Phenol

Carbolic Acid; Fenol; Fenoli; Fenolis; Phenic Acid; Phénol; Phenolum; Phenyl Hydrate; Phenylic Acid. Hydroxybenzene.

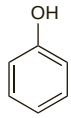
Оксибензол; Фенол

C_6H_5OH = 94.11.

CAS — 108-95-2.

ATC — C05BB05; D08AE03; N01BX03; R02AA19.

ATC Vet — QC05BB05; QD08AE03; QN01BX03; QR02AA19.



Pharmacopoeias. In *Chin.*, *Eur.* (see p.vii), *Jpn*, *US*, and *Viet.* *Br.*, *Swiss*, and *US* also include a monograph for Liquefied Phenol.

Ph. Eur. 6.2 (Phenol). Colourless or faintly pink or faintly yellow deliquescent crystals or crystalline masses. F.p. not less than 39.5°. Soluble in water; very soluble in alcohol, in dichloromethane, and in glycerol. Store in airtight containers. Protect from light.

BP 2008 (Liquified Phenol). An aqueous mixture containing phenol 77.0 to 81.5% w/w in purified water. A colourless to faintly coloured, caustic liquid with a characteristic and not tarry odour. Soluble in water; miscible with alcohol, with ether, and with glycerol. Protect from light. It may congeal or deposit crystals if stored at a temperature below 4°. It should be completely melted before use.

When phenol is to be mixed with collodion, fixed oils, or paraffins, melted phenol should be used, and not Liquefied Phenol.

USP 31 (Phenol). Colourless to light pink, interlaced or separate, needle-shaped crystals, or a white to light pink crystalline mass, with a characteristic odour. It gradually darkens on exposure to light and air. Soluble 1 in 15 of water; very soluble in alcohol, in chloroform, in ether, in glycerol, and in fixed and volatile oils; soluble 1 in 70 of liquid paraffin. A solution of 1 g in 15 mL water is clear and is neutral or acid to litmus. Store in airtight containers. Protect from light.

USP 31 (Liquefied Phenol). Phenol maintained in a liquid condition by the presence of about 10% of water; it contains not less than 89% by weight of phenol. It may contain a suitable stabiliser. A colourless to pink liquid which may develop a red tint upon exposure to air or light, and with a characteristic, somewhat aromatic odour. Miscible with alcohol, with ether, and with glycerol. Store in airtight glass containers. Protect from light.

When phenol is to be mixed with a fixed oil, liquid paraffin, or white soft paraffin, crystalline Phenol and not Liquefied Phenol should be used.

Incompatibility. Phenol is incompatible with alkaline salts and nonionic surfactants. The antimicrobial activity of phenol may be diminished through increasing pH or through combination with blood and other organic matter.

Use for preservation. NOTE. Phenol should not be used to preserve preparations that are to be freeze-dried.

Adverse Effects

When ingested, phenol causes extensive local corrosion, with pain, nausea, vomiting, sweating, and diarrhoea. Excitation may occur initially but it is quickly followed by unconsciousness. There is depression of the CNS, with cardiac arrhythmias, and circulatory and respiratory failure, which may lead to death. Acidosis may develop and occasionally there is haemolysis and methaemoglobinaemia with cyanosis. The urine may become dark brown or green. Pulmonary oedema and myocardial damage may develop, and damage to the liver and kidneys may lead to organ failure.

Severe or fatal poisoning may occur from the absorption of phenol from unbroken skin or wounds and suitable precautions should be taken to prevent absorption. Applied to skin, phenol causes blanching and corrosion, sometimes with little pain. Aqueous solutions as dilute as 10% may be corrosive.

Toxic symptoms may also arise through absorption of phenol vapour by the skin or lungs. Phenol throat spray may cause local oedema.

Cresols and other phenolic substances have similar effects.

Effects on the heart. A 10-year-old boy developed life-threatening premature ventricular complexes during the application of a solution of phenol 40% and croton oil 0.8% in hexachlorophene soap and water for chemical peeling of a giant hairy naevus.[1] Cardiac arrhythmias have been reported after the use of phenol for chemical face peeling.[2] They were also seen in 3 of 16 children who received phenol 5% as a neurolytic.[3]

1. Warner MA, Harper JV. Cardiac dysrhythmias associated with chemical peeling with phenol. *Anesthesiology* 1985; **62:** 366–7.
2. Botta SA, *et al.* Cardiac arrhythmias in phenol face peeling: a suggested protocol for prevention. *Aesthetic Plast Surg* 1988; **12:** 115–17.
3. Morrison JE, *et al.* Phenol motor point blocks in children: plasma concentrations and cardiac dysrhythmias. *Anesthesiology* 1991; **75:** 359–62.

Effects on the kidneys. A 41-year-old man developed acute renal failure due to cutaneous absorption of phenol after falling into a shallow vat of industrial solvent containing 40% phenol in dichloromethane. No ingestion occurred. Other symptoms included 50% body-surface burns, cold extremities, nausea, vomiting, and respiratory distress. The patient required haemodialysis for 3 weeks; some abnormalities of renal function remained one year later.[1]

1. Foxall PJD, *et al.* Acute renal failure following accidental cutaneous absorption of phenol: application of NMR urinalysis to monitor the disease process. *Hum Toxicol* 1989; **9:** 491–6.

Effects on the liver. Phenol-induced hepatotoxicity has been reported[1] in a 43-year-old man after injection sclerotherapy for haemorrhoids with 5% phenol in arachis oil. During treatment the patient experienced pain radiating to the penis, then later developed backache and haematuria, and 6 days later was admitted to hospital with jaundice. He recovered well and his liver enzymes returned to normal levels after 6 months.

1. Suppiah A, Perry EP. Jaundice as a presentation of phenol induced hepatotoxocity [sic] following injection sclerotherapy for haemorrhoids. *Surgeon* 2005; **3:** 43–4.

Effects on sexual function. Three patients developed urinary symptoms and impotence which lasted up to one year after each receiving phenol 5% in arachis oil sclerotherapy for haemorrhoids.[1]

1. Bullock N. Impotence after sclerotherapy of haemorrhoids: case reports. *BMJ* 1997; **314:** 419.

Effects on the throat. Acute life-threatening epiglottitis occurred in a 49-year-old woman after the use of a throat spray containing the equivalent of 1.4% phenol. The reaction may have been anaphylactic or due to a direct toxic effect of the spray.[1] The UK CSM[2] reported in 1990 that it had received 4 reports of oedema of the epiglottis and/or larynx leading to respiratory difficulties. While the condition was rare, the effects were severe; 1 patient died and 2 survived only after emergency hospital treatment.

1. Ho S-L, Hollinrake K. Acute epiglottitis and Chloraseptic. *BMJ* 1989; **298:** 1584.
2. Committee on Safety of Medicines. Chloraseptic throat spray and oedema of the epiglottis and larynx. *Current Problems 28* 1990.

Treatment of Adverse Effects

If phenol has been swallowed, activated charcoal may be useful. Some sources suggest the cautious use of gastric lavage although this is generally inappropriate after ingestion of corrosive substances.

If phenol has been spilled on the skin removal of contaminated clothing and excess phenol should be followed by washing of the skin with glycerol or, alternatively, with copious amounts of water. Macrogol 300 and vegetable oils have also been used.

Contamination of the eyes should be treated by flooding with water or sodium chloride 0.9% only for at least 10 to 15 minutes.

The patient should be kept warm and given supportive treatment. Intravenous sodium bicarbonate should be given where there is metabolic acidosis.

Precautions

Solutions containing phenol should not be applied to large areas of skin or large wounds since sufficient phenol may be absorbed to give rise to toxic symptoms. Phenol should not be used as a throat spray in patients with epiglottitis, or in children aged under 6 years.

Pharmacokinetics

Phenol is absorbed from the gastrointestinal tract and through skin and mucous membranes. It is metabolised to phenylglucuronide and phenyl sulfate, and small amounts are oxidised to catechol and quinol which are mainly conjugated. The metabolites are excreted in the urine; on oxidation to quinones they may tint the urine dark brown or green.

Uses and Administration

Phenol is an antiseptic and disinfectant effective against vegetative Gram-positive and Gram-negative bacteria, mycobacteria, and some fungi, but only very slowly effective against spores. It is also active against certain viruses. Phenol is more active in acid solution.

Aqueous solutions up to 1% are bacteriostatic while stronger solutions are bactericidal.

A 0.5 to 1% solution has been used for its local anaesthetic effect to relieve itching.

A 1.4% solution is used for pain or irritation of the mouth and throat. Weak concentrations (up to 2%) have also been used topically for disinfection. A 5% solution has been used as a disinfectant for excreta.

Oily Phenol Injection (BP 2008), up to 10 mL, has been injected into the tissues around internal haemorrhoids as an analgesic sclerosing agent, but alternative procedures may be preferred. Aqueous phenol has also been used as a sclerosant in the treatment of hydroceles.

Solutions of phenol in glycerol have been given intrathecally for the alleviation of spasticity (p.1887) or injected intrathecally or into soft-tissue structures for the treatment of chronic low back pain. Other types of severe intractable pain may be relieved by injecting aqueous phenol close to motor nerves. Aqueous phenol has been used for chemical sympathectomy in peripheral vascular disorders and for the treatment of urinary incontinence.

Liquefied phenol has been used in the treatment of ingrowing toenails.

Dystonias. Phenol appears to produce a decrease in muscle tone without profound weakness and is considered to be an effective agent in treating focal dystonias.[1] Intramuscular phenol was reported[2] to have produced improvement in 2 adult patients with moderately severe spasmodic torticollis (p.1892) who had not responded adequately to intramuscular injections of botulinum A toxin. Response was maintained by re-injection every 6 months. Following this case report, an open trial[3] was conducted on 3 patients with spasmodic torticollis who had not responded to botulinum toxin A and other drug treatments. After 10 intramuscular injections of phenol, given weekly and then monthly, 2 of the patients showed improvement; one reached partial remission while the other had improvement that lasted for 3 months. The third patient did not respond to treatment with phenol. A study[4] to determine the effectiveness and adverse effects of a 2% phenol block in patients with spasmodic torticollis was conducted in 16 patients, all of whom were refractory to oral drug and rehabilitation therapies. Results showed significant improvement in neck movement and position. However, 4 patients developed reversible sensory disturbance of the transverse cutaneous nerve of the neck area. A patient who developed a focal dystonic contraction of the foot responded to single intramuscular injection of 5% aqueous phenol, after initial treatment with botulinum toxin A had shown no benefit.[5]

1. Zafonte RD, Munin MC. Phenol and alcohol blocks for the treatment of spasticity. *Phys Med Rehabil Clin N Am* 2001; **12:** 817–32.
2. Massey JM. Treatment of spasmodic torticollis with intramuscular phenol injection. *J Neurol Neurosurg Psychiatry* 1995; **58:** 258–9.
3. García Ruiz PJ, Sanchez Bernardos V. Intramuscular phenol injection for severe cervical dystonia. *J Neurol* 2000; **247:** 146–7.
4. Takeuchi N, *et al.* Phenol block for cervical dystonia: effects and side effects. *Arch Phys Med Rehabil* 2004; **85:** 1117–20.
5. Kim J-S, *et al.* Idiopathic foot dystonia treated with intramuscular phenol injection. *Parkinsonism Relat Disord* 2003; **9:** 355–9.

Haemorrhoids. Sclerotherapy with oily phenol injection has been used[1] to treat haemorrhoids (p.1697). The technique for preventing mucosal prolapse is to inject small volumes (about 2 or 3 mL) of a 5% solution of phenol in arachis oil into the submucous space above each of the 3 principal haemorrhoids. Rather than causing the haemorrhoidal veins to thrombose, the injection works by producing submucosal fibrosis, fixing the mucosa to the underlying muscle. However, other techniques for mucosal fixation such as rubber band ligation or perhaps infra-red coagulation are more effective and associated with fewer complications.[2-5]

1. Alexander-Williams J. The management of piles. *BMJ* 1982; **285:** 1137–9.
2. Gartell PC, *et al.* A randomised clinical trial to compare rubber band ligation with phenol injection in the treatment of haemorrhoids. *Gut* 1984; **25:** A563.
3. Ambrose NS, *et al.* Prospective randomised trial of injection therapy against photocoagulation therapy in first and second degree haemorrhoids. *Gut* 1984; **25:** A563–4.
4. Johanson JF, Rimm A. Optimal nonsurgical treatment of hemorrhoids: a comparative analysis of infrared coagulation, rubber band ligation, and injection sclerotherapy. *Am J Gastroenterol* 1992; **87:** 1601–6.
5. MacRae HM, McLeod RS. Comparison of hemorrhoidal treatment modalities: a meta-analysis. *Dis Colon Rectum* 1995; **38:** 687–94.

Ingrowing toenails. Liquefied phenol (88%) ablation has been performed as an alternative to surgical avulsion in the treatment of ingrowing toenails.[1,2] A systematic review[3] concluded that simple nail avulsion combined with treating the nail-bed with phenol was more effective at preventing symptomatic recurrence of ingrowing toenails than cutting out the nail-bed. However, there was a significant increase in postoperative infections when phenol was used.

1. Bostanci S, *et al*. Chemical matricectomy with phenol for the treatment of ingrowing toenail: a review of the literature and follow-up of 172 treated patients. *Acta Derm Venereol* 2001; **81:** 181–3.
2. Andreassi A, *et al*. Segmental phenolization for the treatment of ingrowing toenails: a review of 6 years experience. *J Dermatol Treat* 2004; **15:** 179–81.
3. Rounding C, Bloomfield S. Surgical treatments for ingrowing toenails. Available in The Cochrane Database of Systematic Reviews; Issue 1. Chichester: John Wiley; 2003 (accessed 15/03/06).

Pain. The neurolytic use of phenol to produce destructive nerve block (see under Pain, p.1852) has produced variable results, and some consider the risk of complications outweighs the benefits. However, it may have the advantage over alcohol that it is painless on injection, and smaller volumes can be used, potentially allowing greater precision (see p.1627).

Urinary incontinence. Although injection of phenol into the pelvic plexus to produce partial denervation has been used in the management of severe intractable urge incontinence, its use has been largely abandoned. Some patients, especially those with detrusor hyperreflexia, have derived benefit[1,2] but overall efficacy can be poor and benefits short-lived.[3]

1. Ewing R, *et al*. Subtrigonal phenol injection therapy for incontinence in female patients with multiple sclerosis. *Lancet* 1983; **i:** 1304–5.
2. Blackford HN, *et al*. Results of transvesical infiltration of the pelvic plexuses with phenol in 116 patients. *Br J Urol* 1984; **56:** 647–9.
3. Rosenbaum TP, *et al*. Trans-trigonal phenol failed the test of time. *Br J Urol* 1990; **66:** 164–9.

Preparations

BP 2008: Aqueous Phenol Injection; Liquefied Phenol; Oily Phenol Injection; Phenol and Glycerol Injection;
BPC 1973: Magenta Paint;
USP 31: Camphorated Phenol Topical Gel; Carbol-Fuchsin Topical Solution; Liquefied Phenol; Phenolated Calamine Topical Suspension.

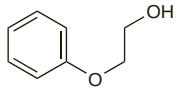
Proprietary Preparations (details are given in Part 3)
Austral.: Summers Eve Disposable†; ***Canad.:*** Chloraseptic Spray; P & S; ***Chile:*** Metapio; ***S.Afr.:*** Medi-Keel A; SB Aurico Ear Drops; Septosol; ***Thai.:*** Pose-Cresol; ***UK:*** Ultra Chloraseptic; ***USA:*** Cheracol Sore Throat; Chloraseptic Kids Sore Throat Spray; Chloraseptic Sore Throat; Green Throat Spray; P & S; Phenaseptic; Red Throat Spray; Triaminic Sore Throat Spray; Ulcerease.

Multi-ingredient: ***Arg.:*** Aceite Esmeralda Moone; Callicida; Dermithan; Manzan; Piracalamina; Prurisedan; Prurisedan Rosa; ***Austral.:*** Ayrton's Chilblain; Calamine Lotion; Egopsoryl TA; Nyal Toothache Drops; Sarna; ***Austria:*** Herposicc; ***Belg.:*** Eucalyptine Pholcodine; Sedemol; Sulfa-Sedemol; ***Braz.:*** Algidente†; Cloraseptic; Dentisan; Otoloide; Pradente†; Timpanol†; Um Instante†; Usedent†; ***Canad.:*** Anbesol Maximum Strength; Blistex DCT Lip Balm; Blistex Lip Medex; Blistex Medicated Lip Conditioner Jar†; Blistex Medicated Lip Ointment; Boil Ease†; Cepastat; Chapstick Medicated Lip Balm†; Lip Medex†; Mecca; Ozonol; Phenoris; ***Chile:*** Blistex; Chapstick Medicated; ***Fr.:*** Brulex; ***Hong Kong:*** Blistex Lip Ointment†; Cepastat; Doans†; Egopsoryl TA; ***Hung.:*** Reparon; ***Ital.:*** Creosoto Composto; Diaril†; Eso Din; Fucsina Fenica; Lavanda Sofar; Ondroly-A†; Pinselina Knapp; ***Malaysia:*** Egopsoryl TA; Sarna; ***Mex.:*** Forcremol; ***Neth.:*** Agre-Gola; ***NZ:*** Egopsoryl TA; Toothache Drops†; ***Philipp.:*** Calmoseptine; Sarna; ***Pol.:*** Pigmentum Castellani; ***Port.:*** Calicida Indiano; ***S.Afr.:*** Alpha Toothache Essence; Biohist; Blistex; Calasthetic; Cuticura†; Germolene; Lacto Calamine†; Prep; SB Universal Ointment; TCP; ***Singapore:*** Cepastat; Egopsoryl TA; Sarna; ***Spain:*** Argentofenol†; Carbocaina†; Dermomycose Liquido; Odontocromil c Sulfamida†; Otocerum; Otogen Calmante; Sabanotropico; ***Switz.:*** Caustinerf forte†; ***Thai.:*** Con Con; Lanol; Sarna; Zema; ***Turk.:*** Disinol; ***UK:*** Blistex Relief Cream; Chymol; Colsor; Dermacreme; Germolene; Lacto Calamine; TCP; ***USA:*** Anbesol; Blistex; Blistex Lip Balm; Boil Ease; Campho-Phenique; Castaderm; Cepastat; Cepastat Cherry; Chapstick Medicated Lip Balm; Columbia Antiseptic Powder; Debacterol; Heal Aid Plus; Lip Medex; Lipmagik; Massengill; Mycinette; Nasal Jelly; Orabase Lip; Orasol; Phylorinol; Skeeter Stik; Sting-Eze; Unguentine; Unguentine Plus.

Phenoxyethanol

Ethylene Glycol 2-Monophenyl Ether; Ethyleneglycol Monophenylether; Fenoksietanoli; Fenoksietanolis; Fenoksyetanol; Fenoxietanol; Fenoxyethanol; Phenoxyaethanol; Phénoxyéthanol; Phenoxyethanolum; β-Phenoxyethyl Alcohol; 2-Phenoxyethyl Alcohol. 2-Phenoxyethanol.

$C_8H_{10}O_2$ = 138.2.
CAS — 122-99-6.



Pharmacopoeias. In *Eur.* (see p.vii). Also in *USNF.*
Ph. Eur. 6.2 (Phenoxyethanol). A colourless slightly viscous liquid. Slightly soluble in water, in arachis oil and in olive oil; miscible with alcohol, with acetone, and with glycerol.
USNF 26 (Phenoxyethanol). A colourless, slightly viscous liquid. Specific gravity 1.105 to 1.110 at 20°. Slightly soluble in water; miscible with alcohol, with acetone, and with glycerol; slightly soluble in arachis oil and in olive oil. Store in a dry place, in airtight containers at a temperature of 8° to 15°. Protect from light.

Incompatibility. The activity of phenoxyethanol may be reduced by interaction with nonionic surfactants and possibly by adsorption onto PVC.

Profile

Phenoxyethanol is effective against strains of *Pseudomonas aeruginosa* but less so against other Gram-negative and Gram-positive bacteria. It has been used as a preservative in cosmetics and topical pharmaceuticals at a concentration of 0.5 to 1%. It is often used with other preservatives, commonly hydroxybenzoates, to obtain a wider spectrum of antimicrobial activity.

Phenoxyethanol is used in concentrations of about 2% as an antiseptic for minor infections of skin, wounds, and mucous membranes. Aqueous solutions may be prepared by shaking the phenoxyethanol with hot water until dissolved, then adjusting to final volume when cool. Preparation of the solution can be aided by propylene glycol.

Phenoxypropanol and chlorophenoxyethanol are related compounds used in topical preparations.

Preparations

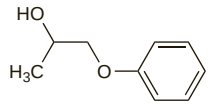
Proprietary Preparations (details are given in Part 3)
Singapore: Acnederm Wash; ***UK:*** Biactol Liquid.

Multi-ingredient: ***Arg.:*** Cicatul; Polviderm NF; ***Austral.:*** Acnederm Foaming Wash; Acnederm Medicated; ***Austria:*** Octenisept; ***Chile:*** Eucerin Piel Grasa; ***Fr.:*** Alco-Aloe; Manugel; ***Ger.:*** Gigasept Med†; Lysetol Med†; Octenisept; ***Gr.:*** Octenisept; ***Ital.:*** Decon Ovuli; Fitostimoline; ***Malaysia:*** Acnederm Foaming Wash; Acnederm Lotion; ***Mex.:*** Fitoestimulina; Italdermol; ***NZ:*** Acnederm; Acnederm Foaming Wash; ***Singapore:*** Acnederm; ***Switz.:*** Ederphyt†; Octenisept; ***USA:*** Bodi Kleen; ***Venez.:*** Glizigen; Photoderm AKN.

Phenoxyisopropanol

Fenoxiisopropanol; Phenoxyisopropyl Alcohol. 1-phenoxypropan-2-ol.

$C_9H_{12}O_2$ = 152.2.
CAS — 770-35-4.



Profile

Phenoxyisopropanol is used as a preservative and as an antiseptic in preparations for the treatment of acne, insect bites, and minor abrasions to the skin.

Preparations

Proprietary Preparations (details are given in Part 3)
Austral.: Clearasil Daily Face Wash.

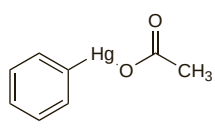
Phenylmercuric Salts

Fenilmercurio, sales.

Phenylmercuric Acetate

Fenilgyvsidabrio acetatas; Fenil-higany-acetát; Fenilmercurio, acetato de; Fenylhydrargyriumacetát; Fenylkvicksilveracetat; Fenylortęciowy octan; Fenyylimerkuriasetaatti; Phenylhydrargyni acetas; Phenylhydrargyri Acetas; Phénylmercure, acétate de; PMA. (Acetato)phenylmercury.

$C_8H_8HgO_2$ = 336.7.
CAS — 62-38-4.



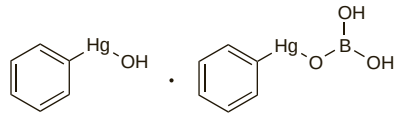
Pharmacopoeias. In *Eur.* (see p.vii). Also in *USNF.*
Ph. Eur. 6.2 (Phenylmercuric Acetate). A white or yellowish crystalline powder or small, colourless crystals. Slightly soluble in water; soluble in alcohol and in acetone. Protect from light.
USNF 26 (Phenylmercuric Acetate). A white to creamy-white, odourless, crystalline powder or small white prisms or leaflets. Soluble 1 in 180 of water, 1 in 225 of alcohol, 1 in 6.8 of chloroform, and 1 in 200 of ether; soluble in acetone. Store in airtight containers. Protect from light.

Incompatibility. The incompatibilities of phenylmercuric salts are described under Phenylmercuric Nitrate, below.

Phenylmercuric Borate *(rINN)*

Borato de fenilmercurio; Fenilgyvsidabrio boratas; Fenil-higany-borát; Fenylhydrargyriumborát; Fenylkvicksilverborat; Fenylortęciowy boran; Fenyylimerkuriboraatti; Hydrargyrum Phenyloboricum; Phenomerborum; Phenylhydrargyri boras; Phénylmercure, borate de.

Фенилмеркурборат
$C_6H_5HgOH,C_6H_5HgOB(OH)_2$ = 633.2 or C_6H_5HgOH, $C_6H_5HgBO_2$ = 615.2.
CAS — 8017-88-7 ($C_{12}H_{13}BHg_2O_4$); 6273-99-0 ($C_{12}H_{11}BHg_2O_3$); 102-98-7 ($C_6H_7BHgO_3$).
ATC — D08AK02.
ATC Vet — QD08AK02.



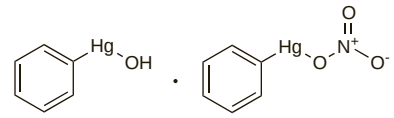
Pharmacopoeias. In *Eur.* (see p.vii).
Ph. Eur. 6.2 (Phenylmercuric Borate). A compound consisting of equimolecular proportions of phenylmercuric orthoborate and phenylmercuric hydroxide ($C_{12}H_{13}BHg_2O_4$) or of the dehydrated form (metaborate, $C_{12}H_{11}BHg_2O_3$) or a mixture of the two compounds. Colourless shiny crystals or a white or slightly yellowish crystalline powder. Slightly soluble in water and in alcohol. Protect from light.

Incompatibility. The incompatibilities of phenylmercuric salts are described under Phenylmercuric Nitrate, below.

Phenylmercuric Nitrate

Basic Phenylmercury Nitrate; Fenilgyvsidabrio nitratas; Fenil-higany-nitrát; Fenilmercurio, nitrato de; Fenylhydrargyriumnitrát; Fenylkvicksilvernitrat; Fenylortęci(II) azotan; Fenyylimerkurinitraatti; Phenylhydrargyri nitras; Phénylmercure, nitrate de; PMN. Nitratophenylmercury.

$C_6H_5HgOH,C_6H_5HgNO_3$ = 634.4.
CAS — 8003-05-2 ($C_6H_5HgOH,C_6H_5HgNO_3$); 55-68-5 ($C_6H_5HgNO_3$).
ATC — D09AA04.
ATC Vet — QD09AA04.



($C_6H_5HgOH,C_6H_5HgNO_3$)

Pharmacopoeias. In *Eur.* (see p.vii) and *Int.* Also in *USNF.*
Ph. Eur. 6.2 (Phenylmercuric Nitrate). A mixture of phenylmercuric nitrate and phenylmercuric hydroxide. A white or pale yellow powder. Very slightly soluble in water and in alcohol; slightly soluble in hot water; dissolves in glycerol and in fatty oils. Protect from light.
USNF 26 (Phenylmercuric Nitrate). A mixture of phenylmercuric nitrate and phenylmercuric hydroxide. A white crystalline powder. Soluble 1 in 600 of water; slightly soluble in alcohol and in glycerol; more soluble in the presence of nitric acid or alkali hydroxides. A saturated solution in water is acid to litmus. Store in airtight containers. Protect from light.

Incompatibility. The activity of phenylmercuric salts may be reduced by interaction with compounds such as kaolin, magnesium trisilicate, starch, and talc.[1,2] Disodium edetate and sodium thiosulfate can also produce inactivation.[3] Sodium metabisulfite can lead to precipitation,[3] or chemical destruction,[4] but it can also produce increased activity.[3] Other incompatibilities include bromides, iodides (chlorides to a lesser extent), metals, and ammonia and its salts.[5] There can be adsorption onto rubber and some plastics[5,6] although sorption by low density polyethylene can be inhibited by phosphate ions.[7] Some filters, though not membrane filters, used for sterilisation removed considerable amounts of phenylmercuric nitrate from solution.[8] The pH may also affect activity.[9]

1. Yousef RT, *et al*. Effect of some pharmaceutical materials on the bactericidal activities of preservatives. *Can J Pharm Sci* 1973; **8:** 54–6.
2. Horn NR, *et al*. Interactions between powder suspensions and selected quaternary ammonium and organomercurial preservatives. *Cosmet Toilet* 1980; **95:** 69–73.
3. Richards RME, Reary JME. Changes in antibacterial activity of thiomersal and PMN on autoclaving with certain adjuvants. *J Pharm Pharmacol* 1972; **24** (suppl): 84P–89P.
4. Collins AJ, *et al*. Incompatibility of phenylmercuric acetate with sodium metabisulphite in eye drop formulations. *J Pharm Pharmacol* 1985; **37** (suppl): 123P.