

THE PENGUIN DICTIONARY OF  
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Second Edition

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## PENGUIN BOOKS

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agent. Used in preparations for application to the skin to simulate a sun-tan.

**1,2-dihydroxybenzene, catechol, pyrocatechol,**  $C_6H_6O_2$ . Colourless crystals; m.p.  $105^\circ C$ , b.p.  $240^\circ C$ . Strong reducing agent.

Obtained by fusing 2-benzenedisulphonic acid with NaOH. It is used as a photographic developer, for preparation of dyes and pharmaceuticals, and as an antioxidant.

**1,3-dihydroxybenzene** See resorcinol.

**1,4-dihydroxybenzene** See hydroquinone.

**dihydroxybutanes** See butylene glycols.

**2,2'-dihydroxydiethyl ether** See diethylene-glycol.

**1,2-dihydroxyethane, ethylene glycol,**  $HOCH_2 \cdot CH_2OH$ . Colourless, odourless, rather viscous hygroscopic liquid having a sweet taste, b.p.  $197^\circ C$ . Manufactured from ethylene chlorohydrin and  $NaHCO_3$  solution, or by the hydration of ethylene oxide with dilute sulphuric acid or water under pressure at  $195^\circ C$ . Used in anti-freezes and coolants for engines (50%) and in manufacture of polyester fibres (e.g. Terylene) and in the manufacture of various esters used as plasticizers. US production 1986 2.16 megatonnes. See ethylene-glycol monomethyl ether.

**dihydroxymalonic acid** See mesoxalic acid.

**3,4-dihydroxyphenylalanine, Dopa,**  $C_9H_{11}NO_4$ . M.p.  $282^\circ C$  (decomp.). The naturally occurring substance is laevorotatory. It is an amino-acid isolated from various plant sources, but not found in the animal body. It is formed from tyrosine as the first stage in the oxidation of tyrosine to melanin. It is used in the treatment of Parkinson's disease.

**1,2-dihydroxypropane, propylene glycol,**  $CH_3 \cdot CHOH \cdot CH_2OH$ . A colourless, almost odourless liquid. It has a sweet taste, but is more acrid than ethylene glycol; b.p.  $187^\circ C$ . Manufactured by heating propylene chlorohydrin with a solution of  $NaHCO_3$  under pressure. It closely resembles dihydroxyethane in its properties, but is less toxic. Forms mono- and di-esters and ethers. Used as an anti-freeze and in the preparation of perfumes and flavouring extracts, as a solvent and in mould growth inhibition. US production 1986 275 000 tonnes.

**diimide, diimine,  $HN=NH$ .** A reagent generated *in situ* by oxidation ( $Cu^{2+}/air$ ,  $H_2O_2$ ,  $HgO$ ) of hydrazine, for the reduction of symmetrical multiple bonds ( $C=C$ ,  $C \equiv C$ ,  $N=N$ ) by stereospecific *cis*-addition of hydrogen.

Polar double bonds ( $C=O$ ,  $C \equiv N$ ,  $NO_2$ ) are reduced less easily. In the absence of a substrate for reduction diimide disproportionates to nitrogen and hydrazine.

**3,5-diiodotyrosine, iodogorgic acid,**  $C_9H_9I_2NO_3$ . Pale, straw-coloured needles, m.p.  $198^\circ C$ . Found in certain marine organisms, such as corals and sponges, and in the thyroid gland.

**diisobutyl ketone, isovalerone, 2,6-dimethyl-4-heptanone,**

$(CH_3)_2CHCH_2COCH_2CH(CH_3)_2$ .

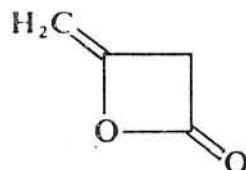
Obtained by reduction of phorone, b.p.  $169^\circ C$ . Very good solvent for aldehyde resins.

**2,4-diisocyanatotoluene, toluene-2,4-diisocyanate, 2,4-tolylenediisocyanate, T.D.I., Nacconate 100** A lachrymatory liquid; b.p.  $251^\circ C$ . Manufactured from phosgene and 2,4-diaminotoluene. Used for preparing polyurethane foams and other elastomers by reaction with polyhydroxy compounds. Produces skin irritation and causes allergic eczema and bronchial asthma.

**diisopropyl ether** See isopropyl ether.

**diisopropylideneacetone** See phorone.

**diketen,**  $C_4H_4O_2$ . A colourless highly



lachrymatory liquid; b.p.  $127^\circ C$ , m.p.  $-6.5^\circ C$ . Manufactured from propanone via keten. It reacts with alcohols and amines to give acetoacetic esters and amides respectively.

**diketones** Organic compounds containing two keto ( $>C=O$ ) groups. They are classified according to the number of carbon atoms separating the two keto groups.  $\alpha$ - or 1,2-diketones are formed from their mono-oximes, the isonitrosoketones, by boiling with dilute sulphuric acid. The aliphatic  $\alpha$ -diketones are yellow oils with pungent odours, while the aromatic diketones are crystalline solids. They react characteristically with 2-phenylenediamines to give quinoxalines; they form mono- and di-oximes with hydroxylamine and osazones with hydrazines.  $\beta$ - or 1,3-diketones  $R \cdot CO \cdot CH_2 \cdot CO \cdot R$  are obtained by the reaction between an ester and a ketone in the presence of metallic sodium or sodamide. They show acidic properties and form metallic derivatives, many of which are insoluble in water but soluble in organic solvents. These diketones can