

HACKH'S CHEMICAL DICTIONARY

[*American and British Usage*]

*Containing the Words Generally Used in Chemistry,
and Many of the Terms Used in the Related
Sciences of Physics, Astrophysics, Mineralogy,
Pharmacy, Agriculture, Biology,
Medicine, Engineering, etc.*

Based on Recent Chemical Literature

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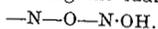
in fused potassium nitrate at 500°C. ation is thereby minimized.

All steels containing 0.2-0.6% C, ened by nitridation.

e name for prills of ammonium nitrate th a deliquescence-preventing additive. $H_2NO_2 = 62.1$. Colorless crystals, **yl-** $C_6H_5NH\cdot NO_2 = 138.1$. Colorless, soluble in water.

group of compounds derived from ad differing from nitramines by the radical $-COO-$; as, $NO_2\cdot NH\cdot COOH$, c acid.

An organic compound containing $-NH\cdot NO_2$ or $=N\cdot NO_2$. (2) Picryl An indicator, changing at pH 10.5 s (weakly alkaline) to brown (strongly ethyl- $Et_2N\cdot NO_2 = 118.1$. Colorless 6. **dimethyl-** $Me_2N\cdot NO_2 = 90.1$ stals, m.58, soluble in water. **ethyl-** = 90.1. Colorless liquid, m.3. **iso-** containing the radical



h- $NO_2 = 138.1$. Colorless crystals, in water. **phenyl methyl-** $MeNPh\cdot$ 2. Colorless crystals, m.39, soluble **opyl-** $PrNH\cdot NO_2$. Colorless liquid,

radical NO_2NH- . **n. acetic acid.** = 120.2. A homolog of nitro- (colorless crystals, m.103, soluble in y acid).

$C_6H_2O_8N_2 = 230.07$. Dinitrodihy- inone, m.100, decomp. 170, soluble

$F_3N:NO\cdot OH = 138.1$. Diazoben- phenylisonitramine. An isomer of ine. Colorless crystals, m.46, soluble

$C_6H_4\cdot NO_2 = 138.1$. **ortho-** or needles, m.71, soluble in water. **ellow needles**, m.114, slightly soluble **a-** or **1,4-** Yellow needles, m.146, r. All used in organic synthesis and for strong acids. **di-** See *dinitro-*

mpounds derived from benzene by n of 2 or more H atoms by one or and NO_2- radicals. The higher- s are powerful explosives.

salt of nitric acid, or compound radical $-NO_3$. (2) Nitration. O_3- ion, colorless, and forming no gitates with metallic ions. **n. of**

n. n. of potash. Potassium n. lium **n. n. of soda-potash-** A crude er: sodium nitrate 75, potassium fertilizer.

ing an organic compound con- O_2 group.

ral form of sodium nitrate. roduction of the NO_2 group into opound, usually by means of a ric and nitric acids.

ndicating an organic compound adical $-O\cdot NO_2$. Cf. *nitrito-*.

l, usually double-jacketed, with

heating or cooling coils and stirring device, used for nitration.

Nitrazine Paper. Trademark for a filter paper, impregnated with sodium dinitrophenyl azonaphthol disulfonate; used to indicate pH values: yellow 4.5, olive green 6.2, blue 7.0. **N. yellow.** An indicator dye (pH 6.5: yellow—acid to blue-green—alkaline).

nitre. Niter. **n. air.** See *oxygen*.

nitrenes. Compounds of the type $R_2C:NR:CR_2$.

nitriacidium ion. Nitracidium ion.

nitric acid. $HNO_3 = 63.02$. Colorless liquid, $d_4^{20} 1.53$, m.—40.3, b.86, soluble in water; used extensively as its aqueous solutions: (1) Fuming: 86% HNO_3 with some N_2O_4 . Brown-red fuming liquid, d.1.48-1.5; an energetic oxidizing agent in chemical analysis and synthesis. (2) Concentrated: 65% HNO_3 . Aqua fortis, azotic acid. Faintly yellow liquid, d.1.40-1.42. Used as a solvent for metals and an oxidizing agent; in etching and many chemical operations; and to nitrate organic compounds. (3) 32-34% HNO_3 . d.1.20. (4) Dilute: 10% HNO_3 . Colorless liquid, d.1.06; a reagent, solvent, and acidifying agent. **chloro-** See *chloro-*. **per-** HNO_4 . An acid of doubtful existence.

n. anhydride. Nitrogen pentoxide. **n. hydrate.** $HNO_3 + 32\% H_2O$. $d_{15.5}^{20} 1.414$, b.121.

nitric ether. Ethyl nitrate.

nitric oxide. $NO = 30.0$. $N_2O_2 = 60.0$. Nitrogen dioxide. Colorless gas, $d_{air} = 1.0366$, b.—153, soluble in water. Formed in the electric arc from air; oxidizes readily to nitrogen peroxide.

nitridation. (1) Formation of metallic nitrides by heating metals in nitrogen to increase hardness. Cf. *nitration*. (2) De-electronation in the ammonia system, analogous to oxidation in the water system. Cf. *nitridizing agent*.

nitride. A binary compound of nitrogen and a metal. The alkali and earth-alkali nitrides are readily hydrolyzed: $Mg_3N_2 + 6H_2O = 3Mg(OH)_2 + 2NH_3$.

nitridizing agent. A substance that furnishes nitrogen or causes an exchange of electrons in liquid ammonia; as, hydrazoic acid (ammononitric acid), HN_3 ; analogous to nitric acid, HNO_3 , as oxidizing agent.

nitriifiable. Describing a nitrogen compound that can be transformed into nitrates by soil bacteria.

nitrication. Oxidation of the nitrogen in ammonia to nitrous and nitric acid or salts.

nitrifiers. Soil bacteria which oxidize ammonia and its derivatives to nitrites (as nitromonas) or to nitrates (as nitrobacter).

nitriifying. To cause the oxidation of ammonia or atmospheric nitrogen to nitrites and nitrates, e.g., by n. bacteria and n. catalysts.

nitrilase. A catalase that converts aldehydes to cyanohydrins, $R\cdot CHO + HCN$.

nitriole. A cyanide prepared from an acid amide, $R\cdot CONH_2 - H_2O = R\cdot CN$; on hydrolysis they yield the corresponding acid and evolve ammonia.

n. group. The negative $\equiv N$ from ammonia after substitution of its 3 H atoms. **n. rubber.** q. v.

nitrioles. Cyanides. Organic compounds containing the radical $-CN$. **acid-Nitriole.** A name indicating the relation of n. with the $-COOH$ group: $-C(:O)\cdot OH \rightarrow -C(:O)\cdot NH_2 \rightarrow -C:N$. **basic-** NR_3 . A tertiary amine having 3 different C atoms attached

to the same N. di- Dicyanide. A compound containing 2 $-CN$ radicals. **mono-** A compound containing one $-CN$ radical.

nitri- Prefix indicating a triple-bond nitrogen atom, $\equiv N$.

Nitrilon. Trade name for a polyacrylonitrile synthetic fiber.

nitrene. $N_3 = 42.02$. A hypothetical allotropic form of nitrogen analogous to ozone, O_3 . See *active nitrogen*.

nitrite. A salt of nitrous acid, or a compound containing the radical $-NO_2$. The inorganic nitrites of the type MNO_2 are all insoluble, except the alkali nitrites. The organic nitrites or nitrito compounds may be isomeric, but not identical with the corresponding nitro compounds.

nitrito- Describing an organic compound containing the radical $-O\cdot N:O$ (oxynitroso). **n. cobalamin.** Vitamin B_{12c} . The vitamin produced by replacing the $-CN$ group of vitamin B_{12} by a $-NO_2$ group.

nitro- (1) A prefix which denotes the presence of

the radical $-NO_2$ or $-N \begin{array}{c} \diagup O \\ \diagdown O \end{array}$. Nitro compounds

are usually yellowish in color, and differ from the less stable, isomeric nitrito compounds. Cf. *nitroxyl*, *nitrite*, *nitrito*. (2) A misnomer for nitrate; as, nitroglycerin (glyceryl nitrate). **aci-** Isonitro-. The radical $HOON=$. **iso-** See *iso-*.

nitroacid. A compound containing both the radicals $-COOH$ and $-NO_2$; as: $NO_2\cdot CH_2\cdot COOH$, nitroacetic acid; $NO_2\cdot CH_2\cdot CH_2\cdot COOH$, nitropropionic acid.

nitroalizarin. $C_{14}H_5O_2(OH)_2NO_2 = 285.1$. **α -** or **4,1,2-** Yellow crystals, decomp. 290. **β -** or **3,1,2-** Alizarin orange. Orange-yellow crystals, decomp. 244, slightly soluble in water, soluble in alcohol; used as dye, and as an intermediate in organic synthesis.

nitroamine. Nitramine.

nitroanisole. $C_6H_4(OMe)NO_2 = 153.1$. **ortho-** 1-Methoxy-2-nitrobenzene. Yellow liquid, d.1.268, m.9, b.265. **meta-** m.38, b.258. **para-** Colorless or yellowish plates, d.1.233, m.54, b.258. Insoluble in water, soluble in alcohol or ether.

nitroanthracene. $C_{14}H_9NO_2 = 223.2$. Nitrosoanthrone. Yellow needles, m.146, insoluble in water, soluble in benzene or chloroform.

nitroanthraquinone. $C_6H_4(CO)_2C_6H_3NO_2 = 253.1$. **α -** or **1-** Yellow needles, m.228, subliming when heated, insoluble in water, soluble in alcohol or ether. **β -** or **2-** Yellow needles, m.184, subliming when heated, insoluble in water, soluble in alcohol or ether.

n. sulfonic acid. A reagent for sugars.

Nitrobacter. A soil bacterium or other micro-organism that oxidizes ammonia and its derivatives, or atmospheric nitrogen, to nitrites or nitrates.

nitrobacteria. Soil bacteria; as, Nitrobacter, Nitrosococcus, or Nitrosomonas.

nitrobarite. $Ba(NO_3)_2$. A native barium nitrate.

nitrobenzaldehyde. $C_6H_4(NO_2)CHO = 151.1$. **ortho-** Yellow needles, m.44, slightly soluble in water. **meta-** Colorless needles, m.58. **para-** Colorless prisms, m.106, soluble in water; used in indigo synthesis.