than 0.1% of a suitable antioxidant. It is a hard, waxy amber solid with a characteristic odour. M.p. not below 56°. Insoluble in water; slightly soluble in alcohol; freely soluble in chloroform, in ether, and in petroleum spirit. Store at a temperature not exceeding 25°. Protect from light.

Incompatibility. Wool alcohols is incompatible with coal tar, ichthammol, resorcinol, and phenol.

Profile

Wool alcohols is an emulsifying agent and emulsion stabiliser used in the preparation of water-in-oil creams and ointments. It increases the water absorbing capacity of hydrocarbon mixtures; the addition of 5% of wool alcohols permits a threefold increase in the amount of water that can be incorporated in soft paraffin and such emulsions are not 'cracked' by the addition of weak acids.

It has an emollient action on the skin and is used in preparations for dry skin and dry eyes.

Derivatives of wool alcohols with similar uses include acetylated wool alcohols and ethoxylated wool alcohols.

Wool alcohols may cause hypersensitivity (but see also under Wool Fat, below).

Preparations

BP 2008: Wool Alcohols Ointment.

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: *Arg.:* Macoderm; *Canada:* Refresh Laci-Lube; *Fin.:* Laci-Lube; *Ger.:* Coliquifilm; *Irl.:* Oilatum Emollient; *Israel:* Adinol; *Ital.:* LaciLube; *NZ:* LaciLube; *Switz.:* Coliquifilm; *UK:* Ashbourne Emollient Medicinal Bath Oil†; *Dermalo:* Laci-Lube; *Oilatum Emollient; USA:* Hydrocerin; Refresh PM.

Wool Fat

Adeps lanae; Adeps lanae hydrogenatus (wool fat, hydrogenated); Anhydrous Lanolin; Cera Lanae; Graisse de laine; Graisse de laine hydrogénée (wool fat, hydrogenated); Graisse de Suint Purifiée; Gyapjúviasz; Lanoléine; Lanolin; Lanolina; Lanolina anhidra; Lanolinum; Purified Lanolin; Refined Wool Fat; Suarda; Tuk z ovčí vlny; Tuk z ovčí vlny hydrogenovaný (wool fat, hydrogenated); Ullfett; Villarasva; Vilny riebalai; Wollfett; Wollwachs.

Ланолин; Шерстяной Жир

CAS — 8006-54-0.

Pharmacopoeias. In *Chin.*, *Eur.* (see p.vii), *Int.*, *Jpn.*, *US*, and *Viet.* Some pharmacopoeias include Hydrated Wool Fat which is prepared by the addition of water to wool fat.

Eur. also includes Hydrogenated Wool Fat.

US also includes Modified Lanolin.

Ph. Eur. 6.2 (Wool Fat). A purified, anhydrous, waxy material obtained from the wool of the sheep (*Ovis aries*). It may contain

not more than 200 ppm of butylated hydroxytoluene. A yellow, unctuous substance. When melted, it is a clear or almost clear, yellow liquid. Drop point 38° to 44°. 10 g absorbs not less than 20 mL of water. Practically insoluble in water; slightly soluble in boiling dehydrated alcohol; it forms an opalescent solution in petroleum spirit. Store at a temperature not exceeding 25°.

Ph. Eur. 6.2 (Wool Fat, Hydrogenated; Adeps Lanae Hydrogenatus). A mixture of higher aliphatic alcohols and sterols obtained from the direct, high-pressure, high-temperature hydrogenation of anhydrous wool fat during which the esters and acids present are reduced to corresponding alcohols. It may contain butylated hydroxytoluene. A white or pale yellow, unctuous substance. M.p. 45° to 55°. Practically insoluble in water; soluble in boiling alcohol and in petroleum spirit. Store in well-filled containers. Protect from light.

Ph. Eur. 6.2 (Wool Fat, Hydrous; Adeps Lanae Cum Aqua). A mixture of 75% of wool fat and 25% of water. It may contain not more than 150 ppm of butylated hydroxytoluene. A pale yellow, unctuous substance. Drop point 38° to 44°. Store at a temperature not exceeding 25°.

USP 31 (Lanolin). A purified wax-like substance obtained from the wool of the sheep, *Ovis aries* (Bovidae). It is a yellow tenacious unctuous mass with a slight characteristic odour. Melting range 38° to 44°. It contains not more than 0.25% of water. It may contain not more than 0.02% of a suitable antioxidant. Insoluble in water, but mixes without separation with about twice its weight of water; sparingly soluble in cold alcohol; more soluble in hot alcohol; freely soluble in chloroform and in ether. Store at a temperature preferably between 15° and 30°.

USP 31 (Modified Lanolin). It is Lanolin that has been processed to reduce the contents of free lanolin alcohols and detergent and pesticide residues. It contains not more than 0.25% of water. It may contain not more than 0.02% of a suitable antioxidant. Store in airtight, preferably rust-proof, containers and preferably at a temperature of 15° to 30°.

Profile

Wool fat is used in the formulation of water-in-oil creams and ointments. When mixed with a suitable vegetable oil or with soft paraffin it gives emollient creams that penetrate the skin. It can absorb about 30% of water. Wool fat is also used in other topical, vaginal, rectal, and ophthalmic preparations.

Derivatives and modifications of wool fat include hydrogenated wool fat (hydrogenated lanolin), hydrous wool fat (hydrous lanolin), poloxyl lanolin (ethoxylated lanolin), isopropyl lanolate, lanolin oil, and lanolin wax.

Wool fat can cause sensitivity reactions.

Hypersensitivity. Wool fat is widely regarded as a common sensitising agent, but the true extent of allergy to it is controversial. Suspected sensitivity reactions have proved difficult to reproduce in skin patch testing.¹ The allergens are unknown but are thought to be in the alcoholic fraction. A retrospective study² of more than 24 000 patients with eczema who received skin patch testing found that sensitivity reactions to a standard patch reagent of wool alcohols 30% in soft paraffin were rare; an average of 1.7% of patients per year showed sensitivity.

1. Wolf R. The lanolin paradox. *Dermatology* 1996; **192**: 198-202.
2. Wakelin SH, et al. A retrospective analysis of contact allergy to lanolin. *Br J Dermatol* 2001; **145**: 28-31.

Pesticide residues. Concerns have been raised in the past about pesticide residues in wool fat,¹⁻³ because of the possible risk to breast-fed infants whose mothers were using wool fat-based nipple ointments. Official published standards such as Ph. Eur. and USP now include limits for pesticide levels in wool fat.

1. Copeland CA, et al. Pesticide residue in lanolin. *JAMA* 1989; **261**: 242.
2. Cade PH. Pesticide in lanolin. *JAMA* 1989; **262**: 613.
3. Copeland CA, Wagner SL. Pesticide in lanolin. *JAMA* 1989; **262**: 613.

Preparations

BP 2008: Simple Eye Ointment; Simple Ointment;

USP 31: Modified Lanolin.

Proprietary Preparations (details are given in Part 3)

Austral.: Lansinoh†; **Canada:** Lansinoh†; **Purelan.:** Oleo Tull; **Port.:** Lansinoh; **Multi-Mam Lanolina†; S.Afr.:** Duratears; **Turk.:** Duratears.

Multi-ingredient: *Arg.:* Alcon Lagrimas; Crema Para Paspaduras; Dr Selby; Ninderm; Quem Plus†; **Austral.:** Alpha Kerī; Duratears; E45; Laci-Lube; Poly Visc; Rikodem†; Silcon†; Soothe'n Heal; **Austria:** Tiroler Steinol; **Belg.:** Duratears; Lacrytube; **Canada:** A & D Ointment; Akwa Tears; Alpha Kerī†; Duratears†; Huile de Bain Therapeutique; Lubiderm†; Optilube; Tears Naturelle PM; Therapeutic Bath Oil†; Therapeutic Skin Lotion†; **Chile:** Duratears; Laci-Lube; Pasta Lassar; **Fr.:** Grassolind Neutral; **Ger.:** Sofra-Tull sine; Vita-POS; **Gr.:** Duratears; Fissan-Pate†; **Hong Kong:** Alpha Kerī; **Balneum;** Duratears; **Indon.:** Yanthi Baby Oil; **Irl.:** Laci-Lube; **Israel:** Duratears; Kamil Blue; Lacrimol; Pedisol; **Malaysia:** Balneum; Duratears Naturelle; LaciLube†; **Mex.:** Acuafl†; **Neth.:** Duratears Z; **NZ:** Alpha Kerī; BK; DP; DP Lotion - HC; Hydroderm; Oralfit Peppermint; **Pol.:** E45; **Singapore:** Balneum; Duratears; LaciLube; **Spain:** Lubrifilm; Tears Lubricante†; **Thai.:** Balneum†; Duratears; **UK:** Alpha Kerī; Hewlett's; Lubri-Tears; Melrose; **USA:** Akwa Tears; Alpha Kerī; Bodi Oil; Bottom Better; Dermadrox; Dry Eyes; Duratears Naturelle; Geri-Silk; Laci-Gel; Laci-Lube; LubriFresh PM; LubriTears; Paladin; **Venez.:** Lacimart†; Oleoderm.

Topical or systemic antimicrobials should be given as necessary for secondary infections.

- Burgess IF. Human lice and their management. *Adv Parasitol* 1995; **36**: 271–342.
- Chosidow O. Scabies and pediculosis. *Lancet* 2000; **355**: 819–26.
- Roos TC, et al. Pharmacotherapy of ectoparasitic infections. *Drugs* 2001; **61**: 1067–88.
- Burkhardt CG. Relationship of treatment-resistant head lice to the safety and efficacy of pediculicides. *Mayo Clin Proc* 2004; **79**: 661–6.
- Elston DM. Drugs used in the treatment of pediculosis. *J Drugs Dermatol* 2005; **4**: 207–11.
- Chuard C. Les pédiculoses. *Rev Med Suisse* 2007; **3**: 2266–72.
- Leone PA. Scabies and pediculosis pubis: an update of treatment regimens and general review. *Clin Infect Dis* 2007; **44** (suppl 3): S153–S159.
- Pearlman DL. A simple treatment for head lice: dry-on, suffocation-based pediculicide. *Pediatrics* 2004; **114**: e275–e279.
- Burgess IF, et al. Treatment of head louse infestation with 4% dimeticone lotion: randomised controlled equivalence trial. *BMJ* 2005; **330**: 1423–5.
- Hill N, et al. Single blind, randomised, comparative study of the Bug Buster kit and over the counter pediculicide treatments against head lice in the United Kingdom. *BMJ* 2005; **331**: 384–6.
- Pearlman D. Cetaphil cleanser (Nuvo lotion) cures head lice. *Pediatrics* 2005; **116**: 1612.
- Roberts RJ, Burgess IF. New head-lice treatments: hope or hype? *Lancet* 2005; **365**: 8–10.

Scabies

Scabies is a parasitic infection of the skin by the mite *Sarcoptes scabiei*. The main symptom is pruritus, which is caused by an allergic reaction to the parasite and may not occur until several weeks after infection for the first time. Subsequent infections usually result in pruritus after a few days. Pruritus may persist for some months after effective treatment with an acaricide, but is not necessarily an indication for further acaricidal treatment; rather, antipruritics should be used. A severe crusted form (Norwegian scabies) may occur rarely, particularly in immunocompromised or incapacitated patients.

Treatment is with the acaricides permethrin or malathion applied, preferably as aqueous lotions, to clean, cool, dry skin over the entire body and left on for 8 to 24 hours, depending upon the preparation. The preparation should be reapplied to the hands whenever they are washed during this period. In adults, it is not usually necessary to treat the face and scalp, but these areas should be treated in young children or patients with atypical or crusted scabies. A single treatment may be effective, but treatment is usually repeated after 7 to 10 days if necessary. Other drugs used topically in the treatment of scabies include benzyl benzoate, crotamiton, lindane, and sulfur; sulfur is used with benzyl benzoate. A single oral dose of ivermectin may be effective. Close family and personal contacts should be treated at the same time and all clothes, towels, and bedding used by the infected person 2 days before treatment should be washed in hot water and dried in a hot dryer.

In addition to treatment with an acaricide, symptomatic treatment of the itching with crotamiton, calamine lotion, or systemic antihistamines or corticosteroids may be required.

References.

- Elgart ML. A risk-benefit assessment of agents used in the treatment of scabies. *Drug Safety* 1996; **14**: 386–93.
- Chosidow O. Scabies and pediculosis. *Lancet* 2000; **355**: 819–26.
- Roos TC, et al. Pharmacotherapy of ectoparasitic infections. *Drugs* 2001; **61**: 1067–88.
- Chosidow O. Scabies. *N Engl J Med* 2006; **354**: 1718–27.
- Heukelbach J, Feldmeier H. Scabies. *Lancet* 2006; **367**: 1767–74.
- Strong M, Johnstone PW. Interventions for treating scabies. Available in The Cochrane Database of Systematic Reviews; Issue 3. Chichester: John Wiley; 2007 (accessed 27/09/07).

Vector control

Many pests are involved in the transmission of communicable diseases, and vector control^{1,2} is an important part of the fight against such diseases. Insecticides are used in the control of filariasis (p.137) (*Aedes*, *Anopheles*, *Culex*, and *Mansonia* mosquitoes);³ leishmaniasis (p.824) (*Phlebotomus* or *Lutzomyia* sandflies);⁴ malaria (p.594) (*Anopheles* mosquitoes);^{5–8} dengue fever (see Haemorrhagic Fevers, p.850) (*Aedes* mosquitoes);^{9,10} onchocerciasis (p.137) (*Simulium* blackflies);¹¹ African trypanosomiasis (p.827) (*Glossina* tsetse flies);¹² and American trypanosomiasis (p.827) (*Triatoma* bugs).¹³ The insecticide temefos is useful in dracunculiasis (p.136) (crustacean host to the guinea worm larvae). In some cases, as in

filariasis or onchocerciasis, the insecticides used act mainly against the larval stage of the insect vector, whereas in other situations, as in malaria, activity is against the adult insect; in trypanosomiasis, activity is directed against both adult and immature stages. The majority of the experience gained in insecticidal vector control has probably been in malaria, and, for instance, a positive effect seen in the control of leishmaniasis has been considered to be mainly a byproduct of the concomitant malaria control programmes.

Insect repellents can provide personal protection against many insect vectors. For example, in malaria, insect repellents as well as the use of insecticides are important in preventing mosquito bites.

Molluscicides are used in the control of schistosomiasis (p.138) (*Bulinus* snails).¹⁴

Rodenticides are also extremely valuable in the vector control of some diseases such as leptospirosis (p.177), plague (p.186), rat-bite fever (p.164), and some haemorrhagic fevers (p.850).

- Chavasse DC, Yap HH, eds. *Chemical methods for the control of vectors and pests of public health importance*. Geneva: WHO, 1997.
- Rozendaal JA. *Vector control: methods for use by individuals and communities*. Geneva: WHO, 1997.
- WHO. Lymphatic filariasis: the disease and its control. *WHO Tech Rep Ser* 821 1992. Available at: http://libdoc.who.int/trs/WHO_TRS_821.pdf (accessed 21/07/08)
- WHO. Control of the leishmaniases. *WHO Tech Rep Ser* 793 1990. Available at: http://libdoc.who.int/trs/WHO_TRS_793.pdf (accessed 21/07/08)
- WHO. Vector control for malaria and other mosquito-borne diseases. *WHO Tech Rep Ser* 857 1995. Available at: http://libdoc.who.int/trs/WHO_TRS_857.pdf (accessed 21/07/08)
- WHO. *Malaria vector control: insecticides for indoor residual spraying*. Geneva: WHO, 2001.
- WHO. *International travel and health*. 2008 ed. Available at: <http://www.who.int/ith/> (accessed 17/04/08)
- Lengeler C. Insecticide-treated bednets and curtains for preventing malaria. Available in The Cochrane Database of Systematic Reviews; Issue 2. Chichester: John Wiley; 2004 (accessed 18/08/05).
- WHO. *Prevention and control of dengue and dengue haemorrhagic fever: comprehensive guidelines*. New Delhi: WHO, 1999. Also available at: http://www.searo.who.int/LinkFiles/Regional_Guidelines_on_Dengue_DHF_prevention_and_control_searo-29.pdf (accessed 10/10/05)
- Lloyd LS. *Best practices for dengue prevention and control in the Americas*. Washington DC: Environmental Health Project, 2003. Also available at: http://www.ehproject.org/PDF/Strategic_papers/SR7-BestPractice.pdf (accessed 10/10/05)
- WHO. Report of a WHO expert committee on onchocerciasis control. *WHO Tech Rep Ser* 852 1995. Available at: http://libdoc.who.int/trs/WHO_TRS_852.pdf (accessed 21/07/08)
- WHO. Control and surveillance of African trypanosomiasis: report of a WHO expert committee. *WHO Tech Rep Ser* 881 1998. Available at: http://libdoc.who.int/trs/WHO_TRS_881.pdf (accessed 21/07/08)
- WHO. Control of Chagas disease: second report of the WHO expert committee. *WHO Tech Rep Ser* 905 2002. Available at: http://libdoc.who.int/trs/WHO_TRS_905.pdf (accessed 21/07/08)
- WHO. The control of schistosomiasis: second report of the WHO expert committee. *WHO Tech Rep Ser* 830 1993. Available at: http://libdoc.who.int/trs/WHO_TRS_830.pdf (accessed 21/07/08)

Aluminium Phosphide

Aluminium Phosphide; Fosforo de aluminio.

AIP = 57.96.

CAS — 20859-73-8 (aluminium phosphide); 7803-51-2 (phosphine); 1314-84-7 (zinc phosphide).

Profile

Aluminium phosphide is used for the fumigation of grain and as a rodenticide. It releases phosphine (PH₃) in the presence of moisture and this accounts for its pesticidal activity. Phosphine gas has a garlic-like odour repulsive to man and domestic animals but apparently not to rats. Zinc phosphide is used similarly.

◇ References to poisoning associated with aluminium phosphide.

- Wilson R, et al. Acute phosphine poisoning aboard a grain freighter. *JAMA* 1980; **244**: 148–50.
- Singh S, et al. Aluminium phosphide ingestion. *BMJ* 1985; **290**: 1110–11.
- Anger F, et al. Fatal aluminium phosphide poisoning. *J Anal Toxicol* 2000; **24**: 90–2.
- Nocera A, et al. Dangerous bodies: a case of fatal aluminium phosphide poisoning. *Med J Aust* 2000; **173**: 133–5.
- Popp W, et al. Phosphine poisoning in a German office. *Lancet* 2002; **359**: 1574.
- Bogle RG, et al. Aluminium phosphide poisoning. *Emerg Med J* 2006; **23**: e3.
- Memiş D, et al. Fatal aluminium phosphide poisoning. *Eur J Anaesthesiol* 2007; **24**: 292–3.
- Shadnia S, et al. Unintentional poisoning by phosphine released from aluminium phosphide. *Hum Exp Toxicol* 2008; **27**: 87–9.

Amitraz (BAN, USAN, pINN)

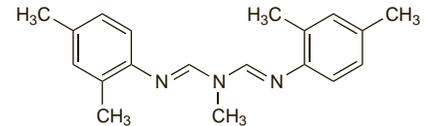
Amitratsi; Amitrazum; U-36059. N,N'-[[Methylimino]dimethylidyne]di-2,4-xylidine.

Амитраз

C₁₉H₂₃N₃ = 293.4.

CAS — 33089-61-1.

ATC Vet — QP53AD01.



Pharmacopoeias. In *BP(Vet)*. Also in *US* for veterinary use only.

BP(Vet) 2008 (Amitraz). A white to buff powder. Practically insoluble in water; decomposes slowly in alcohol; freely soluble in acetone.

Profile

Amitraz is used as a topical ectoparasiticide in veterinary practice. It is effective against various lice, mites, and ticks.

◇ References to poisoning with amitraz.

- Jorens PG, et al. An unusual poisoning with the unusual pesticide amitraz. *Hum Exp Toxicol* 1997; **16**: 600–1.
- Aydin K, et al. Amitraz poisoning in children: clinical and laboratory findings of eight cases. *Hum Exp Toxicol* 1997; **16**: 680–2.
- Leung VK, et al. Amitraz poisoning in humans. *J Toxicol Clin Toxicol* 1999; **37**: 513–14.
- Yaramis A, et al. Amitraz poisoning in children. *Hum Exp Toxicol* 2000; **19**: 431–3.
- Yilmaz HL, Yildizdas DR. Amitraz poisoning, an emerging problem: epidemiology, clinical features, management, and preventive strategies. *Arch Dis Child* 2003; **88**: 130–4.
- Proudford AT. Poisoning with amitraz. *Toxicol Rev* 2003; **22**: 71–4.
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- Elinav E, et al. Near-fatal amitraz intoxication: the overlooked pesticide. *Basic Clin Pharmacol Toxicol* 2005; **97**: 185–7.
- Avsarogullari L, et al. Acute amitraz poisoning in adults: clinical features, laboratory findings, and management. *Clin Toxicol* 2006; **44**: 19–23.
- Demirel Y, et al. Acute amitraz intoxication: retrospective analysis of 45 cases. *Hum Exp Toxicol* 2006; **25**: 613–17.

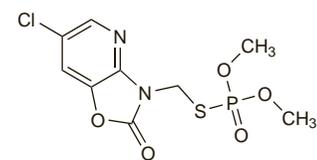
Azamethiphos (BAN)

Azametifós; CGA-18809; OMS-1825. S-[(6-Chloro-2,3-dihydro-2-oxo-1,3-oxazol[4,5-b]pyridin-3-yl)methyl] O,O-dimethyl phosphorothioate.

C₉H₁₀ClN₂O₅P₂S = 324.7.

CAS — 35575-96-3.

ATC Vet — QP53AF17.



Profile

Azamethiphos is an organophosphorus insecticide (p.2047) used in veterinary practice for the control of sea-lice infestation in salmon and the control of ectoparasites in the environment.

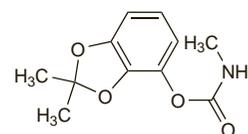
Bendiocarb

2,3-Isopropylidenedioxyphenyl methylcarbamate.

C₁₁H₁₃NO₄ = 223.2.

CAS — 22781-23-3.

ATC Vet — QP53AE03.



Profile

Bendiocarb is a carbamate insecticide (p.2037) for agricultural and household use.