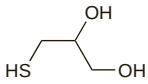
Monothioglycerol

α-Monothioglycerol; Monotioglicerol; Thioglycerol. 3-Mercaptopropane-1,2-diol.

$C_3H_8O_2S$ = 108.2.

CAS — 96-27-5.



Pharmacopoeias. In *USNF*.

USNF 26 (Monothioglycerol). A colourless or pale yellow, viscous, hygroscopic liquid with a slight odour of sulfide. Freely soluble in water; miscible with alcohol; insoluble in ether. A 10% solution in water has a pH of 3.5 to 7.0. Store in airtight containers.

Profile

Monothioglycerol is used as an antoxidant preservative in pharmaceutical preparations. It has some antimicrobial activity.

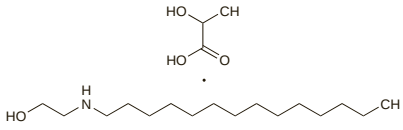
Myralact *(BAN, pINN)*

Miralacto; Myralactum. (2-Hydroxyethyl)tetradecylammonium lactate.

Миралакт

$C_{19}H_{41}NO_4$ = 347.5.

CAS — 15518-87-3.



Profile

Myralact 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)

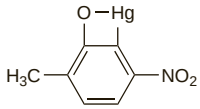
Multi-ingredient: ***Hong Kong:*** Ginetris†.

Nitromersol

5-Methyl-2-nitro-7-oxa-8-mercurabicyclo[4.2.0]octa-1,3,5-triene.

$C_7H_5HgNO_3$ = 351.7.

CAS — 133-58-4.



Pharmacopoeias. In *US*.

USP 31 (Nitromersol). A brownish-yellow to yellow odourless powder or granules. Very slightly soluble in water, in alcohol, in acetone, and in ether; soluble in solutions of alkalis and of ammonia with the formation of salts. Store in airtight containers. Protect from light.

Incompatibility. Nitromersol is incompatible with metals and sulfides. Its antimicrobial activity may be diminished in the presence of organic material.

Adverse Effects and Treatment

As for Mercury, p.2341.

Uses and Administration

Nitromersol is a mercurial antiseptic effective against some bacteria. It is not effective against spores or acid-fast bacteria. It has been used for superficial skin infections and for disinfection of the skin prior to surgical treatment.

Preparations

USP 31: Nitromersol Topical Solution.

Proprietary Preparations (details are given in Part 3)

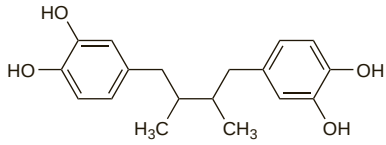
Multi-ingredient: ***Austral.:*** Butesin Picrate†; ***Chile:*** Butesin.

Nordihydroguaiaretic Acid

Acidum Nordihydroguaiareticum; NDGA; Nordihidroguayarético, ácido; Nordihydroguajareettiha ppo; Nordihydroguajaretsyra. 4,4′-(2,3-Dimethyltetramethylene)bis(benzene-1,2-diol).

$C_{18}H_{22}O_4$ = 302.4.

CAS — 500-38-9.



Profile

Nordihydroguaiaretic acid has been used as an antoxidant preservative. Allergic contact dermatitis has been reported.

Noxytiolin *(BAN, rINN)*

Noxitiolina; Noxythiolin; Noxytioline; Noxytiolinum. 1-Hydroxymethyl-3-methyl-2-thiourea.

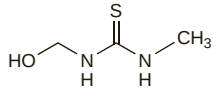
Нокситиолин

$C_3H_8N_2OS$ = 120.2.

CAS — 15599-39-0.

ATC — B05CA07.

ATC Vet — QB05CA07.



Adverse Effects and Treatment

When noxytiolin is given initially by irrigation for the treatment of the purulent infected bladder there may be an intense reaction with a burning sensation and the passage of large fibrin clumps. Giving it with a local anaesthetic such as tetracaine hydrochloride may control the pain.

Breath odour. A pervasive sweet breath odour characteristic of decaying vegetables has been noted in patients treated with peritoneal dialysis fluid containing noxytiolin.[1] The odour was attributed to unidentified sulfur metabolites.

1. Stewart WK, Fleming LW. Use your nose. *Lancet* 1983; **i:** 426.

Uses and Administration

Noxytiolin is an antiseptic with wide antibacterial and antifungal actions. It may act by slowly releasing formaldehyde in solution.

For instillation into, or irrigation of, the peritoneal cavity or other body cavities, a 1 or 2.5% solution is used. Solutions of noxytiolin should be warmed to 37° before instillation or irrigation. Treatment is usually for 3 to 7 days. The normal total daily amount used in adults should not exceed 5 g for instillation or 10 g for continuous irrigation.

Action. Although noxytiolin has generally been thought to act, at least in part, by slowly releasing formaldehyde into solution, it has been reported[1] that much smaller amounts are released than have previously been thought and that the antimicrobial effects of noxytiolin solutions cannot be attributed solely to the presence of formaldehyde. There is evidence *in vitro* that noxytiolin might reduce the adherence of micro-organisms to epithelial surfaces.[2]

1. Gorman SP, *et al*. Formaldehyde release from noxythiolin solutions. *Pharm J* 1984; **234:** 62–3.
2. Anderson L, *et al*. Clinical implications of the microbial antiadherence properties of noxythiolin. *J Pharm Pharmacol* 1985; **37** (suppl): 64P.

Infections of the pleural cavity. Three patients with pleural empyema or pneumonectomy space infection were treated by irrigation of the cavity with noxytiolin 1% in normal saline for 3 hours, followed by drainage for 1 hour, the cycle being repeated 4-hourly. Infection was eradicated within 21 days in all 3 patients.[1]

1. Rosenfeldt FL, *et al*. Comparison between irrigation and conventional treatment for empyema and pneumonectomy space infection. *Thorax* 1981; **36:** 272–7.

Preparations

Proprietary Preparations (details are given in Part 3)

Fr.: Noxyflex; ***Irl.:*** Noxyflex S; ***UK:*** Noxyflex S.

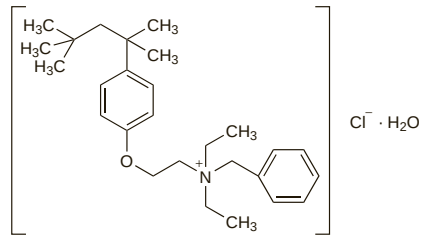
Octafonium Chloride *(BAN, rINN)*

Cloruro de octafonio; Octafonii Chloridum; Octafonium, Chlorure d'; Octaphonium Chloride; Phenoctide. Benzyldiethyl-2-[4-(1,1,3,3-tetramethylbutyl)phenoxy]ethylammonium chloride monohydrate.

Октафония Хлорид

$C_{27}H_{42}ClNO,H_2O$ = 450.1.

CAS — 15687-40-8 (anhydrous octafonium chloride); 78-05-7 (anhydrous octafonium chloride).



Profile

Octafonium chloride is a quaternary ammonium antiseptic with actions and uses similar to those of other cationic surfactants (see Cetrimide, p.1634). It is used in topical preparations for skin disinfection.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: ***S.Afr.:*** Germolene; ***UK:*** Germolene.

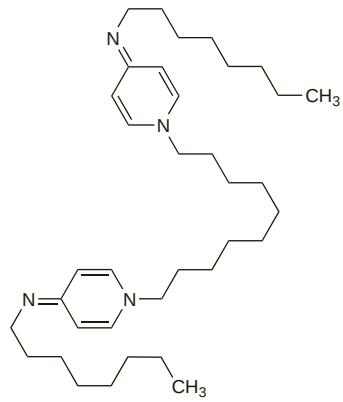
Octenidine Hydrochloride *(BANM, USAN, rINNM)*

Hidrocloruro de octenidina; Octénidine, Chlorhydrate d'; Octenidini Hydrochloridum; Win-41464 (octenidine); Win-41464-2 (octenidine hydrochloride); Win-41464-6 (octenidine saccharin). 1,1′,4,4′-Tetrahydro-*N,N*′-dioctyl-1,1′-decamethylenedi-(4-pyridylideneamine) dihydrochloride.

Октенидина Гидрохлорид

$C_{36}H_{62}N_4,2HCl$ = 623.8.

CAS — 71251-02-0 (octenidine); 70775-75-6 (octenidine hydrochloride).



(octenidine)

Profile

Octenidine is a bispyridine bactericidal antiseptic with some antiviral and antifungal activity. It has been used as the hydrochloride for skin and mucous membrane disinfection.

Preparations

Proprietary Preparations (details are given in Part 3)

Fr.: Phisomain.

Multi-ingredient: ***Austria:*** Octeniderm; Octenisept; ***Ger.:*** Neo Kodan†; Octenisept; ***Gr.:*** Octeniderm; Octenisept; ***Switz.:*** Octeniderm; Octenisept.

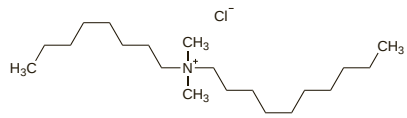
Octyldecyldimethylammonium Chloride

Decyldimethyloctylammonium Chloride; Decyloctyldimethylammonium Chloride; Octyl Decyl Dimethyl Ammonium Chloride. *N,N*-Dimethyl-*N*-octyl-1-decanaminium chloride.

Октилдецилдиметиламмоний Хлорид

$C_{20}H_{44}ClN$ = 334.0.

CAS — 32426-11-2.



Profile

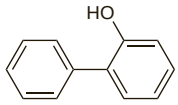
Octyldecyldimethylammonium chloride is a quaternary ammonium disinfectant used in preparations for disinfection of hard surfaces and the skin.

Preparations

Proprietary Preparations (details are given in Part 3)
Multi-ingredient: ***USA:*** Vi Rid-Ready.

Orthophenylphenol

2-Biphenylol; E231; E232 (sodium-*o*-phenylphenol); 2-Hydroxybiphenyl; *o*-Hydroxydiphenyl; Ortofenilfenol. (1,1′-Biphenyl)-2-ol.
$C_{12}H_{10}O$ = 170.2.
CAS — 90-43-7.
ATC — D08AE06.
ATC Vet — QD08AE06.



Profile

Orthophenylphenol is a phenolic disinfectant with antimicrobial properties similar to those of chloroxylenol (p.1640). It is used for disinfection of skin, hands, instruments, and hard surfaces. It also has many industrial and agricultural uses as a preservative for a wide range of materials, particularly against moulds and rots. Sodium-*o*-phenylphenol has been used similarly.

Preparations

Proprietary Preparations (details are given in Part 3)
Ger.: Amocid; ***Ital.:*** Citromedics Disinfettante; Citrosteril Aspiratori; Crescom; Esofenol 60; Germozero Clean; Helix I; Higesan; Neo Esoformolo; Vcanalare†; ***Switz.:*** Manusept†.

Multi-ingredient: ***Austria:*** Dodesept; Dodesept Gefarbt; Kodan; ***Ger.:*** Bomix; Desderman N†; Freka-Derm; Freka-Sept 80; Helipur; Incidin Extra†; Kodan Tinktur Forte†; Primasept Med†; ***Ital.:*** Bergon†; Diaril†; Esofenol Ferri; Germozero Dermo; Germozero Plus; Helipur; Hygienist†; Norica; Sangen Casa; Sterosan; ***Switz.:*** Frekaderm†; Kodan Teinture forte; ***USA:*** BTK-Plus.

Oxychlorosene *(USAN)*

Monoxychlorosene; Oxicloroseno.
$C_{20}H_{34}O_3S,HOCl$ = 407.0.
CAS — 8031-14-9.

Oxychlorosene Sodium *(USAN)*

Oxicloroseno sódico; Sodium Oxychlorosene.
CAS — 52906-84-0.

Profile

Oxychlorosene is the hypochlorous acid complex of a mixture of the phenyl sulfonate derivatives of aliphatic hydrocarbons. It is a chlorine-releasing antiseptic with the general properties of chlorine, p.1638.

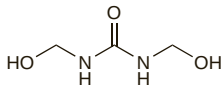
A 0.4% solution of oxychlorosene sodium has been used for cleansing wounds (although chlorine-releasing antiseptics are generally regarded as too irritant for this purpose—see Disinfection, Wounds, under Uses and Administration of Sodium Hypochlorite, p.1662) and for pre-operative skin preparation; a 0.1 or 0.2% solution has been used in urological and ophthalmological disinfection.

Preparations

Proprietary Preparations (details are given in Part 3)
USA: Clorpactin WCS-90.

Oxymethurea

Carbamol; *N,N′*-di(hydroksimetyyli)karbamidi; *N,N′*-di(hydroximetyl)-karbamid; Dihydroxymethyl Carbamide; *N,N′*-di(hydroxymethyl)carbamidum; Oximeturea. *N,N′*-Bis(hydroxymethyl)urea.
$C_3H_8N_2O_3$ = 120.1.
CAS — 140-95-4.



Profile

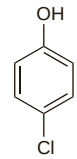
Oxymethurea is an antiseptic included in multi-ingredient preparations intended for the topical treatment of ear infections.

Preparations

Proprietary Preparations (details are given in Part 3)
Multi-ingredient: ***Austria:*** Ciloprin cum Anaesthetico†; ***Fin.:*** Ciloprin cum Anaesthetico†; ***India:*** Otogesic; ***Switz.:*** Ciloprin ca†.

Parachlorophenol

Paraclorofenol. 4-Chlorophenol.
C_6H_5ClO = 128.6.
CAS — 106-48-9.



Pharmacopoeias. In *US.*
US also includes camphorated parachlorophenol.
USP 31 (Parachlorophenol). It consists of white or pink crystals with a characteristic phenolic odour. M.p. about 42°; congealing temperature between 42° and 44°. Sparingly soluble in water and in liquid paraffin; very soluble in alcohol, in chloroform, in ether, in glycerol, and in fixed and volatile oils; soluble in soft paraffin. A 1% solution in water is acid to litmus. Store in airtight containers. Protect from light.
USP 31 (Camphorated Parachlorophenol). It contains not less than 33% and not more than 37% of parachlorophenol and not less than 63% and not more than 67% of camphor, with the sum of the percentages of parachlorophenol and camphor not less than 97% and not more than 103%. Store in airtight containers. Protect from light.

Profile

Parachlorophenol is a chlorinated phenolic disinfectant and antiseptic with similar properties to phenol (p.1656). Camphorated parachlorophenol has been used in dentistry in the treatment of infected root canals.

Preparations

Proprietary Preparations (details are given in Part 3)
Multi-ingredient: ***Ital.:*** Esofenol Ferri; Pasta Iodoformica Radiopaca; ***Spain:*** Cresophene; ***Switz.:*** Cresophene†.

Paraformaldehyde

Paraform; Paraformaldehído; Paraformic Aldehyde; Polymerised Formaldehyde; Polyoxymethylene; Trioxyméthylène.
$(CH_2O)_n$.
CAS — 30525-89-4.

Pharmacopoeias. In *Jpn.*

Adverse Effects, Treatment, and Precautions

As for Formaldehyde Solution, p.1644. There have been reports of allergic reactions and nerve damage associated with the dental use of paraformaldehyde as a root canal sealant; it should not extrude beyond the apex.

Uses and Administration

Paraformaldehyde is a disinfectant and antiseptic with the properties and uses of formaldehyde (p.1645) and is used as a source of formaldehyde. To disinfect rooms it has been vapourised by heating. Tablets prepared for this purpose should be coloured by the addition of a suitable blue dye.

Paraformaldehyde has been used in lozenges for the treatment of minor throat infections. In dentistry, it has been used as an obtundent for sensitive dentine and as an antiseptic in mummifying pastes and for root canals. Paraformaldehyde may also be used for the decontamination of equipment thought to be contaminated with the spores of *Bacillus anthracis*.

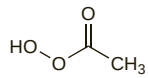
Preparations

Proprietary Preparations (details are given in Part 3)
Israel: Formalin.

Multi-ingredient: ***Ital.:*** Eso 70; Esoform 7 mc; Esoform 70 mc; Pasta Devitalizzante; ***Switz.:*** Asphaline†; Caustinerf forte†.

Peracetic Acid

Acetyl Hydroperoxide; Acidum Peraceticum; Kyselina peroctová; Peracético, ácido; Peroxyacetic Acid.
$C_2H_4O_3$ = 76.05.
CAS — 79-21-0.



Adverse Effects and Precautions

Concentrated peracetic acid is corrosive to the skin. Inhalation may produce respiratory symptoms, including pulmonary oedema, although commercial solutions are claimed to have low vapour activity.

Occupational exposure. Although corrosive and highly irritating to skin, eyes, mucous membranes and respiratory tract, solutions of peracetic acid (with hydrogen peroxide) were thought unlikely to cause sensitisation leading to hypersensitivity reactions in healthcare workers who were occupationally exposed. In contrast, *o*-phthaldialdehyde, although its sensitising potential was much lower than that of glutaral, might cause respiratory and dermal sensitisation.[1]

1. Rideout K, *et al.* Considering risks to healthcare workers from glutaraldehyde alternatives in high-level disinfection. *J Hosp Infect* 2005; **59:** 4–11.

Uses

Peracetic acid is a strong oxidising disinfectant. It is active against many micro-organisms including bacteria, spores, fungi, and viruses. It is used for disinfecting medical equipment including dialysers and endoscopes. It is used in the food industry and for disinfecting sewage sludge, and has been used as a spray for sterilisation of laboratories.

◊ Reviews.

1. Kitis M. Disinfection of wastewater with peracetic acid: a review. *Environ Int* 2004; **30:** 47–55.

Disinfection of dialysis equipment. For use of peracetic acid with hydrogen peroxide in the disinfection of dialysis equipment, see under Hydrogen Peroxide, p.1648.

Disinfection of endoscopes. Peracetic acid has been used to disinfect endoscopes;[1,2] it is a possible alternative to glutaral (see p.1623).

1. Bradley CR, *et al.* Evaluation of the Steris system 1 peracetic acid endoscope processor. *J Hosp Infect* 1995; **29:** 143–51.
2. Middleton AM, *et al.* Disinfection of bronchoscopes, contaminated in vitro with Mycobacterium tuberculosis, Mycobacterium avium-intracellulare and Mycobacterium chelonae in sputum, using stabilized, buffered peracetic acid solution ('Nu-Cidex'). *J Hosp Infect* 1997; **37:** 137–43.

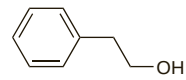
Preparations

Proprietary Preparations (details are given in Part 3)
Fr.: Dynacide; Nu-Cidex†; ***Ger.:*** Sekusept; ***Ital.:*** Esodrox; Ferrister; Renaxid; SaniDrox; Sekusept; Sporidox Plus; ***Singapore:*** Perasafe.

Multi-ingredient: ***Fr.:*** Anioxyde; ***Ger.:*** Peresal†; ***Ital.:*** Adaspor; Esocetic Plus; Esocetic†; Peresal; ***Singapore:*** Virkon.

Phenethyl Alcohol *(BAN)*

Alcohol feniletílico; Alcohol Phenylethylicus; Alkohol fenyloetylowy; Benzyl Carbinol; Phenethanolum; Phenylethyl alcohol. 2-Phenylethanol.
$C_6H_5.CH_2.CH_2OH$ = 122.2.
CAS — 60-12-8.



Pharmacopoeias. In *Pol.* and *US.*
USP 31 (Phenylethyl Alcohol). A colourless liquid with a rose-like odour. Soluble 1 in 60 of water, 1 in less than 1 of alcohol, of chloroform, of ether, of benzyl benzoate, and of diethyl phthalate, and 1 in 2 of alcohol 50%; very soluble in glycerol, in propylene glycol, and in fixed oils; slightly soluble in liquid paraffin. Store in airtight containers in a cool, dry place. Protect from light.

Incompatibility. Phenethyl alcohol is incompatible with oxidising agents and proteins. Activity may be reduced by nonionic surfactants or by adsorption onto low density polyethylene containers.

Profile

Phenethyl alcohol is more active against Gram-negative than Gram-positive bacteria. It is used as a preservative in ophthalmic, nasal, and otic solutions at a concentration of 0.25 to 0.5%, with another bactericide, and up to 1% in topical preparations. It is also used as an antiseptic in topical products in concentrations of up to 7.5%. It is also used as a component of flavouring essences and perfumes.

Phenethyl alcohol may cause eye irritation.

Antimicrobial action. Antimicrobial activity may be enhanced by the addition of phenethyl alcohol to solutions preserved with benzalkonium chloride, chlorhexidine acetate, phenylmercuric nitrate, chlorocresol, or chlorobutanol.[1]

1. Richards RME, McBride RJ. The preservation of ophthalmic solutions with antibacterial combinations. *J Pharm Pharmacol* 1972; **24:** 145–8.

Preparations

Proprietary Preparations (details are given in Part 3)
Multi-ingredient: ***Austral.:*** Resolve Tinea; Sebirinse; ***Canad.:*** Sclerodex; ***Ger.:*** Imazol; ***Irl.:*** Ceanel†; ***NZ:*** Sebirinse; ***UK:*** Ceanel.