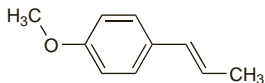


Anethole

Anethol; Anetol; p-Propenylanisole. (E)-1-Methoxy-4-(prop-1-enyl)benzene.

$C_{10}H_{12}O = 148.2$.

CAS — 104-46-1; 4180-23-8 (E isomer).



NOTE. Distinguish from Anethole Trithione (below).

Pharmacopoeias. In *Ger.* Also in *USNF*.

USNF 26 (Anethole). Obtained from anise oil or other sources or prepared synthetically. At or above 23° anethole is a colourless or faintly yellow liquid with a sweet taste and the aromatic odour of aniseed. Very slightly soluble in water; soluble 1 in 2 by volume of alcohol; readily miscible with chloroform and with ether. Store in airtight containers. Protect from light.

Profile

Anethole has similar properties to those of anise oil (below). It is also included in mixed terpene preparations used in urinary-tract disorders.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: *Austria:* Rowatinex; *Canada:* Beech Nut Cough Drops†; Bentasil Licorice with Echinacea†; Bronco Asmol; *Chile:* Rowatinex; *Cz.:* Rowatinex; *Ger.:* Rowatinex; *Hong Kong:* Neo-Rowatinex; Rowatinex; *Hung.:* Rowatinex; *Indon.:* Listerine Coolmint; *Irl.:* Rowatinex; *Israel:* Rowatinex; *Malaysia:* Rowatinex; *Philipp.:* Listerine Coolmint; Rowatinex; *Pol.:* Rowatinex; *Spain:* Pulmofasa; Rowanefrin; Vicks Formula 44†; *Switz.:* GU Eau†; Neo-Angin sans sucre; Pectocalmine Junior N; *Thai.:* Rowatinex; *Venez.:* Rowatinex.

Anethole Trithione

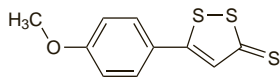
Anethole Dithiolthione; Anetol tritiona; SKF-1717; Trithioparamethoxyphenylpropene. 5-(4-Methoxyphenyl)-3H-1,2-dithiole-3-thione.

$C_{10}H_8OS_3 = 240.4$.

CAS — 532-11-6.

ATC — A16AX02.

ATC Vet — QA16AX02.



NOTE. Distinguish from Anethole (above).

Profile

Anethole trithione has been given orally in the management of dry mouth (p.2140) and as a choleric. The usual daily dose is 75 mg, generally in 3 divided doses before meals; doses of up to 150 mg daily have sometimes been used. Anethole trithione may cause discoloration of the urine.

Preparations

Proprietary Preparations (details are given in Part 3)

Belg.: Sulfarlem; *Canada:* Sialor; *Fr.:* Sulfarlem; *Ger.:* Mucinol†; *India:* Hepasulfol†; *Port.:* Sulfarlem†; *S.Afr.:* Sulfarlem†; *Spain:* Sonicur; *Switz.:* Sulfarlem; *Venez.:* Sialor†.

Multi-ingredient: *India:* Hepasulfol-AA.

Angelica

Andělikový kořen; Angélica; Angelicae radix; Angelikarot; Angélique, racine d'; Anýalgyóké; Archangelica; Archangelicae Radix; Korzeń arcydzięła; Šventagaršvių šaknys; Väinönputkenjuuri.

CAS — 8015-64-3 (*angelica* oils).

Pharmacopoeias. In *Eur.* (see p.vii).

Jpn has separate monographs for *Angelica acutiloba* (Japanese Angelica) and *A. dahurica*.

Chin. specifies *A. dahurica*, *A. dahurica* var. *formosana*, *A. pubescens*, and *A. sinensis*.

Ph. Eur. 6.2 (*Angelica* Root). The whole or cut, carefully dried rhizome and root of *Angelica archangelica* (*Archangelica officinalis*) containing a minimum of 0.2% v/w of essential oil, calculated with reference to the dried drug.

Profile

Angelica (*Angelica archangelica*) is widely used in herbal medicine. The root is used as a bitter to stimulate the appetite. *Angelica* also has diaphoretic and expectorant properties and has been used for circulatory and respiratory disorders.

Angelica oil is used in aromatherapy.

Angelica contains furanocoumarins and may cause photosensitivity reactions or interfere with anticoagulant therapy.

Other *Angelica* spp. that are used in herbal medicine include *A. acutiloba* (Japanese angelica), *A. dahurica*, *A. pubescens*, and *A. sinensis* (see Dong Quai, p.2258).

Angelica stems are candied for culinary use.

Homeopathy. *Angelica* has been used in homeopathic medicines under the following names: Archangelica; *Angelica archangelica*; *Angelica archangelica* var. *archangelica*.

Preparations

Proprietary Preparations (details are given in Part 3)

Ger.: Pascovegeton†.

Multi-ingredient: *Arg.:* Sigmafem; *Austral.:* Capsella Complex; Dong Quai Complex; Extralife Meno-Care; Feminine Herbal Complex; Infant Tonic†; Vitatona; Lifesystem Herbal Formula 4 Women's Formula†; Medinat Esten†; Vitatona; Women's Formula Herbal Formula 3†; *Austria:* Abdomilon N; *Canada:* Natural HRT; *Cz.:* Abdomilon†; Dr Theiss Rheuma Creme†; Dr Theiss Schweden Krauter; Dr Theiss Schwedenbitter†; Ibero-gast; Klosterfrau Melisana; Original Schwedenbitter†; Stomaran; Valofyt Neo; *Fr.:* Dystolise; Mediflor Tisane Digestive No 3; *Ger.:* Abdomilon N; Anore X N†; Carvomint†; Doppelherz Melissegeist†; Gastritol; Ibergast; Infiract†; Melissegeist; Schwedenbitter Elixier; Stovalid N†; *Hong Kong:* Phytoestrin†; *Ital.:* Florelax; *Philipp.:* Hemofer; Zilongin; *Pol.:* Melis-Tonic; Melisal; Melisana Klosterfrau; Melissed; Nervosol; *Rus.:* Doppelherz Melissa (Доппельгерц Мелисса); Original Grosser Bittner Balsam (Оригинальный Большой Бальзам Биттнера); *S.Afr.:* Melissegeist; Spiritus Contra Tussim Drops; *Singapore:* Phytoestrin; *Spain:* Agua del Carmen; Himelan†; *Switz.:* Alcolat de Melisse†; Gastrosan; Ibergast; Phytomed Gastro†; *UK:* Melissa Comp.

Aniseed

Anice; Anis; Anis, fruit d'; Anís, semilla de; Anis Verde; Anis Vert; Anise; Anise Fruit; Anisi fructus; Anizstermés (fruit); Anyžiy vaisiai (fruit); Anyžový plod (fruit); Owoc anyżu (fruit).

Pharmacopoeias. In *Eur.* (see p.vii).

Ph. Eur. 6.2 (Aniseed; Anisi Fructus). The whole dried fruit of *Pimpinella anisum*, containing not less than 2% v/w of essential oil. It has an odour reminiscent of anethole. Protect from light.

Profile

Aniseed is carminative and mildly expectorant; it is used mainly as anise oil or as preparations of the oil. It may cause contact dermatitis, probably due to its anethole content.

Aniseed is the source of anise oil (below).

References.

- Chandler RF, Hawkes D. Aniseed—a spice, a flavor, a drug. *Can Pharm J* 1984; **117**: 28–9.
- Fraj J, et al. Occupational asthma induced by aniseed. *Allergy* 1996; **51**: 337–9.
- Garcia-Gonzalez JJ, et al. Occupational rhinoconjunctivitis and food allergy because of aniseed sensitization. *Ann Allergy Asthma Immunol* 2002; **88**: 518–22.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: *Austral.:* Neo-Cleanse; *Austria:* Asthmatee EF-EM-ES; Brady's-Magentropfen; Euka; Flonissamin†; Nesthakchen; Species Carvi comp†; *Braz.:* Balsamo Branco; Camomila; *Canada:* Herbal Laxative; *Chile:* Paltomie†; *Cz.:* Blahugstee N†; *Fr.:* Elxir Bonjean; Herbesan; Mediflor Tisane Digestive No 3; Mucinum à l'Extrait de Cascara; *Ger.:* Em-eukal Husten- und Brusttee†; Em-medical†; Floradix Multipretten N; Majocarmin-Tee; Ramend Krauter†; rohasa†; Stovalid N†; *Hong Kong:* Mucinum Cascara†; *Israel:* Jungborn; *Ital.:* Anice (Specie Composta)†; Cadifen; Cadimint; Dicalmir; Lassatina†; Tisana Kelemta; *Pol.:* Apinorm; *Port.:* Mucinum; *Rus.:* Original Grosser Bittner Balsam (Оригинальный Большой Бальзам Биттнера); *S.Afr.:* Clairor; Cough Elixir; *Spain:* Sclaxo; Digestovital†; Laxante Sanatorium; Laxomax†; *Switz.:* Kernosan Elixir; Kernosan Heidelberger Poudre; Tisane favorisant l'allaitement; *UK:* Herb and Honey Cough Elixir; Revitonil; *Venez.:* Neo-Atropin†.

Anise Oil

Anís, aceite esencial de; Anis, huile essentielle d'; Aniseed Oil; Anisi aetheroleum; Anisi Etheroleum; Anisolja; Anisöljy; Anizsolaj; Anyžiy eterinis aliejus; Anyžová silice; Esencia de Anís; Essence d'Anis; Olejek anyżowy; Oleum Anisi.

NOTE. The name anise oil is also applied to Star Anise Oil, p.2392.

Pharmacopoeias. In *Chin.* and *Eur.* (see p.vii). Also in *USNF*. **Ph. Eur. 6.2** (Anise Oil; Anisi Aetheroleum). An essential oil obtained by steam distillation from the dry ripe fruits of *Pimpinella anisum*. It contains less than 1.5% linalol, 0.5 to 5.0% estragole, less than 1.2% α -terpineol, 0.1 to 0.4% *cis*-anethole, 87 to 94% *trans*-anethole, 0.1 to 1.4% anisaldehyde, and 0.3 to 2.0% pseudoisoeugenyl 2-methylbutyrate. A clear, colourless or pale yellow liquid. Relative density 0.980 to 0.990. F_p 15° to 19°. Store in well-filled, airtight containers at a temperature not exceeding 25°. Protect from light.

USNF 26 (Anise Oil). The volatile oil distilled with steam from the dried, ripe fruit of *Pimpinella anisum* (Apiaceae) or from the dried ripe fruit of *Illicium verum* (Iliaceae). Congealing temperature not lower than 15°. Soluble 1 in 3 of alcohol (90%). Store in well-filled airtight containers. If solid material has separated, carefully warm the oil until it is completely liquefied, and mix before using.

Incompatibility. PVC bottles softened and distorted fairly rapidly in the presence of anise oil, which should not be stored or dispensed in such bottles.¹

1. Department of Pharmaceutical Sciences of the Pharmaceutical Society of Great Britain. Plastics medicine bottles of rigid PVC. *Pharm J* 1973; **210**: 100.

Profile

Anise oil is carminative and mildly expectorant and is a common ingredient of cough preparations. It is also a flavour. Anise oil is used in aromatherapy.

It may cause contact dermatitis, probably due to its anethole content.

◇ For references to aniseed and anise oil, see Aniseed, above.

Preparations

BP 2008: Camphorated Opium Tincture; Compound Orange Spirit; Concentrated Anise Water; Concentrated Camphorated Opium Tincture; **USNF 26:** Compound Orange Spirit.

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: *Austral.:* Cough Relief†; Digestive Aid; Gartech; *Austria:* Bradosol; Bronchotop; Expectal-Tropfen; Heumann's Bronchialtee; Kamillosan; Luuf-Hustentee; Neo-Angin; Nesthakchen; *Braz.:* Ovariusedant†; *Canada:* Beech Nut Cough Drops†; *Cz.:* Biotussil; Bronchosan Bronchostop†; Neo-Angin; Stopangin; *Fr.:* Pategonique; *Ger.:* Aspasmon N†; Bronchofortan; Em-eukal Husten- und Brusttee†; Em-medical†; Epepect Pastillen N; Floradix Multipretten N; Heumann Bronchialtee Solubifix T; Hevertopect N†; Kamillosan Mundspray; Leber-Galle-Tropfen 83†; Neo-Ballistol†; Pulmocordio mite SL†; Pulmotin; ratioGast†; Repha-Os; Salmiak†; Salviathymol N; Sinuforton; *Hong Kong:* Epepect Blocker; *India:* Be-zozyme; Kamillosan-N; Neopeptine; *Indon.:* M'nyak Telon Cap Tiga Anak; OBH†; Silax; *Neth.:* Bronchicum; *Philipp.:* Kamillosan M†; *Pol.:* Carmolis; Herbolen D; Tobacosol†; *Rus.:* Carmolis (Кармолис)†; Carmolis Fluid (Кармолис Жидкость)†; Stopangin (Стопангин)†; *S.Afr.:* Borsdruppels; Paragonese-Elixier; Puma Cough Balsam; *Spain:* Carmofolilvys†; Carmofolilvys Juvenis†; H Tussan; Odontocromil c Sulfamidid†; *Switz.:* Bronchofluid N†; Carmol; Carmol Plus†; Gem; Kamillosan; Makapfyt Gouttes antitussives; Neo-Bronchol; Odontal; Pastilles bronchiques S nouvelle formule; Pastilles pectorales Demo N; Penta; *Thai.:* Gas-Nep; Mesto-Of; *UK:* Hactos; Honey & Molasses; Lightning Cough Remedy; Potters Strong Bronchial Catarrh Pastilles; Potters Sugar Free Cough Pastilles; Slippery Elm Stomach Tablets; Vegetable Cough Remover; Zubes; Zubes Blackcurrant.

Anisodamine

6-Hydroxy-hyoscyamine.

$C_{17}H_{23}NO_4 = 305.4$.

CAS — 55869-99-3.

Pharmacopoeias. *Chin.* has a monograph for Raceanisodamine and Anisodamine Hydrobromide.

Profile

Anisodamine is an alkaloid isolated from *Scopolia tangutica* (*Anisodus tanguticus*), a plant used as a traditional medicine in China. It is related to atropine and hyoscyamine and has similar antimuscarinic properties (p.1221). Anisodamine is given orally for its spasmolytic actions in the treatment of gastrointestinal spasm. It has also been tried in circulatory disorders, septic shock, and organophosphorus poisoning.

References.

- Poupko JM, et al. The pharmacological properties of anisodamine. *J Appl Toxicol* 2007; **27**: 116–21.
- Fu XH, et al. Effect of intracoronary administration of anisodamine on slow reflow phenomenon following primary percutaneous coronary intervention in patients with acute myocardial infarction. *Chin Med J (Engl)* 2007; **120**: 1226–31.

Apis mellifera

Abeille domestique; Abeja de la Miel; The honey bee.

Медоносная Пчела Домашняя

Pharmacopoeias. *Eur.* (see p.vii) includes the live worker honey bee for homeopathic preparations.

Ph. Eur. 6.2 (Honey Bee for Homeopathic Preparations; Apis Mellifera ad Praeparationes Homeopathicas). Live worker honey bee, *Apis mellifera*.

Profile

The honey bee is a source of purified honey (p.1948), royal jelly (p.2382), propolis (p.2373), and bee pollen (see Pollen and Pollen Extracts, p.2370).

Homeopathy. Preparations of *Apis mellifera* have been used in homeopathic medicines under the following names: Apis; Apis mellifica; Apis mel; Apis mell.

Arthritis. Bee venom has traditionally been used in the treatment of arthritis.^{1,2} Studies *in vitro* have shown that bee venom has anti-inflammatory activity similar to that of cyclophosphamide. Melitin appears to be the active constituent, and seems to act by interfering with superoxide radical production from human leucocytes.¹

- Somerfield SD. Bee venom and arthritis: magic, myth or medicine? *N Z Med J* 1986; **99**: 281–3.
- Caldwell JR. Venoms, copper and zinc in the treatment of arthritis. *Rheum Dis Clin North Am* 1999; **25**: 919–28.

Hypersensitivity. For reference to the use of whole body extracts or venom from Hymenoptera spp. for allergen immunotherapy in allergic subjects, see p.2251. For reference to hypersensitivity reactions to bee products see under Royal Jelly, p.2382.