

upon biliary or pancreatic secretions for absorption from the gastrointestinal tract. They provide 35 kJ (8.3 kcal) per g. They do not provide essential fatty acids.

Medium-chain triglycerides have also been used as bases for pharmaceutical preparations.

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Teceame; **Austral.:** Liqueigen; MCT Oil; **Canad.:** MCT Oil†; **Fin.:** Liqueigen; MCT Oily; **Fr.:** Liqueigen; **Gr.:** MCT Oil; **Hung.:** Structolipid; **Israel:** MCT; **Ital.:** MCT; Mytic 810; **Malaysia:** MCT Oil†; **NZ:** Liqueigen; MCT Oil; **Port.:** MCT Oil; **Singapore:** MCT†; **UK:** Alembical D; MCT Oil; **USA:** MCT.

Multi-ingredient: **Arg.:** Lipofundin MCT/LCT-F; Lipofundin MCT/LCT†; **Austral.:** Caprilon; MCT Duocal; **Austria:** Lipofundin mit MCT; SMOFlipid; Structolipid; **Belg.:** Medialipide†; **Chile:** Lipofundin MCT/LCT; Lipovenos MCT/LCT; **Cz.:** Lipofundin MCT/LCT; Lipopus; Nutriflex Lipid; SMOFlipid; Structolipid; **Denm.:** SMOFlipid; Structolipid; **Fin.:** Lipopus; Nutriflex Lipid; Structolipid; Vasolipid; **Fr.:** Lipocit; Medialipide; Structolipid; **Ger.:** Gleitgeilen; Lipofundin MCT; Lipovenos MCT; Nutriflex Lipid; SMOFlipid; Visine Trockene Augen; **Gr.:** Lipofundin MCT/LCT; SMOFlipid; Structolipid; **Hong Kong:** Lipofundin MCT/LCT; Nutriflex Lipid; **Hung.:** Lipofundin MCT; Lipovenos PLR†; SMOFlipid; **Indon.:** Lipofundin MCT/LCT; **Ir.:** Caprilon; Liqueigen; MCT Duocal†; **Israel:** Lipofundin MCT/LCT; **Ital.:** Caprilon; Lipofundin MCT; Nutripen Lipid; Nutriplus Lipid; NutriSpecial Lipid; Structolipid; **Mex.:** Lipofundin MCT/LCT; Lipovenos MCT; **Neth.:** Lipofundin MCT/LCT; Lipopus; Nutriflex Lipid; SMOFlipid; Structolipid; **Norw.:** Nutriflex Lipid; SMOFlipid; Structolipid; Vasolipid; **NZ:** Structolipid; **Pol.:** Lipofundin MCT/LCT; SMOFlipid; **Port.:** Lipofundina MCT/LCT; Lipopus; Nutri-braun; Structolipid; **S.Afr.:** Lipofundin MCT/LCT; **Singapore:** Lipofundin MCT/LCT†; **Spain:** Lipofundina MCT/LCT; Nutriflex Lipid; Structolipid; **Swed.:** Lipopus; Nutriflex Lipid; SMOFlipid; Structolipid; Vasolipid; **Switz.:** Lipofundin MCT/LCT; Nutriflex Lipid; Structolipid; **Thai.:** Lipofundin MCT/LCT; Structolipid; **Turk.:** Lipofundin MCT/LCT; **UK:** Caprilon; Imu-derm; Lipidex; Lipofundin MCT/LCT; Liqueigen; MCT Duocal; SMOFlipid; Structolipid; **Venez.:** Lipofundin MCT/LCT; Propol†.

Molybdenum

Molibdeno; Molybdän; Molybdène.

Mo = 95.96.

Ammonium Molybdate

Amonowy molibdenian; Molibdato de amonio. Hexaammonium molybdate tetrahydrate.

(NH₄)₆Mo₇O₂₄·4H₂O = 1236.0.

CAS — 12054-85-2.

Pharmacopoeias. In US.

USP 31 (Ammonium Molybdate). Colourless or slightly greenish or yellowish crystals. Soluble in water; practically insoluble in alcohol. Store in airtight containers.

Sodium Molybdate

Molibdato de sodio; Molybdenan sodny dihydrát; Natrii molybdates dihydricus; Natrio molibdatas dihidratas; Nátrium-molibdenát-dihidrát; Natriummolybdaattidihydraatti; Natriummolybdatdihydrat; Sodium (molybdate de) dihydrát; Sodu molibdenian.

Na₂MoO₄·2H₂O = 242.0.

Pharmacopoeias. In Eur. (see p.vii). *Ger.* also includes a monograph for the anhydrous substance.

Ph. Eur. 6.2 (Sodium Molybdate Dihydrate). A white or almost white powder or colourless crystals. Freely soluble in water.

Adverse Effects

Very high intakes of molybdenum, and associated increases in xanthine oxidase activity, may result in hyperuricaemia, and possibly gout. Molybdenum intoxication may impair the utilisation of copper.

Uses and Administration

Molybdenum is an essential trace element and small amounts, in the form of ammonium molybdate or sodium molybdate, are sometimes added to solutions for total parenteral nutrition. A suggested dose is about 20 to 120 micrograms (0.2 to 1.2 micromoles) elemental molybdenum daily.

Ammonium molybdate is used in veterinary medicine to treat copper poisoning in sheep.

Human requirements. In the UK neither a reference nutrient intake (RNI) nor an estimated average requirement (EAR) (see p.1925) has been set for molybdenum although a safe intake was believed to be between 50 and 400 micrograms (0.5 and 4 micromoles) daily for adults.¹ In the USA, the recommended dietary allowance is 45 micrograms daily for adults.² The tolerable upper intake level is 2 mg daily.² WHO make the suggestion that the adult basal requirement for molybdenum could be about 25 micrograms daily,³ corresponding to approximately 400 nanograms/kg.

Foods contributing to dietary molybdenum include milk, beans, breads, and cereals; however, extreme regional variations occur in molybdenum contents of food crops due to soil differences.

1. DoH. Dietary reference values for food energy and nutrients for the United Kingdom: report of the panel on dietary reference values of the committee on medical aspects of food policy. *Report on health and social subjects 41*. London: HMSO, 1991.

The symbol † denotes a preparation no longer actively marketed

- Standing Committee on the Scientific Evaluation of Dietary Reference Intakes of the Food and Nutrition Board. *Dietary Reference Intakes for vitamin A, vitamin K, arsenic, boron, chromium, copper, iodine, iron, manganese, molybdenum, nickel, silicon, vanadium, and zinc*. Washington DC: National Academy Press, 2001. Also available at: <http://www.nap.edu/openbook.php?isbn=0309072794> (accessed 21/07/08)
- WHO. Molybdenum. In: *Trace elements in human nutrition and health*. Geneva: WHO, 1996; 144–54.

Preparations

USP 31: Ammonium Molybdate Injection.

Proprietary Preparations (details are given in Part 3)

Fr.: Molybdene Injectable; **USA:** Molyphen.

Neohesperidin Dihydrochalcone

E959; Neohesperidiindihydrokalkoni; Neohesperidin DC; Neohesperidin-dihydrokalkonas; Neohesperidin-dihydrochalconum; Neohesperidin-dihydrochalcon; Neohesperidindivätekalkon; Neohesperidine DC; Néohespéridine-dihydrochalcone; Neohesperidin-dihydro-kalkon; NHDC. 3,5-Dihydroxy-4-[3-(3-hydroxy-4-methoxyphenyl)propionyl]phenyl 2-O-(6-deoxy-α-L-mannopyranosyl)-β-D-glucopyranoside.

C₂₈H₃₆O₁₅ = 612.6.

CAS — 13241-33-3 (neohesperidin); 20702-77-6 (neohesperidin dihydrochalcone); 18916-17-1 (naringin dihydrochalcone); 65520-51-6 (neoeriocitrin dihydrochalcone).

Pharmacopoeias. In Eur. (see p.vii).

Ph. Eur. 6.2 (Neohesperidin-dihydrochalcone). A white or yellowish-white powder. Practically insoluble in water and in dichloromethane; freely soluble in dimethyl sulfoxide; soluble in methyl alcohol. Protect from light.

Profile

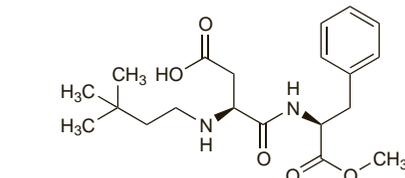
Neohesperidin dihydrochalcone is an intense sweetener derived from naringin, a flavonoid present in citrus peel. It is about 1000 to 1500 times as sweet as sucrose and is used in foods, beverages, and pharmaceuticals. It has a synergistic sweetening effect when used with other sweeteners.

Neotame

Neotamo. N-[N-(3,3-Dimethylbutyl)-L-α-aspartyl]-L-phenylalanine 1-methyl ester.

C₂₀H₃₀N₂O₅ = 378.5.

CAS — 165450-17-9.



Pharmacopoeias. In USNF.

USNF 26 (Neotame). Store in a dry place at a temperature not exceeding 40°.

Profile

Neotame is an intense sweetener used in foods and beverages. It has between 7000 and 13 000 times the sweetening power of sucrose and is stable to heat.

References

- Anonymous. Neotame—a new artificial sweetener. *Med Lett Drugs Ther* 2002; **44**: 73–4.

Nicotinamide Ascorbate (rINN)

Ascorbato de nicotinamida; Niacinamide Ascorbate; Nicoscorbine; Nicotinamide, Ascorbate de; Nicotinamid Ascorbas.

Никотинамида Аскорбат

C₁₂H₁₄N₂O₇ = 298.2.

CAS — 1987-71-9.

Profile

Nicotinamide ascorbate is a complex of nicotinamide (p.1957) with ascorbic acid (p.1983) that is used in multivitamin preparations. It has also been given with betaine glucuronate and di-olamine glucuronate for liver disorders.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: **Hong Kong:** Jetepar; **Ital.:** Ietepar†; **Malaysia:** Jetepar; **Philipp.:** Jetepar; **Singapore:** Jetepar.

Nicotinic Acid (rINN)

375; Acide nicotinique; Ácido nicotínico; Acidum nicotinicum; Kwas nikotynowy; Kyselina nikotinová; Niacin; Nikotiniinappo; Nikotinik Asit; Nikotino rūgštis; Nikotinsäure; Nikotinsav; Nikotinsyra. Pyridine-3-carboxylic acid.

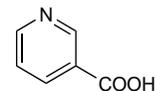
Никотиновая Кислота

C₆H₅NO₂ = 123.1.

CAS — 59-67-6.

ATC — C04AC01; C10AD02.

ATC Vet — QC04AC01; QC10AD02.



NOTE. Some published sources use the term niacin as a generic term to include both nicotinic acid and nicotinamide.

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

Ph. Eur. 6.2 (Nicotinic Acid). A white or almost white, crystalline powder. Sparingly soluble in water; soluble in boiling water and in boiling alcohol. It dissolves in dilute solutions of alkali hydroxides and carbonates. Protect from light.

USP 31 (Niacin). White crystals or crystalline powder, odourless or has a slight odour. Soluble 1 in 60 of water; freely soluble in boiling water, in boiling alcohol, and in solutions of alkali hydroxides and carbonates; practically insoluble in ether.

Nicotinamide (rINN)

Niacinamide; Nicotinamida; Nicotinamidum; Nicotinic Acid Amide; Nicotylamide; Nicotiniamidi; Nicotinamid; Nikotinamid; Nikotinamid; Vitamin B₃; Vitamin PP. Pyridine-3-carboxamide.

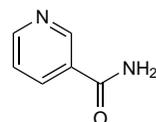
Никотинамид

C₆H₆N₂O = 122.1.

CAS — 98-92-0.

ATC — A11HA01.

ATC Vet — QA11HA01.



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

Ph. Eur. 6.2 (Nicotinamide). A white or almost white, crystalline powder or colourless crystals. Freely soluble in water and in dehydrated alcohol. A 5% solution in water has a pH of 6.0 to 7.5.

USP 31 (Niacinamide). A white crystalline powder, odourless or practically so. Soluble 1 in 1.5 of water, 1 in 10 of boiling water, and 1 in 5.5 of alcohol; soluble in glycerol. Its solutions are neutral to litmus. Store in airtight containers.

Adverse Effects and Treatment

Nicotinic acid has a vasodilator action and when given by mouth or by injection in therapeutic doses it may cause flushing, a sensation of heat, faintness, and a pounding in the head. Flushing may be accompanied by dizziness, tachycardia, palpitations, dyspnoea, sweating, chills, or oedema. These symptoms are transient and various strategies have been proposed to reduce them (see Incidence of Adverse Effects, below). Nicotinamide does not have a vasodilator action.

Other adverse effects that have been reported, especially after high doses of nicotinic acid, include dryness of the skin, pruritus, hyperpigmentation, cramps, diarrhoea, nausea and vomiting, anorexia, activation of peptic ulcer, amblyopia, jaundice and impairment of liver function, decrease in glucose tolerance, hyperglycaemia, and hyperuricaemia. Most of these effects subside on withdrawal of the drug. Hypophosphataemia, a reduction in platelet counts, and prolongation of prothrombin time have also been reported. Insomnia, myalgia, hypotension, and rhinitis may occur rarely.