mixtures of dichlorodifluoromethane and trichlorofluoromethane with 9 to 12% w/w of ethylene oxide have been employed, but restrictions on the release of fluorocarbons or CFCs limit their use.

Effective sterilisation by ethylene oxide depends on exposure time, temperature, humidity, the amount and type of microbial contamination, and the partial pressure of the ethylene oxide in the exposure chamber. Concentrations of between 400 and 1000 mg/litre are usually used for sterilisation and the process time may vary from 30 minutes to 10 hours. The material being sterilised must be permeable to ethylene oxide if occluded micro-organisms are present. The bactericidal action is accelerated by increase of temperature; the average temperature used is between 40° and 50°.

Moisture is essential for sterilisation by ethylene oxide. In practice, dry micro-organisms need to be rehydrated before ethylene oxide can be effective; humidification is normally carried out under vacuum prior to introduction of ethylene oxide. Relative humidities of 40 to 60% are used.

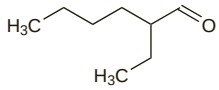
Control of physical factors does not assure sterility, and the process should be monitored usually by using standardised suspensions of aerobic spores such as those of *Bacillus subtilis* var. *niger*.

Ethylhexanal

2-Ethylcaproaldehyde; 2-Ethylhexylaldehyde; Octylaldehyde. 2-Ethylhexanal.

$C_8H_{16}O$ = 128.2.

CAS — 123-05-7.



Profile

Ethylhexanal is an aldehyde disinfectant used for instrument disinfection.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: ***Ger.:*** Buraton 10 F; Helipur H plus N; Lysetol FF†; Sekucid konz†.

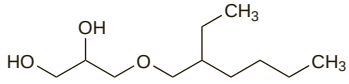
Ethylhexylglycerin

Octoxyglycerin. 3-[(2-Ethylhexyl)oxy]-1,2-propanediol.

Этилгексилглицерин

$C_{11}H_{24}O_3$ = 204.3.

CAS — 70445-33-9.



Profile

Ethylhexylglycerin is a disinfectant used in a concentration of 0.3% in topical deodorant preparations. It is also used in products for disinfection of the hands.

◊ References.

1. Stausbøl-Grøn B, Andersen KE. Allergic contact dermatitis to ethylhexylglycerin in a cream. *Contact Dermatitis* 2007; **57:** 193–4.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: ***Braz.:*** Effidrate†; ***Chile:*** Uriage Desodorante Tri-Actif.

Formaldehyde

Formaldehid; Formaldehído; Formaldehyd.

Формальдегид

CH_2O = 30.03.

CAS — 50-00-0.

ATC Vet — QP53AX19.

Formaldehyde Solution

Formaldehído, solución de; Formaldehido tirpalas; Formaldehidoldat; Formaldehyd roztok; Formaldéhyde, solution de; Formaldehydi solutio; Formaldehydiliuos; Formaldehydlösning; Formaldehydu roztwór.

NOTE. The names formalin and formol have been used for formaldehyde solution but in some countries they are trade marks.

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

Ph. Eur. 6.2 (Formaldehyde Solution (35 per cent); Formaldehyde Solution BP 2008). It contains 34.5 to 38.0% w/w of formaldehyde with methyl alcohol as a stabiliser. It is a clear, colourless, liquid. Miscible with water and with alcohol. It may be cloudy after storage. Store at a temperature between 15° and 25°. Protect from light.

USP 31 (Formaldehyde Solution). It contains not less than 34.5% w/w of formaldehyde with 9 to 15% methyl alcohol added to prevent polymerisation. It is a clear, colourless, or practically colourless liquid with a pungent, irritating odour. Miscible with water and with alcohol. Store at a temperature above 15° in airtight containers. It may become cloudy on standing due to the separation of paraformaldehyde, especially if the solution is kept in a cold place; the cloudiness disappears on warming.

Strength of solutions. Formaldehyde solution is sometimes known simply as formaldehyde and this has led to confusion in interpreting the strength and the form in which formaldehyde is being used. In practice formaldehyde is available as formaldehyde solution which is diluted before use, the percentage strength being expressed in terms of formaldehyde solution rather than formaldehyde. For example, in the UK, formaldehyde solution 3% consists of 3 volumes of Formaldehyde Solution (35 Per Cent) (Ph. Eur. 6.2) diluted to 100 volumes with water and thus contains 1.04 to 1.14% w/w of formaldehyde; it is ***not*** prepared by diluting Formaldehyde Solution (35 Per Cent) (Ph. Eur. 6.2) to arrive at a solution containing 3% w/w of formaldehyde.

Incompatibility. Formaldehyde reacts with protein and this may diminish its antimicrobial activity.

Adverse Effects and Precautions

Concentrated formaldehyde solutions applied to the skin cause whitening and hardening. Contact dermatitis and sensitivity reactions have occurred after the use of conventional concentrations and after contact with residual formaldehyde in resins.

Ingestion of formaldehyde solution causes intense burning pain in the mouth, throat, chest, and stomach, with inflammation, ulceration, and necrosis of mucous membranes. There may be nausea, vomiting, haematemesis, blood-stained diarrhoea, haematuria, and anuria; metabolic acidosis, vertigo, convulsions, loss of consciousness, and circulatory and respiratory failure may occur. Death has occurred after the ingestion of the equivalent of about 30 mL of formaldehyde solution. If the patient survives 48 hours, recovery is probable. Formaldehyde vapour is irritant to the eyes, nose, and upper respiratory tract, and may cause coughing, dysphagia, spasm and oedema of the larynx, bronchitis, pneumonia, and rarely, pulmonary oedema. Asthma-like symptoms have been reported after repeated exposure.

◊ General references.

1. Health and Safety Executive. Formaldehyde. *Toxicity Review 2.* London: HMSO, 1981.
2. WHO. Formaldehyde. *Environmental Health Criteria 89.* Geneva: WHO, 1989. Available at: http://www.inchem.org/documents/ehc/ehc/ehc89.htm (accessed 15/03/06)
3. WHO. Formaldehyde health and safety guide. *IPCS Health and Safety Guide 57.* Geneva: WHO, 1991. Available at: http://www.inchem.org/documents/hsg/hsg/hsg057.htm (accessed 15/03/06)
4. WHO. Formaldehyde. *Concise International Chemical Assessment Document 40* Geneva: WHO, 2002. Available at: http://whqlibdoc.who.int/hq/2002/a73769.pdf (accessed 15/03/06)

Abuse. References to the abuse of embalming fluid (the primary ingredient of which is formaldehyde), usually in the form of marijuana treated with embalming fluid and in some cases phencyclidine, a mixture known as 'fry'.[1-4]

1. Holland JA, *et al.* Embalming fluid-soaked marijuana: new high or new guise for PCP? *J Psychoactive Drugs* 1998; **30:** 215–9.
2. Peters RJ, *et al.* Beliefs and social norms about cigarettes or marijuana sticks laced with embalming fluid and phencyclidine (PCP): why youth use "fry". *Subst Use Misuse* 2005; **40:** 563–71.
3. Singer M, *et al.* Dust in the wind: the growing use of embalming fluid among youth in Hartford, CT. *Subst Use Misuse* 2005; **40:** 1035–50.
4. Singer M, *et al.* When the drug of choice is a drug of confusion: embalming fluid use in inner city Hartford, CT. *J Ethn Subst Abuse* 2005; **4:** 73–96.

Carcinogenicity. There is controversy as to the risk formaldehyde presents as a carcinogen. Studies on the occupational exposure of medical personnel and industrial workers[1-3] to formaldehyde have generally concluded that although the risk is small or non-existent, the possibility that formaldehyde is a human carcinogen cannot be excluded. Reanalyses of some studies have led to different interpretations of the results, with some workers concluding that the risk of cancer from formaldehyde is greater than originally thought.[4] Analysis of mortality data[5] for a cohort of 25619 workers exposed to formaldehyde in the USA found some evidence of an association with nasopharyngeal cancer and possibly cancers at other upper respiratory-tract sites. Based on the results of this large cohort study and supported by evidence from other epidemiological and *animal* studies, the International Agency for Research on Cancer (IARC) concluded,[6] in 2004, that occupational exposure to formaldehyde does cause nasopharyngeal cancer. Furthermore, they found strong, but not sufficient, evidence to establish a causal link with leukaemia and limited evidence to suggest it causes sinonasal cancer. IARC has concluded that formaldehyde is a definite human carcinogen.[6]

1. Gérin M, *et al.* Cancer risks due to occupational exposure to formaldehyde: results of a multi-site case-control study in Montreal. *Int J Cancer* 1989; **44:** 53–8.
2. Blair A, *et al.* Mortality from lung cancer among workers employed in formaldehyde industries. *Am J Ind Med* 1990; **17:** 683–99.
3. Coggon D, *et al.* Extended follow-up of a cohort of British chemical workers exposed to formaldehyde. *J Natl Cancer Inst* 2003; **95:** 1608–15.
4. Sterling TD, Weinkam JJ. Mortality from respiratory cancers (including lung cancer) among workers employed in formaldehyde industries. *Am J Ind Med* 1994; **25:** 593–602.
5. Hauptmann M, *et al.* Mortality from solid cancers among workers in formaldehyde industries. *Am J Epidemiol* 2004; **159:** 1117–30.
6. IARC/WHO. Formaldehyde, 2-butoxyethanol and 1-*tert*-butoxy-2-propanol. *IARC monographs on the evaluation of carcinogenic risks to humans volume 88* 2004. Available at: http://monographs.iarc.fr/ENG/Monographs/vol88/volume88.pdf (accessed 23/05/06)

Effects on the blood. Haemolysis during chronic haemodialysis was due to formaldehyde eluted from filters.[1]

1. Orringer EP, Mattern WD. Formaldehyde-induced hemolysis during chronic hemodialysis. *N Engl J Med* 1976; **294:** 1416–20.

Effects on the urinary tract. Adverse effects have resulted from intravesical instillation of formaldehyde solutions, ranging in strength from 1 to 10%, in the treatment of haemorrhagic cystitis. They include dysuria, suprapubic pain, ureteric and bladder fibrosis, hydronephrosis, vesicoureteral reflux, bilateral ureteral obstruction, papillary necrosis, bladder rupture, and acute tubular necrosis. Intraperitoneal spillage through a fistula, leading to adverse systemic effects, has also occurred.[1] Fatalities have resulted from cardiac arrest and acute renal failure.[1-3] See also Haemorrhagic Cystitis under Uses, below.

There has also been a report[4] of 4 patients exposed to high levels of atmospheric formaldehyde who developed membranous nephropathy, suggesting that there may be genetic susceptibility for this effect.

1. Capen CV, *et al.* Intraperitoneal spillage of formalin after intravesical instillation. *Urology* 1982; **19:** 599–601.
2. Melekos M, Lalos J. Intravesical instillation of formalin and its complications. *Urology* 1983; **21:** 331–2.
3. Sarnak MJ, *et al.* Intravesicular formaldehyde instillation and renal complications. *Clin Nephrol* 1999; **51:** 122–5.
4. Breysse P, *et al.* Membranous nephropathy and formaldehyde exposure. *Ann Intern Med* 1994; **120:** 396–7.

Hypersensitivity. Hypersensitivity to formaldehyde has had several manifestations. Effects on the skin have included acute exacerbation of eczema after injection of hepatitis B vaccine containing formaldehyde up to 20 micrograms/mL.[1] In another case, formaldehyde sensitivity was characterised by pruritus, burning, and redness within minutes of exposure to sunlight.[2] Painful, enlarged, and haemorrhagic gingival margins have occurred after the use of a toothpaste containing a solution of formaldehyde.[3] There is conflicting evidence of the respiratory effects of formaldehyde: although a low concentration has been reported not to trigger an asthma attack in patients with severe bronchial hyperresponsiveness,[4] occupational asthma has been documented.[5] More severe manifestations of hypersensitivity include 7 cases of shock of possible toxic or anaphylactic aetiology that occurred after the use of formaldehyde solutions during surgical removal of hydatid cysts.[6]

For mention of an allergic response to root canal paste containing paraformaldehyde, see p.1655.

1. Ring J. Exacerbation of eczema by formalin-containing hepatitis B vaccine in formaldehyde-allergic patients. *Lancet* 1986; **ii:** 522–3.
2. Shelley WB. Immediate sunburn-like reaction in a patient with formaldehyde photosensitivity. *Arch Dermatol* 1982; **118:** 117–18.
3. Laws IM. Toothpaste formulations. *Br Dent J* 1984; **156:** 240.
4. Harving H, *et al.* Low concentrations of formaldehyde in bronchial asthma: a study of exposure under controlled conditions. *BMJ* 1986; **293:** 310.

5. Heard BE. Low concentrations of formaldehyde in bronchial asthma. *BMJ* 1986; **293:** 821.
6. Galland MC, *et al.* Risques thérapeutiques de l'utilisation des solutions de formol dans le traitement chirurgical des kystes hydatiques du foie. *Therapie* 1980; **35:** 443–6.

Treatment of Adverse Effects

Contaminated skin should be washed with soap and water. After ingestion water, milk, charcoal, and/or demulcents should be given; emesis should be avoided. Assisted ventilation may be required and shock should be alleviated appropriately. Convulsions should be controlled with diazepam and pain with morphine. Acidosis, resulting from metabolism of formaldehyde to formic acid, may require intravenous sodium bicarbonate or sodium lactate. The use of haemodialysis has been suggested.

Uses and Administration

Formaldehyde solution is a bactericidal disinfectant also effective against fungi and many viruses. It is slowly effective against bacterial spores but its sporicidal effect is greatly increased by increase in temperature.

Formaldehyde solution is usually used diluted and it is important to note that the strength of preparations is given in terms of the content of formaldehyde solution and not in terms of the final concentration of formaldehyde (see under Strength of Solutions, above).

Formaldehyde solution is used in the disinfection of blankets and bedding and in the disinfection of the membranes in dialysis equipment. It is important to ensure that there are no traces of formaldehyde on any equipment before it is used. Formaldehyde solution is also used with succinic dialdehyde for instrument disinfection.

When applied to the unbroken skin, formaldehyde solution hardens the epidermis, renders it tough and whitish, and produces a local anaesthetic effect. Formaldehyde solution 3% v/v has been used for the treatment of warts on the palms of the hands and soles of the feet. It is used similarly as a water-miscible gel containing formaldehyde 0.75% w/w. Sweating of the feet may be treated by the application of formaldehyde solution in glycerol or alcohol but such applications are liable to produce sensitisation reactions and other treatments are regarded as more effective (see Hyperhidrosis, p.1580).

After surgical removal of hydatid cysts, diluted formaldehyde solution has been used for irrigating the cavities to destroy scolices but other larvicides are preferred (see Echinococcosis, p.136). It is generally too irritant for use on mucous membranes but it has been used in mouthwashes and pastes as an antiseptic and hardening agent for the gums. In dentistry it has been used in endodontic treatment.

Formaldehyde solution in concentrations of up to 10% v/v in saline is used as a preservative for pathological specimens. It is not suitable for preserving urine for subsequent examination. Formaldehyde solution is used for the inactivation of viruses in vaccine production.

Formaldehyde gas has little penetrating power and readily polymerises and condenses on surfaces and its effectiveness depends on it dissolving in a film of moisture before acting on micro-organisms; in practice a relative humidity of 80 to 90% is necessary. Formaldehyde gas is used for the disinfection of rooms and cabinets. The gas may be produced from 500 mL of undiluted formaldehyde solution by boiling with 1 litre of water or by addition of potassium permanganate or by heating a formaldehyde-containing solid such as paraformaldehyde (p.1655). Formaldehyde gas is used with low-temperature steam for the sterilisation of heat-sensitive items.

Other compounds which are thought to act by releasing formaldehyde include noxytiolin (p.1654) and methenamine (p.298).

Haemorrhagic cystitis. Formaldehyde has been used for local therapy of haemorrhagic cystitis (p.2178), although there has been debate about the most appropriate regimen. The Fair regimen[1] for the intravesical use of formaldehyde solution in haemorrhagic cystitis involves passive irrigation of the bladder with 500 to 1000 mL of formaldehyde solution 1% v/v for a total of 10 minutes, the bladder subsequently being emptied and washed out with 1 litre of distilled water. Stronger concentrations of formaldehyde solution and other methods can be used if bleeding does not stop.[2] In a review of 118 patients treated with solutions of formaldehyde for intractable haematuria, the authors felt that this was probably the most effective treatment, but also probably the most dangerous.[3] More concentrated instillations, containing formaldehyde solution 5 to 10% seem to be generally viewed as unnecessary, and associated with an increased risk of complications which precludes their use.[4-7]

1. Fair WR. Formalin in the treatment of massive bladder hemorrhage: techniques, results, and complications. *Urology* 1974; **3:** 573–6.
2. Anonymous. Haemorrhagic cystitis after radiotherapy. *Lancet* 1987; **i:** 304–6.
3. Godec CJ, Gleich P. Intractable hematuria and formalin. *J Urol (Baltimore)* 1983; **130:** 688–91.
4. Bullock N, Whitaker RH. Massive bladder haemorrhage. *BMJ* 1985; **291:** 1522–3.
5. Donahue LA, Frank IN. Intravesical formalin for haemorrhagic cystitis: analysis of therapy. *J Urol (Baltimore)* 1989; **141:** 809–12.
6. Murray JA, *et al.* Massive bladder haemorrhage. *BMJ* 1986; **292:** 57.
7. Smith PJB, *et al.* Massive bladder haemorrhage. *BMJ* 1986; **292:** 412.

Preparations

Proprietary Preparations (details are given in Part 3)
Arg.: Formol; ***Ger.:*** Lysoform; ***UK:*** Veracur; ***USA:*** Formadon; Formalaz; Formalyde; Lazerformaldehyde.

Multi-ingredient: ***Arg.:*** Cistimax Ungueal; Parodium; ***Austral.:*** Formo-Cresol Mitis; ***Canad.:*** British Army Foot Powder†; Duoplant; ***Fr.:*** Aniospray 41; Bacterianos D†; Chlorispray†; Ephydrol; Incidine†; Parodium; Veybirol-Tyrothyricine†; ***Ger.:*** Aseptisol†; Buraton 10 F; Desoform†; Incidin perfekt; Incidin Spezial; Lysoformin; Melsept†; Melsitt; Minutil†; Prontocid N†; Sekusept forte S; Sekusept forte†; Sporcid; Ultrasol-F; ***Indon.:*** Skintex; ***Ital.:*** Melsept; ***Rus.:*** Parodium (Пародиум); ***Spain:*** Tifell†; Viberol Tirotricina.

Glucoprotamine

Glucoprotamina. Reaction product of L-glutamic acid and cocopropylene-1,3-diamine.

Profile

Glucoprotamine is used as a disinfectant for surfaces and medical equipment.

◊ References.

1. Disch K. Glucoprotamine—a new antimicrobial substance. *Zentralbl Hyg Umweltmed* 1994; **195:** 357–65.
2. Meyer B, Kluin C. Efficacy of glucoprotamin containing disinfectants against different species of atypical mycobacteria. *J Hosp Infect* 1999; **42:** 151–4.
3. Widmer AE, Frei R. Antimicrobial activity of glucoprotamin: a clinical study of a new disinfectant for instruments. *Infect Control Hosp Epidemiol* 2003; **24:** 762–4.

Preparations

Proprietary Preparations (details are given in Part 3)
Ger.: Incidin Plus; Sekusept Plus.

Multi-ingredient: ***Ger.:*** Incidin; Incidin extra N; Sekumatic FDR†.

Glutaral *(USAN, rINN)*

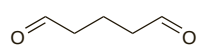
Adehyd glutarowy; Glutaraldehid; Glutaraldehyde; Glutaralum; Glutaric Dialdehyde; Pentanedial. Pentane-1,5-dial.

Глутарал

$C_5H_8O_2$ = 100.1.

CAS — 111-30-8.

ATC — D08AX09.



Pharmacopoeias. Solutions of glutaral are included in *Br.*, *Chin.*, and *US*. A solution is also in *USNF*.

BP 2008: (Strong Glutaraldehyde Solution). It contains 47 to 53% w/w of glutaral. Store at a temperature not exceeding 15°.

USP 31 (Glutaral Concentrate). It contains 50 to 52% w/w of glutaral and has a pH between 3.7 and 4.5. Store at a temperature not exceeding 40° in airtight containers. Protect from light.

USNF 26 (Glutaral Disinfectant Solution). It has a pH between 2.7 and 3.7. Store at a temperature not exceeding 40° in airtight containers. Protect from light.

Adverse Effects

As for Formaldehyde Solution, p.1644.

Effects on the gastrointestinal tract. Insufficient rinsing of a glutaral 2% solution from flexible endoscopes after disinfection appears to be responsible for outbreaks of glutaral-induced colitis in patients undergoing colonoscopy and sigmoidoscopy.[1-4] Symptoms may occur within minutes or up to 48 hours after endoscopy and are usually abdominal pain, mucous diarrhoea, and rectal bleeding. Fever, nausea, vomiting and leucocytosis have also been reported. A case of glutaral-induced colitis has also been attributed to inadequate flushing and drying of the endoscope channels.[2]

1. Durante L, *et al.* Investigation of an outbreak of bloody diarrhea: association with endoscopic cleaning solution and demonstration of lesions in an animal model. *Am J Med* 1992; **92:** 476–80.
2. West AB, *et al.* Glutaraldehyde colitis following endoscopy: clinical and pathological features and investigation of an outbreak. *Gastroenterology* 1995; **108:** 1250–5.
3. Fukunaga K, Khatibi A. Glutaraldehyde colitis: a complication of screening flexible sigmoidoscopy in the primary care setting. *Ann Intern Med* 2000; **133:** 315.
4. Stein BL, *et al.* Glutaraldehyde-induced colitis. *Can J Surg* 2001; **44:** 113–16.

Occupational exposure. Reviews[1,2] of the occupational hazards of glutaral have noted that several studies showed adverse effects, including nausea, headache, airway obstruction, asthma, rhinitis, eye irritation, and dermatitis, occurring among medical personnel exposed to glutaral, generally at concentrations below the recommended limits. Skin reactions were due to hypersensitivity or a direct irritant effect. It was concluded that, when using glutaral, workers should take suitable precautions to protect the skin and eyes and should avoid inhaling the vapour. Appropriate procedures should also be followed for disposal and clean-up of spills.

The risk of occupational exposure to glutaral vapour may be higher in warm climates.[3]

There has also been a report of accidental ocular contact with glutaral due to leakage of glutaral solution retained in an anaesthesia mask; moderate chemical conjunctivitis ensued.[4]

1. Burge PS. Occupational risks of glutaraldehyde. *BMJ* 1989; **299:** 342.
2. Ballantyne B, Jordan SL. Toxicological, medical and industrial hygiene aspects of glutaraldehyde with particular reference to its biocidal use in cold sterilization procedures. *J Appl Toxicol* 2001; **21:** 131–51.
3. Mwaniki DL, Guthua SW. Occupational exposure to glutaraldehyde in tropical climates. *Lancet* 1992; **340:** 1476–7.
4. Murray WJ, Ruddy MP. Toxic eye injury during induction of anaesthesia. *South Med J* 1985; **78:** 1012–13.

Uses and Administration

Glutaral is a bactericidal disinfectant that is rapidly effective against Gram-positive and Gram-negative bacteria. It is also effective against *Mycobacterium tuberculosis*, some fungi, and viruses, including hepatitis B virus and HIV, and is slowly effective against bacterial spores. Aqueous solutions show optimum activity between pH 7.5 and 8.5; such solutions are chemically stable for about 14 days. Solutions at lower pH values are more stable.

A 2% aqueous solution buffered to a pH of about 8 (activated glutaral; alkaline glutaral) may be used for the sterilisation of endoscopic and dental instruments, rubber or plastic equipment, and for other equipment which cannot be sterilised by heat. Glutaral is non-corrosive towards most materials. Complete immersion in the solution for 10 to 20 minutes is sufficient for rapid disinfection of thoroughly cleansed instruments but exposure for up to 10 hours may be necessary for sterilisation. For further details, see Disinfection of Endoscopes, p.1623, and Disinfection in Hepatitis and HIV Infection, p.1623.

A 10% solution is applied twice daily for the treatment of warts (p.1584); a 5% solution and a 10% gel have also been used. Glutaral should not be used for facial or anogenital warts. Glutaral has also been used topically for treating hyperhidrosis of the palms and soles, although other agents are generally preferred (see p.1580).

Preparations

BP 2008: Glutaraldehyde Solution; Strong Glutaraldehyde Solution;
USNF 26: Glutaral Disinfectant Solution;
USP 31: Glutaral Concentrate.

Proprietary Preparations (details are given in Part 3)
Arg.: Asepto-Glutaral†; ***Austral.:*** Diswart; ***Fr.:*** Cidex†; Sekucid†; Steranios; ***Ger.:*** Cidex†; Korsolex-Endo-Disinfectant; Sekumatic FD†; ***India:*** Glutrex†; ***Irl.:*** Glutarol; ***Ital.:*** Citrosteril Sterilferri; Diba; Eso Cem; Eso H1, HP, and HP1; Esoxid; Ferrisepti; SaniSteril Sterilferri; Sporacid†; Sporex†; Sporicidin; T5†; ***S.Afr.:*** Virogerm; ***Thai.:*** Deconex 50FF†; ***UK:*** ASEP; Glutarol; ***USA:*** Cetylcide-G; Cidex.

Multi-ingredient: ***Fr.:*** Aniospray 41; Bacterianos D†; Chlorispray†; Incidine†; ***Ger.:*** Aerodesin; Aseptisol†; Bacillocid rasant†; Bacillol plus; Buraton 10 F; Desoform†; Helipur H plus N; Incidin perfekt; Incidin Spezial; Incidur; Incidur Spray†; Kohrsolin; Kohrsolin FF; Korsolex basic; Korsolex Extra; Korsolex FF; Lysetol FF†; Lysoformin; Lysoformin 3000; Melsept SF; Melsept†;