

## Preparations

### Proprietary Preparations (details are given in Part 3)

**Chile:** Venoserin; **Ger.:** Duoform Novo†; Fagorutin Ruscus; Phlebodril mono; Rhenus med†; Venelbin ruscus†; Venobiase mono†.

**Multi-ingredient:** **Arg.:** Celu-Atlas; CVP Flebo; Cyclo 3; Fiblast; Venart; Venidium; **Austral.:** Bioglan Cirlot†; Extralife Leg-Care; Proflot†; **Austria:** Phlebodril; **Cz.:** Cyclo 3 Fort; **Fr.:** Avene Antirougeurs; Bicirkan; Cirkar; Climaxol; Creme au Melilot Composee; Cyclo 3; Cyclo 3 Fort; Evarose; Veinobiase; Verry†; **Ger.:** Phlebodril; Phlebodril N; Venobiase†; **Gr.:** Cyclo 3 Forte; **Indon.:** Venos; **Ital.:** Altadrine; Angiorex Complex; Capilli Venogel; Dermoprol†; Flebolider; **Mex.:** Fabroven; **Pol.:** Cyclo 3 Fort; **Port.:** Creme Laser Hidrante; Cyclo 3; **Rus.:** Cyclo 3 (Цикло 3); Cyclo 3 Fort (Цикло-3 Форт); **Singapore:** Cyclo 3; Cyclo 3 Fort; **Spain:** Fabroven; Rus-cimelt†; Venofit†; **Switz.:** Phlebodril; Phlebodril N; Veino-Gouttes-N†; **Thai:** Cyclo 3 Fort.

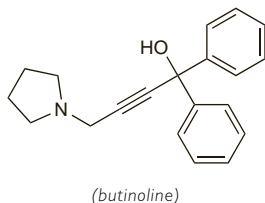
## Butinoline Phosphate (rINN)

Butinoline, Phosphate de; Butinolini Phosphas; Fosfato de butinolina. 1,1-Diphenyl-4-pyrrolidino-1'-yl but-2-yn-1-ol phosphate.

Бутинолина Фосфат

$C_{20}H_{21}NO_4$  = 389.4.

CAS — 968-63-8 (butinoline); 54118-66-0 (butinoline phosphate).



## Profile

Butinoline phosphate is used as an antispasmodic in preparations for gastrointestinal disorders.

## Preparations

### Proprietary Preparations (details are given in Part 3)

**Multi-ingredient:** **Austria:** Spasmo-Solugastril; **Ger.:** Spasmo-Nervogastrol†; Spasmo-Solugastril†.

## Butterbur

### Profile

The leaves and roots of butterbur, *Petasites hybridus* (*P. officinalis*) (Asteraceae), have antispasmodic and anti-inflammatory properties and have been used in herbal preparations for a variety of disorders, including gastrointestinal and respiratory-tract disorders, and migraine.

### References.

- Schapowal A. Randomised controlled trial of butterbur and cetirizine for treating seasonal allergic rhinitis. *BMJ* 2002; **324**: 144–6.
- Lee DK, *et al.* Butterbur, a herbal remedy, attenuates adenosine monophosphate induced nasal responsiveness in seasonal allergic rhinitis. *Clin Exp Allergy* 2003; **33**: 882–6.
- Diener HC, *et al.* The first placebo-controlled trial of a special butterbur root extract for the prevention of migraine: reanalysis of efficacy criteria. *Eur Neurol* 2004; **51**: 89–97.
- Jackson CM, *et al.* The effects of butterbur on the histamine and allergen cutaneous response. *Ann Allergy Asthma Immunol* 2004; **92**: 250–4.
- Lipton RB, *et al.* Petasites hybridus root (butterbur) is an effective preventive treatment for migraine. *Neurology* 2004; **63**: 2240–4.
- Pothmann R, Danesch U. Migraine prevention in children and adolescents: results of an open study with a special butterbur root extract. *Headache* 2005; **45**: 196–203.

## Preparations

### Proprietary Preparations (details are given in Part 3)

**Ger.:** Petadolex; Petaforce V; **Switz.:** DoloMed†; Petadolor†; Pollivita; Te-salin.

**Multi-ingredient:** **Switz.:** Dragees aux figues avec du sene; Dragees pour la detente nerveuse; Relaxane; Valverde Constipation dragees; Valverde Detente dragees; Wala Pulmonium suc contre la toux.

## Butyl Nitrite

Nitrito de butilo.

$C_4H_9NO_2$  = 103.1.

NOTE. The following terms have been used as 'street names' (see p.vi) or slang names for various forms of butyl nitrite: Bolt; Climax; Locker room; Poppers; Rush; Snappers; Video head cleaner.

## Profile

Butyl nitrite is not used medicinally but, as with other volatile nitrites, is abused for its vasodilating and related effects following inhalation (see Abuse, under Amyl Nitrite, p.1437).

## Cadmium

Cadmio; Kadm; Kadmium.

Cd = 112.411.

CAS — 7440-43-9.

## Cadmium Sulfate

Cadmii sulfas; Cadmium, sulfate de; Cadmiumsulfatti; Cadmium-sulfat; Kadmu siarczan.

$CdSO_4$  = 208.5.

CAS — 10124-36-4.

**Pharmacopoeias.** *Eur.* (see p.vii) includes a form for homeopathic preparations.

**Ph. Eur. 6.2** (Cadmium Sulphate Hydrate for Homeopathic Preparations; Cadmi Sulfas Hydricus ad Praeparationes Homoeopathicas). A white or almost white, crystalline powder. Freely soluble in water; practically insoluble in alcohol.

## Profile

Cadmium is used in a wide range of manufacturing processes and cadmium poisoning presents a recognised industrial hazard. Inhalation of cadmium fumes during welding procedures may not produce symptoms until 12 to 36 hours have passed and these symptoms include respiratory distress leading to pulmonary oedema; kidney toxicity is also a feature of acute cadmium poisoning. Ingestion of cadmium or its salts has the additional hazard of severe gastrointestinal effects. Cadmium has a long biological half-life and accumulates in body tissues, particularly the liver and kidneys. Chelation therapy is not generally recommended for cadmium poisoning, although sodium calcium edetate has been used after acute ingestion. However, chelators do not increase cadmium elimination in chronic poisoning and use of dimercaprol may increase cadmium toxicity and should be avoided. Chronic exposure to cadmium results in progressive renal impairment and other effects (see below).

Cadmium sulfide has been used topically in some countries for the treatment of skin and scalp conditions. Cadmium sulfate has been included in some preparations for the treatment of eye irritation.

**Homeopathy.** Cadmium has been used in homeopathic medicines under the following names: Cadmium metallicum; Cad. met.

Cadmium sulfate has been used in homeopathic medicines under the following names: Cadmium sulfuricum; Cadmium sulphuricum; Cad. sul.

Cadmium sulphide has been used in homeopathic medicines under the following names: Cadmium sulphuratum; Cad. sulph.

**Adverse effects.** The toxicity of cadmium has been reviewed.<sup>1</sup> Environmental or occupational exposure to cadmium has been associated with renal dysfunction,<sup>2-5</sup> although this may be reversible if exposure is reduced.<sup>6</sup> A reduction in bone density may also occur.<sup>7</sup> Fatalities due to industrial exposure or self-poisoning have also been reported.<sup>8,9</sup> No effect on testicular endocrine function was observed in 77 industrial workers exposed to cadmium.<sup>3</sup>

An increased incidence of cancer of the prostate has been reported in subjects exposed to high levels of cadmium but the evidence is not conclusive.<sup>10</sup> There may be an association between cadmium exposure and lung cancer, although observations on this type of cancer are difficult to interpret because of exposure to other hazards such as smoking.

- Fielder RJ, Dale EA. Cadmium and its compounds. *Toxicity Review* 7. London: HMSO, 1983.
- Buchet JP, *et al.* Renal effects of cadmium body burden of the general population. *Lancet* 1990; **336**: 699–702. Correction. *ibid.* 1991; **337**: 1554.
- Mason HJ. Occupational cadmium exposure and testicular endocrine function. *Hum Exp Toxicol* 1990; **9**: 91–4.
- Cai S, *et al.* Renal dysfunction from cadmium contamination of irrigation water: dose-response analysis in a Chinese population. *Bull WHO* 1998; **76**: 153–9.
- Satarug S, *et al.* Safe levels of cadmium intake to prevent renal toxicity in human subjects. *Br J Nutr* 2000; **84**: 791–802.
- Hotz P, *et al.* Renal effects of low-level environmental cadmium exposure: 5-year follow-up of a subcohort from the Cadmibel study. *Lancet* 1999; **354**: 1508–13.
- Staessen JA, *et al.* Environmental exposure to cadmium, forearm bone density, and risk of fractures: prospective population study. *Lancet* 1999; **353**: 1140–44.
- Taylor A, *et al.* Poisoning with cadmium fumes after smelting lead. *BMJ* 1984; **288**: 1270–1.
- Buckler HM, *et al.* Self poisoning with oral cadmium chloride. *BMJ* 1986; **292**: 1559–60. Correction. *ibid.*; **293**: 236.
- Bell GM. Carcinogenicity of cadmium and its compounds. *Toxicity Review* 24. London: HMSO, 1991.

## Preparations

### Proprietary Preparations (details are given in Part 3)

**Spain:** Biocadmio.

## Cajuput Oil

Cajeput Oil; Cajuput Essence; Cayeput, aceite esencial de; Oleum Cajuputi.

## Profile

Cajuput oil is a volatile oil obtained by distillation from the fresh leaves and twigs of *Melaleuca cajuputi* (*M. leucadendron*) (Myrtaceae). It contains cineol. Cajuput oil has been applied

externally as a stimulant and mild rubefacient in rheumatism. It is also used with other volatile agents in preparations for the relief of respiratory-tract disorders and nasal congestion. It is also used in aromatherapy.

## Preparations

### Proprietary Preparations (details are given in Part 3)

**Multi-ingredient:** **Austral.:** Goanna Heat Cream; Methyl Salicylate Ointment Compound†; Tiger Balm Red; Tiger Balm White; **Austria:** Tiger Balm Rot; **Belg.:** Olbas; **Canad.:** Tiger Balm Red; Tiger Balm Ultra; Tiger Balm White; Youngflex Massage 168; **Cz.:** Tiger Balm Rot†; **Fr.:** Phytolithe†; Vegeborn; **Ger.:** Nasenbalsam; Olbas; Palatol†; **Gr.:** Tiger Balm; **Hong Kong:** Vida Salirub; **India:** Flexi-muv; **Indon.:** Balsam Sakti; Minyak Telon; Minyak Telon Cap Tiga Anak; **Israel:** Tiger Balm Red; Tiger Balm White; **Ital.:** Otosan Natural Ear Drops†; **Philipp.:** Begesic; **Pol.:** Argol Rheuma; Olbas; **S.Afr.:** Muscle Rub; **Singapore:** Begesic; **Switz.:** Frigoplas-maf; Novital; Olbas; Wala Baume nasal; **Thai.:** Dexamlin; Hot Ize; Olympic Balm†; **UK:** Bells Muscle Rub; Olbas; Olbas for Children; Soothol; Tiger Balm; Vadarex.

## Calamus

Acore Vrai; Cálamo aromático; Calamus Rhizome; Kalmus; Sweet Flag Root.

CAS — 8015-79-0 (calamus oil).

**Pharmacopoeias.** In *Chin.* and *Swiss*.

## Profile

Calamus, the dried rhizome of the sweet flag, *Acorus calamus* (Acoraceae), has been used as a bitter and carminative; it is also used as a source of calamus oil, which is employed in perfumery. The FDA in the USA has prohibited marketing calamus as a food or food additive; the oil (Jammu variety) is reported to be a carcinogen.

**Homeopathy.** Calamus has been used in homeopathic medicines under the following names: Calamus aromaticus; Acorus calamus.

## Preparations

### Proprietary Preparations (details are given in Part 3)

**Cz.:** Koren Puskvorce.

**Multi-ingredient:** **Austria:** Abdomilon N; **Cz.:** Abdomilon†; Dr Theiss Schwedenbitter; Eugastrin†; Original Schwedenbitter; Stomaran; **Fr.:** Jouvence de l'Abbe Soury; **Ger.:** Abdomilon N; Gastrol S†; Majocarmint mite†; Presselin Blahungs K 4 N†; Stomasi Med†; Stovalid N†; ventri-loges N; **Israel:** Rekv; **Ital.:** Frenchs Maldifast†; **Pol.:** Dentosept A; Gastro; Krople Zoladkow; Seboren; **Port.:** Chologutt†; **Rus.:** Original Grosser Bittner Balsam (Оригинальный Большой Бальзам Биттнера); **Switz.:** Kernosan Elixir; Tisane pour l'estomac; Urinex; **UK:** Pegina.

## Calcium Carbimide (rINN)

Calcii Carbimidum; Calcium Cyanamide; Carbimida cálcica; Carbimide Calcique; Cyanamide.

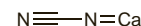
Кальция Карбимид

$CCaN_2$  = 80.1.

CAS — 156-62-7 (calcium carbimide); 8013-88-5 (citrat-ed calcium carbimide).

ATC — N07BB02.

ATC Vet — QN07BB02; QV03AA02.



NOTE. The name cyanamide is also used to designate carbimide, which is used in veterinary medicine.

## Adverse Effects and Precautions

Calcium carbimide may cause drowsiness, dizziness, fatigue, skin rash, tinnitus, depression, impotence, and urinary frequency. There may be a reversible increase in the white cell count. It should be used with caution in patients with asthma, coronary artery disease, or myocardial disease. Calcium carbimide causes a reaction in patients who have consumed alcohol similar to that seen with disulfiram (see p.2296).

**Effects on the heart.** Hypotension and tachycardia were reported during the carbimide-alcohol reaction.<sup>1</sup>

- Peachey JE, *et al.* Cardiovascular changes during the calcium carbimide-ethanol interaction. *Clin Pharmacol Ther* 1981; **29**: 40–6.

**Effects on the liver.** Reports<sup>1,2</sup> of hepatic lesions in patients receiving calcium carbimide.

- Vázquez JJ, Cervera S. Cyanamide-induced liver injury in alcoholics. *Lancet* 1980; **i**: 361–2.
- Moreno A, *et al.* Structural hepatic changes associated with cyanamide treatment: cholangiolar proliferation, fibrosis and cirrhosis. *Liver* 1984; **4**: 15–21.

## Uses and Administration

Calcium carbimide has actions and uses similar to those of disulfiram (p.2297). It is an aversive agent used as an adjunct in the treatment of chronic alcoholism (see Alcohol Withdrawal and Abstinence, p.1626). It is given in a dose of up to 60 mg twice daily by mouth. Citrated calcium carbimide has been used similarly.

## References.

- Peachey JE, *et al.* A comparative review of the pharmacological and toxicological properties of disulfiram and calcium carbimide. *J Clin Psychopharmacol* 1981; **1**: 21–6.

## Preparations

**Proprietary Preparations** (details are given in Part 3)  
**Austria:** Colme; **Rus.:** Colme (Колме); **Spain:** Colme.

## Calcium Dihydrogen Phosphate

Acid Calcium Phosphate; Calcium Dihydrogenphosphoricum; E341; Fosfato monocalcico; Monobasic Calcium Phosphate; Monocalcium Phosphate. Calcium tetrahydrogen diorthophosphate monohydrate.

$\text{Ca}(\text{H}_2\text{PO}_4)_2 \cdot \text{H}_2\text{O} = 252.1$ .  
 CAS — 7758-23-8 (anhydrous calcium dihydrogen phosphate).

**Pharmacopoeias.** In *Jpn* and *Swiss*.

### Profile

Calcium dihydrogen phosphate is used in fertilisers. It is also used as an antioxidant in baking powders and flours and as a source of calcium in some mineral supplement preparations.

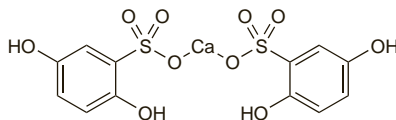
## Preparations

**Proprietary Preparations** (details are given in Part 3)  
**Multi-ingredient:** **Fr.:** Phosphoneuros.

## Calcium Dobesilate (*rINN*)

Calcii dobesilas; Calcium, dobésilate de; Calcium Doxybenzylate; CLS-2210; Dobesilan vápenatý; Dobésilate de Calcium; Dobesilato de calcio; 205E; Kalcio dobesilas; Kalciumdobesilat; Kalciumdobezilát; Kalsiumdobesilaatti; Kalsiyum Dobesilat. Calcium 2,5-dihydroxybenzenesulphonate.

Кальция Добезилат  
 $\text{C}_{12}\text{H}_{10}\text{CaO}_{10}\text{S}_2 = 418.4$ .  
 CAS — 88-46-0 (dobesilic acid); 20123-80-2 (calcium dobesilate).  
 ATC — C05BX01.  
 ATC Vet — QC05BX01.



**Pharmacopoeias.** In *Eur.* (see p.vii) which specifies the monohydrate.

**Ph. Eur. 6.2** (Calcium Dobesilate Monohydrate). A white or almost white hygroscopic powder. Very soluble in water; freely soluble in hydroalcoholic alcohol; practically insoluble in dichloromethane; very slightly soluble in isopropyl alcohol. A 10% solution in water has a pH of 4.5 to 6.0. Store in airtight containers. Protect from light.

### Profile

Calcium dobesilate is claimed to reduce capillary permeability and has been used in various peripheral circulatory disorders including diabetic retinopathy and haemorrhoids (p.1697). Gastrointestinal disturbances have occurred with its use, and there are also reports of hypersensitivity reactions.

Calcium dobesilate is given orally in usual doses of 0.5 to 1.5 g daily in divided doses. It is also given rectally for haemorrhoids and is an ingredient of some preparations given for various skin disorders.

♦ Reviews.

- Tejerina T, Ruiz E. Calcium dobesilate: pharmacology and future approaches. *Gen Pharmacol* 1998; **31**: 357–60.
- Berthet P, et al. Calcium dobesilate: pharmacological profile related to its use in diabetic retinopathy. *Int J Clin Pract* 1999; **53**: 631–6.

**Adverse effects.** Agranulocytosis has been reported<sup>1-3</sup> in a few patients after treatment with calcium dobesilate, and in 2 cases occurred on challenge.<sup>1,2</sup> However, a later review<sup>4</sup> of the safety profile of calcium dobesilate concluded that the overall risk of adverse effects was low with the most prominent symptoms being fever, arthralgias, and gastrointestinal disturbances. Reports of agranulocytosis were rare and the authors concluded that there may have been methodological bias in previous assessments of risk.

- Kulesa W, et al. Wiederholte Agranulozytose nach Einnahme von Calciumdobesilat. *Dtsch Med Wochenschr* 1992; **117**: 372–4.
- Cladera Serra A, et al. Agranulocytosis inducida por dobesilato calcico. *Med Clin (Barc)* 1995; **105**: 558–9.
- García Benayas E, et al. Calcium dobesilate-induced agranulocytosis. *Pharm World Sci* 1997; **19**: 251–2.
- Allain H, et al. Safety of calcium dobesilate in chronic venous disease, diabetic retinopathy and haemorrhoids. *Drug Safety* 2004; **27**: 649–60.

## Preparations

**Proprietary Preparations** (details are given in Part 3)  
**Arg.:** Doxium; Duffemina; Eflav; **Austria:** Doxium; Vasactin; **Chile:** Doxium; **Cz.:** Danium; Dobica; Doxium; **Ger.:** Dexium; Dobica; **Gr.:** Doxytrex; Nugatex; **Hong Kong:** Dobesifart; Doxium; **Hung.:** Doxilek; Doxium; **India:** Dobilet; **Ital.:** Doxium; **Malaysia:** Doxium; **Mex.:** Doxium;

**Philipp.:** Doxium; **Pol.:** Doxium; **Port.:** Doxi-Om; **Rus.:** Doxi-Hem (Докси-хем); **S.Afr.:** Doxium; **Spain:** Doxium; **Switz.:** Doxium; **Turk.:** Doxium; **Venez.:** Deoxical; Doxium.

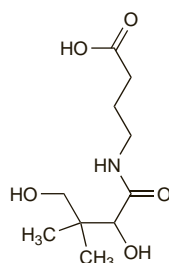
**Multi-ingredient:** **Arg.:** Vasodual; **Cz.:** Danium Compositum; Dobexit; Dobexit Plus; Doxiproct; Doxiproct Plus; Doxivenil; **Hung.:** Doxiproct; Doxiproct Plus; Doxivenil; **Ital.:** Doxiproct; **Mex.:** Doxiproct Plus; Doxiproct; **Port.:** Doxiproct; Doxiproct Plus; Doxivenil; **Spain:** Acnisdin; Acnisdin Retinoico; Proctium; **Switz.:** Doxiproct; Doxiproct Plus; Doxivenil; **Venez.:** Doxivenil.

## Calcium Hopantenate (*rINN*)

Calcii Hopantenas; Calcium Homopantothenate; Hopanténate de Calcium; Hopantenato cálcico. Calcium D-(+)-4-(2,4-dihydroxy-3,3-dimethylbutyramido)butyrate hemihydrate.

Кальций Гопантенат

$\text{Ca}(\text{C}_{10}\text{H}_{18}\text{NO}_5)_2 \cdot \text{H}_2\text{O} = 513.6$ .  
 CAS — 18679-90-8 (hopantenic acid); 17097-76-6 (anhydrous calcium hopantenate); 1990-07-4 (calcium hopantenate hemihydrate).



(hopantenic acid)

### Profile

Calcium hopantenate is a homologue of pantothenic acid (p.1959) and has been tried in the treatment of various behavioural and extrapyramidal disorders. Its use is limited by severe metabolic adverse effects and fatalities have been reported.

## Preparations

**Proprietary Preparations** (details are given in Part 3)

**Rus.:** Pantocalcin (Пантокальцин); Pantogam (Пантогам); Pantohamum (Пантогам);

## Calcium Hydroxide

Calcii hydroxidum; Calcium Hydrate; Calcium, hydroxyde de; E526; Hidróxido cálcico; Hydroxid vápenatý; Kalcio hidroksidas; Kalcium-hydroxid; Kalciumhydroxid; Kalsiumhydroksidi; Slaked Lime; Wapnia wodorotlenek.

$\text{Ca}(\text{OH})_2 = 74.09$ .

CAS — 1305-62-0.

**Pharmacopoeias.** In *Eur.* (see p.vii), *Jpn*, *US*, and *Viet*.

**Ph. Eur. 6.2** (Calcium Hydroxide). A fine white or almost white powder. Practically insoluble in water.

**USP 31** (Calcium Hydroxide). A white powder with a slightly bitter alkaline taste. Soluble 1 in 630 of water and 1 in 1300 of boiling water; insoluble in alcohol; soluble in glycerol and in syrup. Store in airtight containers.

### Profile

Calcium hydroxide is a weak alkali. It is used in the form of Calcium Hydroxide Solution (lime water) in some skin lotions and oily preparations to form calcium soaps of fatty acids which produce water-in-oil emulsions.

Calcium hydroxide pastes are used in dentistry. A paste made from a mixture of calcium hydroxide and potassium hydroxide and known as Vienna paste was used as an escharotic. Soda lime (p.2388) is a mixture of calcium hydroxide and potassium hydroxide and/or sodium hydroxide. With sulfur, calcium hydroxide forms sulfated lime solution (p.1614).

**Homeopathy.** Calcium hydroxide has been used in homeopathic medicines under the following names: Calcarea caustica; Cal. caus.

**Adverse effects.** A report of ocular alkali burns in children, leading to severe visual loss, caused by packets of calcium hydroxide ('Chuna') popularly consumed in India as an additive to chewing tobacco.<sup>1</sup>

For the use of sodium edetate in the treatment of calcium hydroxide burns of the eye, see p.1464.

- Agarwal T, Vajpayee RB. A warning about the dangers of chuna packets. *Lancet* 2003; **361**: 2247.

## Preparations

**BP 2008:** Calcium Hydroxide Solution;  
**USP 31:** Calcium Hydroxide Topical Solution.

**Proprietary Preparations** (details are given in Part 3)  
**Ger.:** Dermi-cyl; **Mex.:** Oleoderm.

**Multi-ingredient:** **Cz.:** Aviril H; **Mex.:** Caliderm; Liniderm; Oleoderm Plus; **Pol.:** Acne Sulf; **Spain:** Cremsol; **Switz.:** Sansilla.

## Calcium Oxide

Calcii Oxidum; Calcium Oxydatum; Calcium, oxyde de; Calx; Calx Usta; Chaux Vive; E529; Gebranter Kalk; Lime; Oxid vápenatý; Óxido de calcio; Quicklime; Wapnia tlenek; Wapnia tlenek.

$\text{CaO} = 56.08$ .  
 CAS — 1305-78-8.  
 ATC Vet — QP53AX18.

**Pharmacopoeias.** In *Jpn*, *Pol.*, and *US*.

**USP 31** (Lime). Hard, odourless, white or greyish-white masses, granules, or powder. When it is moistened with water a reaction occurs, heat being evolved and calcium hydroxide formed. Slightly soluble in water; very slightly soluble in boiling water. Store in airtight containers.

### Adverse Effects and Treatment

Calcium oxide may cause burns on contact with moist skin and mucous membranes; it is particularly irritant to the eyes. Washing or flooding of affected areas may need to be prolonged. Pneumonitis may follow inhalation.

♦ For the use of sodium edetate in the treatment of calcium oxide burns of the eye, see p.1464.

### Uses and Administration

Calcium oxide has been used in various dermatological preparations. A paste made from a mixture of calcium oxide and sodium hydroxide and known as London paste was used as an escharotic.

## Preparations

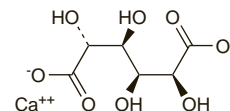
**Proprietary Preparations** (details are given in Part 3)

**Multi-ingredient:** **Ital.:** Oleo Calcarea;†

## Calcium Saccharate (*rINN*)

Calcii Saccharas; Calcium D-Saccharate; Sacarato cálcico; Sacarato de calcio; Saccharate de Calcium; Sucrate de Calcium. Calcium D-glucurate tetrahydrate.

Кальция Сахарат  
 $\text{C}_{12}\text{H}_{20}\text{CaO}_{14}\text{H}_2\text{O} = 320.3$ .  
 CAS — 5793-88-4 (anhydrous calcium saccharate); 5793-89-5 (calcium saccharate tetrahydrate).



NOTE. The names calcium saccharate and calcium sucate have also been used to describe saccharated lime.

**Pharmacopoeias.** In *US*.

**USP 31** (Calcium Saccharate). A white, odourless, crystalline powder. Very slightly soluble in cold water and in alcohol; slightly soluble in boiling water; practically insoluble in chloroform and in ether; soluble in dilute mineral acids and in solutions of calcium gluconate.

### Profile

Calcium saccharate is used as a stabilising agent in solutions of calcium gluconate for injection. Each g of calcium saccharate contains about 3.1 mmol of calcium. Calcium saccharate 8 g is equivalent to about 1 g of calcium.

## Preparations

**Proprietary Preparations** (details are given in Part 3)

**Austria:** Calcium Fresenius; **Ger.:** Calcium Fresenius;†

**Multi-ingredient:** **Ger.:** Calcium Braun; **Switz.:** C-Calcium; Glucocalcium.

## Calcium Sulfate

Calcii sulfas; Calcium, sulfate de; Calcium Sulphate; E516; Gypsum (calcium sulfate dihydrate); Kalcio sulfatas; Kalciumsulfat; Kalcium-szulfát; Kalsiumsulfatti; Sírán vápenatý; Sulfato cálcico; Wapnia siarczan.

$\text{CaSO}_4 = 136.1$ .  
 CAS — 7778-18-9 (anhydrous calcium sulfate); 10101-41-4 (calcium sulfate dihydrate).

**Pharmacopoeias.** In *Chin.*, *Eur.* (see p.vii), *Int.*, and *Jpn* which specify the dihydrate. Also in *USNF* which specifies the dihydrate or the anhydrous material.

**Ph. Eur. 6.2** (Calcium Sulphate Dihydrate). A white or almost white fine powder. Very slightly soluble in water; practically