

Acriflavinium Chloride (rINN)

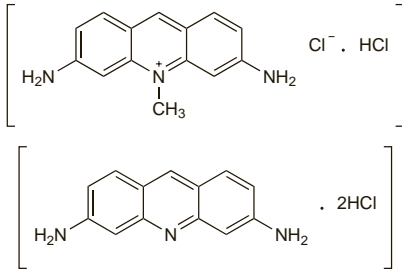
Acriflavine; Acriflavine Hydrochloride; Acriflavini Chloridum; Acriflavini Dichloridum; Acriflavinium, Chlorure d'; Akriflaviniumchlorid; Cloruro de acriflavino. A mixture of 3,6-diamino-10-methylacridinium chloride hydrochloride and 3,6-diaminoacridine dihydrochloride.

Акрифлавиния Хлорид

CAS — 8063-24-9; 65589-70-0.

ATC — R02AA13.

ATC Vet — QG01AC90; QR02AA13.



NOTE. The nomenclature is confusing. Acriflavinium Chloride is rINN but also the BP name for Acriflavinium Monochloride (see below).

Acriflavinium Monochloride

Acriflavini monochloridum; Acriflavino, monochloruro de; Acriflavinium, monochlorure d'; Akriflavino monochloridas; Akriflaviniummonoklorid; Akriflaviniummonokloridi; Euflavini; Euflavine; Euflavine; Euflavinum; Neutral Acriflavine; Neutroflavin. A mixture of 3,6-diamino-10-methylacridinium chloride and 3,6-diaminoacridine monohydrochloride. The latter is usually present to the extent of between 30 and 40%.

CAS — 68518-47-8.

ATC — D08AA03.

ATC Vet — QD08AA03.

NOTE. The nomenclature is confusing. Although the BP name was Acriflavinium Chloride this is also rINN for a related compound (see above).

Aminoacridine Hydrochloride (BANM, rINNM)

Aminacrine Hydrochloride (USAN); Aminoacridine, Chlorhydrate d'; Aminoacridini Hydrochloridum; Hidrocloruro de aminoacridina; NSC-7571. 9-Aminoacridine hydrochloride monohydrate.

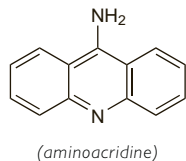
Аминоакридина Гидрохлорид

$C_{13}H_{10}N_2 \cdot HCl \cdot H_2O = 248.7$.

CAS — 90-45-9 (aminoacridine); 134-50-9 (anhydrous aminoacridine hydrochloride).

ATC — D08AA02.

ATC Vet — QD08AA02.



(aminoacridine)

Ethacridine Lactate (BANM, rINNM)

Acrinol; Aethacridinium Lacticum; Etakridiniilaktaatti; Etakridinlaktat; Etakridinlaktát; Etakridino laktatas; Etakrydyny mleczan; Éthacridine, lactate d'; Ethacridini lactas; Ethakridinlaktát; Lactato de etacridina; Lactoacridine. 6,9-Diamino-2-ethoxyacridine lactate.

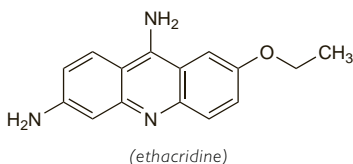
Этакридина Лактат

$C_{15}H_{15}N_3O \cdot C_3H_5O_3 = 343.4$.

CAS — 442-16-0 (ethacridine); 1837-57-6 (ethacridine lactate); 6402-23-9 (ethacridine lactate monohydrate).

ATC — B05CA08; D08AA01.

ATC Vet — QB05CA08; QD08AA01.



(ethacridine)

Pharmacopoeias. *Chin., Eur.* (see p.vii), and *Jpn* describe the monohydrate.

Ph. Eur. 6.2 (Ethacridine Lactate Monohydrate). A yellow crystalline powder. Sparingly soluble in water; very slightly soluble in alcohol; practically insoluble in dichloromethane. A 2% solution in water has a pH of 5.5 to 7.0. Protect from light.

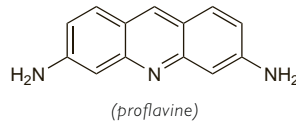
Proflavine Hemisulfate

Proflavine Hemisulphate (pINNM); Hemisulfato de proflavina; Neutral Proflavine Sulphate; Proflavine, Hémisulfate de; Proflavini Hemisulfas. 3,6-Diaminoacridine sulphate dihydrate.

Профлавіна Гемісульфат

$(C_{13}H_{11}N_3)_2 \cdot H_2SO_4 \cdot 2H_2O = 552.6$.

CAS — 92-62-6 (proflavine).



(proflavine)

Profile

The acridine derivatives are slow-acting antiseptics. They are bacteriostatic against many Gram-positive bacteria but less effective against Gram-negative bacteria. They are ineffective against spores. Their activity is increased in alkaline solutions and is not reduced by tissue fluids.

The acridine derivatives have been used for the treatment of infected wounds or burns and for skin disinfection, although they have been largely superseded by other antiseptics or suitable antibacterials. Prolonged treatment may delay healing. They have also been used for the local treatment of ear, oropharyngeal, and genito-urinary infections.

Aminoacridine is reported to be non-staining and is used as the hydrochloride as eye drops in the treatment and prophylaxis of superficial eye infections.

Ethacridine lactate is included in some preparations for the treatment of diarrhoea. It has also been given by extra-amniotic injection for the termination of pregnancy (p.2004) but other methods are usually preferred.

Other acridine derivatives covered elsewhere in *Martindale* include mepacrine (p.836), which is used in the treatment of giardiasis, and pyronaridine (p.612), which is used to treat malaria. Amsacrine (p.681) is a 9-anilinoacridine drug that is used in the treatment of adult leukaemias. Other acridine derivatives are also under investigation as anticancer drugs because of the ability of the acridine chromophore to intercalate DNA and inhibit topoisomerase enzymes.

Hypersensitivity to acridine derivatives has been reported.

References.

1. Wainwright M. Acridine—a neglected antibacterial chromophore. *J Antimicrob Chemother.* 2001; **47**: 1–13.
2. Denny WA. Acridine derivatives as chemotherapeutic agents. *Curr Med Chem* 2002; **9**: 1655–65.

Preparations

BPC 1973: Proflavine Cream.

Proprietary Preparations (details are given in Part 3)

Austral: Aminopt; **Ger:** Metifex; Neochinosol; Rivanol; Uroseptol†; **India:** Emcredil; Vecredil; **Pol:** Rivanol; Rivanolum; Rivel; Rywanol; **Turk:** Rivanol.

Multi-ingredient: **Arg:** Carnot Topico; Nene Dent; Otocunil; **Austral:** Medijel; **Austria:** Dermowund; **Braz:** Acridin; Cystex; Senol†; **Chile:** Molca; **Cz:** Tannacomp†; **Fr:** Chromargon; Pyorex; **Ger:** Anaesthesin-Rivanol; Nordapanin N†; Otoltan N mit Rivanol†; Tannacomp; **Hong Kong:** Burn Cream†; Medijel; **Hung:** Glycosept; **India:** Anaebell†; Emscab; **Israel:** Medijel; **Malaysia:** Burnol Plus; Medijel; **NZ:** Medijel; **Pol:** Septalan; **S.Afr.:** Achromide; Daromide; Vagarzol; **Singapore:** Burnol Plus; Medijel; **Spain:** Antigrietun; Hepro; **Switz:** Euproctol N; Flavangin†; Haemocortin; Haemolan; Tyrothricin; **Thai:** Burnol Plus; Flavinol; **UK:** Iglu; Medijel; **USA:** Alasulf; Deltavac; DIT1-2.

Alcohol ⊗

Aethanolum; Alcool; Alkol; Etanol; Etanol (96%); Etanol bezwodny; Etanoli; Etanolis; Éthanol; Ethanol; Ethanolum; Ethyl Alcohol.

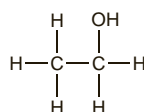
Алкогол; Этанол

$C_2H_5OH = 46.07$.

CAS — 64-17-5.

ATC — D08AX08; V03AB16; V03AZ01.

ATC Vet — QD08AX08; QV03AB16; QV03AZ01.



NOTE. The following terms have been used as 'street names' (see p.vi) or slang names for various forms of alcohol:

Booze; Drinks; Grog; Juice; Jungle juice; Liq; Liquor; Lunch head; Moonshine; Piss; Sauce; Schwillins.

Pharmacopoeias. Various strengths are included in *Br., Chin., Eur.* (see p.vii), *Int., Jpn, US*, and *Viet.* Also in *USNF*.

In *Martindale* the term alcohol is used for alcohol 95 or 96% v/v.

Ph. Eur. 6.2 (Ethanol, Anhydrous; Ethanolum Anhydricum; Ethanol BP 2008). It contains not less than 99.5% v/v or 99.2% w/w of C_2H_5OH at 20°. A colourless, clear, volatile, flammable, hygroscopic liquid; it burns with a blue, smokeless flame. B.p. about 78°. Miscible with water and with dichloromethane. Protect from light.

The BP 2008 gives Absolute Alcohol and Dehydrated Alcohol as approved synonyms.

Ph. Eur. 6.2 (Ethanol (96 per cent)). It contains not less than 95.1% v/v or 92.6% w/w and not more than 96.9% v/v or 95.2% w/w of C_2H_5OH at 20°, and water. A colourless, clear, volatile, flammable, hygroscopic liquid; it burns with a blue, smokeless flame. B.p. about 78°. Miscible with water and with dichloromethane. Protect from light.

The BP 2008 gives Alcohol (96 per cent) as an approved synonym.

BP 2008 (Dilute Ethanols). The monograph describes several dilute alcohols containing between 20 and 90% v/v of C_2H_5OH , and one of these, ethanol (90%), is also known as rectified spirit.

USP 31 (Alcohol). It contains not less than 92.3% w/w or 94.9% v/v and not more than 93.8% w/w or 96.0% v/v of C_2H_5OH at 15.56°. A clear, colourless, mobile, volatile liquid with a characteristic odour and burning taste; it is flammable. B.p. about 78°. Miscible with water and with almost all other organic solvents. Store in airtight containers. Protect from light.

USP 31 (Dehydrated Alcohol). It contains not less than 99.5% v/v or 99.2% w/w of C_2H_5OH (sp. gr. not more than 0.7962 at 15.56°). Store in airtight containers. Protect from light.

USNF 26 (Diluted Alcohol). It contains 48.4 to 49.5% v/v or 41 to 42% w/w of C_2H_5OH . Store away from fire in airtight containers.

Alcoholic strength. This is expressed as a percentage by volume of alcohol. It was previously often expressed in terms of *proof spirit*. *Proof spirit* contained about 57.1% v/v or 49.2% w/w of C_2H_5OH , and was defined as 'that which at the temperature of 51°F weighs exactly twelve-thirteenths of an equal measure of distilled water'. Spirit of such a strength that 100 volumes contained as much ethyl alcohol as 160 volumes of proof spirit was described as '60 OP' (over proof). Spirit of which 100 volumes contained as much alcohol as 40 volumes of proof spirit was described as '60 UP' (under proof).

An alternative method of indicating spirit strength was used on the labels of alcoholic beverages in the UK when the strength was given as a number of degrees, proof spirit being taken as 100°. In the USA alcoholic strength is expressed in degrees, the value of which is equal to twice the percentage by volume. Thus 70° proof (old UK system) is equivalent to 40% v/v, and therefore to 80° proof (USA system).

Adverse Effects

Adverse effects of alcohol arise chiefly from the intake of alcoholic beverages. The concentration of alcohol in the blood producing a state of intoxication varies between individuals.

- Low concentrations (up to 180 mg per 100 mL) of alcohol may result in impaired vision, reaction time, and coordination and emotional lability.
- At low to moderate concentrations (180 to 350 mg per 100 mL), alcohol acts as an apparent stimulant; depression of cortical function causes loss of judgement, slurred speech, diplopia, blurred vision, ataxia, lack of coordination, blackouts, sweating, tachycardia, nausea, vomiting, and incontinence. Alcohol inhibits the release of antidiuretic hormone resulting in enhanced diuresis. Acidosis (especially in children), hypoglycaemia, and hypokalaemia may occur.
- High concentrations (350 to 450 mg per 100 mL) of alcohol result in cold clammy skin, hypothermia, hypotension, stupor, coma, dilated pupils, and depressed or absent tendon reflexes. Severe hypoglycaemia, convulsions, respiratory depression, and metabolic acidosis may occur. Cardiac arrhythmias such as atrial fibrillation and AV block have been recorded.

The median lethal blood-alcohol concentration is generally estimated to be about 400 to 500 mg per 100 mL. Death may occur at lower blood-alcohol concentrations due to inhalation of vomit during unconsciousness.

Chronic excessive consumption of alcohol may cause damage to many organs, particularly the brain and the