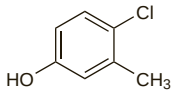
Chlorocresol *(USAN, rINN)*

Chlorkresol; Chlorkresolum; Chlorocrésol; Chlorocresolum; Chlorokrezolis; Clorocresol; Kloorikresoli; Klorkresol; Klorokrezol; Parachlorometacresol; PCMC. *p*-Chloro-*m*-cresol; 4-Chloro-3-methylphenol.

Хлорокрезол

C_7H_7ClO = 142.6.

CAS — 59-50-7.



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

Ph. Eur. 6.2 (Chlorocresol). A white or almost white, crystalline powder or compacted crystalline masses supplied as pellets or colourless or white crystals. M.p. 64° to 67°. Slightly soluble in water; very soluble in alcohol; freely soluble in fatty oils. It dissolves in solutions of alkali hydroxides. Protect from light.

USNF 26 (Chlorocresol). Colourless or practically colourless crystals or crystalline powder with a characteristic nontarry odour; it is volatile in steam. M.p. 63° to 66°. Soluble 1 in 260 of water; more soluble in hot water; soluble 1 in 0.4 of alcohol; soluble in ether, in terpenes, in fixed oils, and in solutions of alkali hydroxides. Store in airtight containers. Protect from light.

Incompatibility. Chlorocresol has long been recognised to be incompatible with a range of compounds including: calcium chloride, codeine phosphate, diamorphine hydrochloride, papaveretum, quinine hydrochloride,[1] methylcellulose,[2] and nonionic surfactants[3,4] such as cetomacrogol 1000 and polysorbate 80.

1. McEwan JS, Macmorran GH. The compatibility of some bactericides. *Pharm J* 1947; **158:** 260–2.
2. Harris WA. The inactivation of cationic antiseptics by bentonite suspensions. *Australas J Pharm* 1961; **42:** 583–8.
3. *PSGB Lab Report P/70/15* 1970.
4. Yousef RT, *et al.* Effect of some pharmaceutical materials on the bactericidal activities of preservatives. *Can J Pharm Sci* 1973; **8:** 54–6.

Adverse Effects, Treatment, and Precautions

As for Phenol, p.1656. The antimicrobial activity of chlorocresol may be reduced by incompatibility (see above), adsorption, increasing pH, or through combination with organic matter (including oils and fats) or nonionic surfactants.

Chlorocresol is less toxic than phenol. Sensitisation reactions may follow application to the skin and hypersensitivity has occurred after systemic use of injections containing chlorocresol as a preservative.

Uses and Administration

Chlorocresol is a potent chlorinated phenolic disinfectant and antiseptic. It has bactericidal activity against Gram-positive and Gram-negative bacteria and is effective against fungi but has little activity against bacterial spores except at high temperatures. It is more active in acid than in alkaline solution.

Chlorocresol is used in preparations for disinfection of the skin and wounds. It is also used as a preservative in cosmetics and in creams and other preparations for external use that contain water.

Chlorocresol is used as a preservative in aqueous injections issued in multidose containers. It may also be added to aqueous preparations that cannot be sterilised in their final containers and have to be prepared using aseptic precautions. Concentrations of 0.1% have generally been used. Injections prepared with chlorocresol should not be injected into the CSF, the eye, or the heart. Also such injections should generally not be given in volumes greater than 15 mL. Sterilisation by heating with a bactericide such as chlorocresol is no longer a recommended practice.

Preparations

BPC 1973: Proflavine Cream.

Proprietary Preparations (details are given in Part 3)

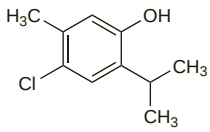
Multi-ingredient: ***Arg.:*** Perfungol†; ***Austria:*** Ulcurilen; ***Chile:*** Perfungol; ***Cz.:*** Cyteal; ***Fr.:*** Cicatryl; Cyteal; ***Ger.:*** Bomix; Helipur; Ulcurilen N†; ***Gr.:*** Lyoderm; Octrene; ***Irl.:*** Anbesol; Valderma†; ***Ital.:*** Helipur; Hygienist†; ***Port.:*** Anbegele†; Cyteal; ***Rus.:*** Cyteal (Цитеал); ***S.Afr.:*** Anbesol; ***Singapore:*** Cyteal; ***UK:*** Anbesol; Cymex; Cyteal; Valderma.

Chlorothymol

Clorotimol; Monochlorothymol. 6-Chlorothymol; 4-Chloro-2-isopropyl-5-methylphenol.

$C_{10}H_{13}ClO$ = 184.7.

CAS — 89-68-9.



Profile

Chlorothymol is a chlorinated phenolic antiseptic used as an ingredient of preparations for hand and skin disinfection and topical treatment of fungal infections. It has also been used in preparations for anorectal disorders, cold symptoms, and mouth disorders.

Preparations

Proprietary Preparations (details are given in Part 3)

Ital.: Pioral Pasta.

Multi-ingredient: ***Arg.:*** Solvex Liquido Fungicida†; ***India:*** Easi Breathe; Karvol Plus; Sinarest Vapocaps; ***Ital.:*** Labocaina; Traumicid†; Vagisil; ***Philipp.:*** Calmoseptine.

Chloroxylenol *(BAN, USAN, rINN)*

Chloroxylénol; Chloroxylenolum; Cloroxilenol; Parachlorometaxylenol; PCMX. 4-Chloro-3,5-xylenol; 4-Chloro-3,5-dimethylphenol.

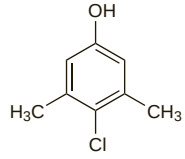
Хлороксиленол

C_8H_9ClO = 156.6.

CAS — 88-04-0.

ATC — D08AE05.

ATC Vet — QD08AE05.



Pharmacopoeias. In *Br.* and *US.*

BP 2008 (Chloroxylenol). White or cream crystals or crystalline powder with a characteristic odour; volatile in steam. Very slightly soluble in water; freely soluble in alcohol; soluble in ether, in terpenes, in fixed oils, and in solutions of alkali hydroxides.

USP 31 (Chloroxylenol). White crystals or crystalline powder with a characteristic odour; volatile in steam. Very slightly soluble in water; freely soluble in alcohol, in ether, in terpenes, in fixed oils, and in solutions of alkali hydroxides.

Incompatibility. Chloroxylenol has been reported to be incompatible with nonionic surfactants and methylcellulose.

Adverse Effects and Precautions

Chloroxylenol in the recommended dilutions is generally non-irritant but skin sensitivity has occurred. There have been isolated reports of poisoning. Symptoms reported include corrosion of the oral mucosa, larynx, and the gastrointestinal tract, bradycardia, hypotension, and renal failure. Large amounts may cause CNS depression. Pulmonary aspiration of chloroxylenol-based disinfectants may result in pneumonia, acute respiratory distress syndrome, and cardiorespiratory arrest.

The antimicrobial activity of chloroxylenol may be diminished through combination with organic matter. Aqueous solutions of chloroxylenol may be susceptible to contamination with microorganisms. To reduce this risk, solutions must be freshly prepared at the recommended concentration and appropriate measures should be taken to prevent contamination during storage or dilution.

Poisoning. Reports of fatal or severe self-poisoning with chloroxylenol solution.[1-5]

1. Meek D, *et al.* Fatal self-poisoning with Dettol. *Postgrad Med J* 1977; **53:** 229–31.
2. Joubert P, *et al.* Severe Dettol (chloroxylenol and terpineol) poisoning. *BMJ* 1978; **1:** 890.
3. Chan TYK, *et al.* Chemical gastro-oesophagitis, upper gastrointestinal haemorrhage and gastroscopic findings following Dettol poisoning. *Hum Exp Toxicol* 1995; **14:** 18–19.
4. Chan TY, Critchley JA. Pulmonary aspiration following Dettol poisoning: the scope for prevention. *Hum Exp Toxicol* 1996; **15:** 843–6.
5. Joynt GM, *et al.* Delayed upper airway obstruction: a life-threatening complication of Dettol poisoning. *Anaesthesia* 1997; **52:** 261–3.

Uses and Administration

Chloroxylenol is a chlorinated phenolic antiseptic that is bactericidal against most Gram-positive bacteria but less active against staphylococci and Gram-negative bacteria, and is often inactive against *Pseudomonas* spp. Its activity against *Ps. aeruginosa* appears to be increased by the addition of edetic acid. It is inactive against bacterial spores.

Chloroxylenol Solution (BP 2008) is used for skin and wound disinfection, and chloroxylenol is used as a preservative in a variety of other topical formulations.

Preparations

BP 2008: Chloroxylenol Solution.

Proprietary Preparations (details are given in Part 3)

Arg.: Espadol†; Previnfec†; Talowin; ***Austral.:*** Dettol Classic; ***Belg.:*** Dettol; ***Canad.:*** Antiseptic Ointment†; ***Gr.:*** Dettol; ***Hong Kong:*** Dettol; ***Irl.:*** Dettol; ***Ital.:*** Neomercurocromo; ***Malaysia:*** Dettol; ***Neth.:*** Dettol; ***NZ:*** Dettol; ***Singapore:*** Dettol; ***Thai.:*** Dettol; ***UK:*** Dettol.

Multi-ingredient: ***Arg.:*** Jabonacid; Kytinon ATM†; ZeaSorb; ***Austral.:*** Dettol Cream; Solyptol†; ZeaSorb; ***Canad.:*** ZeaSorb; ***Chile:*** Acnaid†; Dermac Crema; ZeaSorb†; ***Ger.:*** Gehwol Fungizid†; ***Hong Kong:*** Acne-Aid; Dettol†; ***India:*** Dettol Obstetric; Dettolin; ***Indon.:*** ZeaSorb; ***Irl.:*** Dettol; ZeaSorb; ***Israel:*** Gargol; Hemo; Rexitol; ***Ital.:*** Foille Scottature; Foille Sole; ***Malaysia:*** Acne-Aid; Dettol; ZeaSorb†; ***NZ:*** Dettol; ***Philipp.:*** Strepsils; ZeaSorb; ***Pol.:*** Sterovag; ***S.Afr.:*** Respisniffers; Woodwards Inhalant; ZeaSorb; ***Singapore:*** Acne-Aid; Dettol; ZeaSorb; ***Thai.:*** Dettol; Johnson's Baby Prickly Heat Powder†; ZeaSorb; ***UK:*** Dettol; Rinstead; Skintex; TCP; Waxwane†; ZeaSorb; ***USA:*** Calamycin; Cortane-B; Cortic ND; Cyotic; Dermacoat; Foille; Fungi-Nail; Geri-Lav Free; Gordochom; Lobana Peri-Garde; Mediotic-HC; Otomar-HC; PramOtic; Tri-Otic†; Unguentine Plus; Zoto-HC.

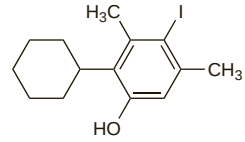
Cicliomenol *(rINN)*

Cicliométol; Cicliomenolum. 2-Cyclohexyl-4-iodo-3,5-xylenol.

Циклиоменол

$C_{14}H_{19}IO$ = 330.2.

CAS — 10572-34-6.



Profile

Cicliomenol is an antiseptic included in preparations intended for the topical treatment of mouth and throat infections.

Preparations

Proprietary Preparations (details are given in Part 3)

Ital.: Golamed†.

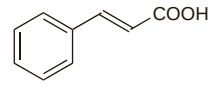
Multi-ingredient: ***Ital.:*** Golamed Due†; Pastiglie Valda†.

Cinnamic Acid

Cinámico, ácido; Cinnamylic Acid. *trans*-3-Phenylpropenoic acid.

$C_6H_5.CH{:}CH.CO_2H$ = 148.2.

CAS — 621-82-9.



Pharmacopoeias. In *Br.*

BP 2008 (Cinnamic Acid). Colourless crystals with a faint balsamic odour. Very slightly soluble in water; freely soluble in alcohol; soluble in chloroform and in ether.

Profile

Cinnamic acid has preservative properties. It is used with benzoic acid and other substances to simulate the flavour of tolu.

Preparations

BP 2008: Tolu-flavour Solution.

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: ***UK:*** Hemocane; Potters Gees Linctus; Sanderson's Throat Specific.

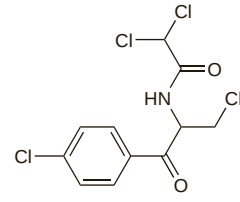
Cloponone *(BAN, rINN)*

Cloponona; Clopononum. (*RS*)-2,2-Dichloro-*N*-[4-chloro-α-(chloromethyl)phenacyl]acetamide.

Клопонон

$C_{11}H_9Cl_4NO_2$ = 329.0.

CAS — 15301-50-5.



Profile

Cloponone is an antiseptic included in multi-ingredient preparations intended for the topical treatment of vaginal infections.

Preparations

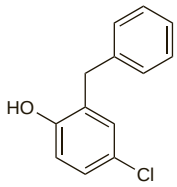
Proprietary Preparations (details are given in Part 3)
Multi-ingredient: ***Hong Kong:*** Ginetris†.

Clorophene *(USAN)*

Clorofene *(pINN)*; Clorfene; Clorofène; Clorofeno; Clorofenum; NSC-59989; Septiphene. 2-Benzyl-4-chlorophenol.

Клорофен

$C_{13}H_{11}ClO$ = 218.7.
CAS — 120-32-1.



Profile

Clorophene is a chlorinated phenolic antiseptic stated to be active against a wide range of bacteria, fungi, protozoa, and viruses. It is used as a skin disinfectant and for surface and instrument disinfection. Clorophene sodium has also been used.

Preparations

Proprietary Preparations (details are given in Part 3)

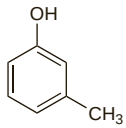
Multi-ingredient: ***Belg.:*** Neo-Sabenyl; ***Ger.:*** Bomix; Freka-Derm; Freka-Sept 80; Helipur; ***Ital.:*** Helipur; Hygienist†; ***Switz.:*** Frekaderm†; ***UAE:*** Radol; ***USA:*** BTK-Plus.

Cresol

Crésol brut (cresol, crude); Cresolum; Cresolum crudum (cresol, crude); Cresylic Acid; Kresol; Kresol, rå (cresol, crude); Kresoli, raaka (cresol, crude); Kresolum Venale; Krezol; Krezolis, negrynintas (cresol, crude); Metacresol *(BAN)*; Tricresol; Trikresolum. Methylphenol.

Крезол

C_7H_8O = 108.1.
CAS — 1319-77-3; 95-48-7 (o-cresol); 108-39-4 (m-cresol); 106-44-5 (p-cresol).



NOTE. Some grades of mixed cresols may be equivalent to Tar Acids (p.1663).

Pharmacopoeias. In *Chin.*, *Eur.* (see p.vii), and *Jpn.* Also in *USNF*.
Eur. also includes metacresol.
Ph. Eur. 6.2 (Cresol, Crude; Cresolum Crudum). A mixture of *o*-, *m*-, and *p*-methylphenol. A colourless or pale brown liquid. Relative density 1.029 to 1.044. Sparingly soluble in water; miscible with alcohol and with dichloromethane. Protect from light.
Ph. Eur. 6.2 (Metacresol; Metacresolum). A colourless or yellowish liquid. Relative density about 1.03. M.p. about 11°. Sparingly soluble in water; miscible with alcohol and with dichloromethane. Store in airtight containers. Protect from light.
USNF 26 (Cresol). A mixture of cresol isomers obtained from coal tar or petroleum. A colourless, yellowish to brownish-yellow, or pinkish, highly refractive liquid, becoming darker with age or on exposure to light, with a phenol-like, sometimes empyreumatic odour. Specific gravity 1.030 to 1.038. Sparingly soluble in water, usually forming a cloudy solution; miscible with alcohol, with ether, and with glycerol; dissolves in solutions of fixed alkali hydroxides. A saturated solution in water is neutral or slightly acid to litmus. Store in airtight containers. Protect from light.

Profile

Cresol is a disinfectant with a similar action to phenol (p.1656); suitable precautions should be taken to prevent absorption through the skin.

It has been used as Cresol and Soap Solution (BP 1968) (Lysol) as a general disinfectant but it has been largely superseded by other, less irritant, phenolic disinfectants. Cresol has been used in dentistry, alone or with formaldehyde, but is caustic to the skin and unsuitable for skin and wound disinfection. The cresols have been widely used in disinfectants for domestic and hospital use. Cresol is also used as an antimicrobial preservative in parenteral pharmaceutical preparations and in some topical formulations.

Poisoning. References to poisoning with cresol solutions.[1-7]

1. Côté M-A, *et al.* Acute Heinz-body anaemia due to severe cresol poisoning: successful treatment with erythrocytapheresis. *Can Med Assoc J* 1984; **130:** 1319–22.
2. Wu ML, *et al.* Concentrated cresol intoxication. *Vet Hum Toxicol* 1998; **40:** 341–3.
3. Hashimoto T, *et al.* Marked increases of aminotransferase levels after cresol ingestion. *Am J Emerg Med* 1998; **16:** 667–8.
4. Sakai Y, *et al.* Chemical burn with systemic cresol intoxication. *Pediatr Int* 1999; **41:** 174–6.
5. Monma-Ohtaki J, *et al.* An autopsy case of poisoning by massive absorption of cresol a short time before death. *Forensic Sci Int* 2002; **126:** 77–81.
6. Hayakawa M. Severe hepatic dysfunction following cresol poisoning. *Intensive Care Med* 2002; **28:** 1190–1.
7. Kamijo Y, *et al.* Hepatocellular injury with hyperaminotransferasemia after cresol ingestion. *Arch Pathol Lab Med* 2003; **127:** 364–6.

Preparations

Proprietary Preparations (details are given in Part 3)
Ital.: Creolina.

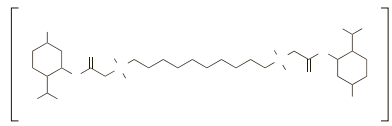
Multi-ingredient: ***Arg.:*** Algiodent; Sulfanoral T; ***Austral.:*** Formo-Cresol Mitis; ***Canad.:*** Gernel; ***Spain:*** Tifell†; ***USA:*** Cresylate.

Decamethoxine

Dekametoksin. *N,N,N′,N′*-Tetramethyl-*N,N′*-bis(2-{[5-methyl-2-(1-methylethyl)-cyclohexyl]oxy}-2-oxoethyl)-1,10-decanediaminium dichloride.

Декаметоксин

$C_{38}H_{74}Cl_2N_2O_4$ = 693.9.
CAS — 38146-42-8.



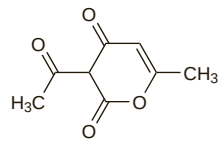
Profile

Decamethoxine is a quaternary ammonium antiseptic and disinfectant with actions and uses similar to those of other cationic surfactants (see Cetrimide, p.1634). It is used topically for disinfection of the skin and mucous membranes and for disinfection of equipment. Decamethoxine is also used as a gargle for infections of the oral cavity and has been used topically or as an irrigation for infections of the skin and various body cavities.

Dehydroacetic Acid

Deshidroacético, ácido; Methylacetopyronone. 3-Acetyl-6-methyl-2*H*-pyran-2,4(3*H*)-dione (keto form); 3-Acetyl-4-hydroxy-6-methyl-2*H*-pyran-2-one (enol form).

$C_8H_8O_4$ = 168.1.
CAS — 520-45-6 (keto form); 771-03-9 (enol form).



(keto form)

Pharmacopoeias. In *USNF*.
USNF 26 (Dehydroacetic Acid). A white or nearly white, crystalline powder. Very slightly soluble in water; soluble in aqueous solutions of alkalis. One g dissolves in about 35 mL of alcohol and in 5 mL of acetone.

Sodium Dehydroacetate

Deshidroacetato sódico. The sodium salt of 3-acetyl-6-methyl-2*H*-pyran-2,4(3*H*)-dione.

$C_8H_7NaO_4$ = 190.1.
CAS — 4418-26-2.

Pharmacopoeias. In *USNF*.
USNF 26 (Sodium Dehydroacetate). A white or practically white, odourless powder. Freely soluble in water, in glycerol, and in propylene glycol.

Incompatibility. The activity of sodium dehydroacetate may be reduced by alkaline pH or interaction with nonionic surfactants.

Profile

Dehydroacetic acid and sodium dehydroacetate have some antifungal activity and have been used in the preservation of cosmetics and oral preparations.

Preparations

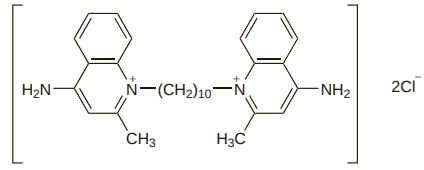
Proprietary Preparations (details are given in Part 3)
Multi-ingredient: ***Venez.:*** Photoderm AKN.

Dequalinium Chloride *(BAN, rINN)*

BAQD-10; Cloruro de decualinio; Decalinium Chloride; Decaminum; Dekalinyum Klorür; Dekvalinio chloridas; Dekvalinium dichlorid; Dekvaliniumklorid; Dekvalinium-klorid; Dekvaliniumkloridi; Dequalinii chloridum; Dequalinii Dichloridum; Déqualinium, chlorure de. *N,N*-Decamethylenebis(4-amino-2-methylquinolinium chloride).

Деквалиния Хлорид

$C_{30}H_{40}Cl_2N_4$ = 527.6.
CAS — 6707-58-0 (dequalinium); 522-51-0 (dequalinium chloride); 4028-98-2 (dequalinium acetate); 16022-70-1 (dequalinium salicylate).
ATC — D08AH01; G01AC05; R02AA02.
ATC Vet — QD08AH01; QG01AC05; QR02AA02.



Pharmacopoeias. In *Eur.* (see p.vii).
Ph. Eur. 6.2 (Dequalinium Chloride). A white or yellowish-white, hygroscopic powder. Slightly soluble in water and in alcohol. Store in airtight containers.

Incompatibility. Dequalinium chloride is incompatible with soaps and other anionic surfactants, with phenol, and with chlorocresol.

Profile

Dequalinium chloride is a bisquaternary quinolinium antiseptic, bactericidal against many Gram-positive and Gram-negative bacteria, and effective against fungi. It is mainly used in the form of lozenges in the treatment of minor infections of the mouth and throat. It has been applied topically in the treatment of skin and vaginal infections.

Dequalinium salicylate and undecenoate have also been used.

Preparations

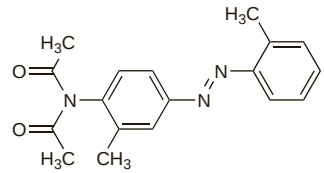
Proprietary Preparations (details are given in Part 3)
Austria: Dequavagyn; Evazol; Sorot; Tonsillol; ***Belg.:*** Anginol; Laryngarsol; ***Canad.:*** Dequadin; ***Chile:*** Larylin†; ***Ger.:*** Evazol; Fluomycin N; Gurgellosung-ratiopharm; Maltyl†; Sorot; Stada Gurgellosung†; ***Hong Kong:*** Delin; Dequadin; Roxine; ***Indon.:*** Decamedin; Degirol; SP Troches; ***Irl.:*** Dequadin; ***Ital.:*** Dequadin; Dequosangola; Faringina; Goladin; Osangin; Pumilsan; ***Malaysia:*** Delin; Denium†; DQM; SP Troches; Synti†; Uphadeq†; ***Mex.:*** Apocatil†; ***Neth.:*** Gargilon; Natterman Streptofree; ***Philipp.:*** Dequadin; ***S.Afr.:*** Dequadin†; ***Singapore:*** Beacons DQ; Dequa-loz; Dequadin; SP Troches; ***Spain:*** Dequadin†; ***Switz.:*** Decatylene; Fluomizin; Pastilles pour la gorge formule 535†; ***Thai.:*** Decho; Deo; Dequadin; V Day Lozenges†; ***Turk.:*** Dequadin; ***UK:*** Dequadin; Labosept; ***Venez.:*** Dequadin; Laimolin.

Multi-ingredient: ***Austria:*** Dequafungan; Dequalinetten; Dequonal; Eucillin; Fluorex Plus; Tetesept; ***Belg.:*** Angin-San; Anginol-Lidocaine; Buccosan†; Dequalid; Ororhinathiol; Tricidine Dequalinium†; ***Braz.:*** Dequadin; ***Cz.:*** Larypront†; Stas†; Tetesept Angidin†; ***Fin.:*** Septison; ***Fr.:*** Humex Mal de Gorge sans sucre; ***Ger.:*** Corti-Dynexan†; Dequonal; Ephepect-Blocker-Pastillen N; Inspirol Halsschmerztabletten†; Jasimenth CN; Mycatox†; Otolitan N farblos†; Wick Sulagil; ***Hong Kong:*** Decatylen; Deq; Ephepect Blocker; Quadezyme; ***Indon.:*** Sentril; ***Irl.:*** Dequacaine; ***Ital.:*** Lisomucil Gola; Transpulmina Gola; ***Malaysia:*** Decatylen; Deq; Upha Lozenges; ***Mex.:*** Angenovag; ***Norw.:*** Apolar med dekvalin; ***Pol.:*** Tetesept; ***Port.:*** Anginova; Decatyleno; Dek; Medifon; ***S.Afr.:*** Dequadin Mouth Paint; ***Singapore:*** Decatylen; Deq; ***Spain:*** Anginovag; Roberfarin; Sedofarin; ***Switz.:*** Anginova†; Arbid-top; Decasept N; Decatylene Neo; Dequonal; Gramipan†; Neo-Bucosin†; Tyroqualine; ***Thai.:*** Deq; Detoch†; Sentril; ***UK:*** Dequacaine; ***Venez.:*** Alantamida; Benzodiazol; Laimoqualin.

Diacetylaminoazotoluene

Diacetazotol; Diacetilaminoazotoluene; Pellidol. 4-Diacetylamino-2′,3-dimethylazobenzene.

$C_{18}H_{19}N_3O_2$ = 309.4.
CAS — 83-63-6.



Profile

Diacetylaminoazotoluene is an antiseptic that has been used topically to promote wound healing.