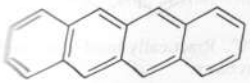
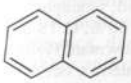
(35°C) 10.13 ±0.02, (45°C) 9.92 ±0.03. Freely sol g dissolve in 100 ml) and in alcohol. Slightly sol in Insol in benzene, ether. A 1% aq soln has a pH of in rats: 385 mg/kg (Gylfe).
Adrenergic (vasoconstrictor); decongestant.

Naphthacene. [92-24-0] Tetracene; 2,3-benzanthracene. chrysogen. $C_{18}H_{12}$; mol wt 228.29. C 94.70%, H Occurs in coal tar. Contaminates commercial anthracene imparts a yellow color. Isoln: Cook *et al., Proc. Roy.* **A111,** 455 (1932). Isoln from crude anthracene by Winterstein *et al., Z. Physiol. Chem.* **230,** 159 Synthesis by condensing succinic acid and phthalic anhydride in presence of sodium acetate: Gabriel, Michael, *Ber.* **10,** 1377; **11,** 1682 (1878); Roser, *Ber.* **17,** 2744 (1884); *Ber.* **26,** 2582 (1893); Gabriel, Leupold, *Ber.* **31,** 1159, Wanag, *Ber.* **70,** 274 (1937); from 1-naphthol and anhydride: *Deichler, Weizmann, Ber.* **36,** *547, 719 (1903); DE 208345 (1916); from 1,5-dihydroxynaphthalene and* anhydride: Bentley *et al., J. Chem. Soc.* **91,** 411, 1588 tetralin and phthalic anhydride: Schroeter, *Ber.* **54,** DE 346673 (1918); *cf.* Fieser, *J. Am. Chem. Soc.* **53,** Other syntheses: Coulson, *J. Chem. Soc.* **1935,** 77; *et al., ibid.* **1939,** 398.



leaflets from xylene. d 1.35. Sublimes *in vacuo*. mp capillary tube), mp 357° (copper block). Absorption *Ber.* **69,** 607 (1936). Fluorescence maxima: Z. *Kristallogr.* **89,** 538 (1934). Difficultly sol in Solns show slight green fluorescence in daylight. a picrate.

Naphthalene. *[91-20-3] Naphthalin; naphthene; tar* $C_{10}H_8$; *mol wt 128.17. C 93.71%, H 6.29%. Major* coal tar. *Dry coal tar contains about 11%. Crystal-*middle or *"carbolic oil" fraction of the distilled tar.* pressing, which may be followed by washing with and water, then by fractional distillation or by Manuf: *Faith, Keyes & Clark's Industrial Chemicals,* M. K. Moran, Eds. (Wiley-Interscience, New 975) pp 556-562. *Review:* R. M. Gaydos in *Encyclopedia of Chemical Technology* **vol. 15** (Wi- New York, 3rd ed., 1981) pp 698-719. Review of human exposure: *Toxicological Profile for Naph-thalene, and 2-Methylnaphthalene (PB2006-* pp.



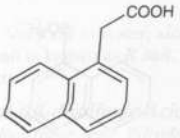
prismatic plates from ether or by sublimation; also scales, powder, balls, or cakes, mp 80.2°. Odor of volatilizes appreciably at room temp. d_4^{20} 1.162. d_4^{100} appreciably at temps above mp; volatile with 7.9°; bp_{400} 193.2°; bp_{200} 167.7°; bp_{100} 145.5°; bp_{60} 9.3°; bp_{20} 101.7°; bp_{10} 85.8°. Flash pt, open cup closed cup 190°F (88°C). Autoignition temp 1053°F 58212. Purple fluorescence in Hg light (petr ether let absorption: Several characteristic bands be-320 nm in hexane. Insol in water. One gram methanol or ethanol, in 3.5 ml benzene or toluene, turpentine, in 2 ml chloroform or carbon tetra-carbon disulfide. Very sol in ether, hydronaph-volatile oils.
al symptoms of overexposure are eye irritation; tical neuritis; dematitis; headache, confusion, ; nausea, vomiting, abdominal pain; bladder eating; acute intravascular hemolysis, anemia, jaundice; hematuria, hemoglobinuria, renal *SH Pocket Guide to Chemical Hazards* (DHHS/NIOSH 97-140, 1997) p 220; *Clinical Toxicology of Commercial Products,* R. E. Gosselin *et al.,* Eds. (Williams & Wilkins, Baltimore, 4th ed., 1984) *Section III,* pp *307-311. This substance is* reasonably anticipated to be a human carcinogen: *Report on Carcinogens, Eleventh Edition* (PB2005-104914, 2004) p III-177.

USE: Manuf phthalic and anthranilic acids which are used in making indigo, indanthrene, and triphenylmethane dyes. Manuf of hydroxyl (naphthols), amino (naphthylamines), sulfonic acid and similar compds used in the dye industries. Manuf of synthetic resins, celluloid, lampblack, smokeless powder. Manuf of hydronaphthalenes (Tetralin, Decalin) which are used as solvents, in lubricants, and in motor fuels. Moth repellent and insecticide.

THERAP CAT: Has been used as antiseptic (topical and intestinal); anthelmintic (Cestodes).

THERAP CAT (VET): Has been used in dusting powders, as an insecticide and internally as an intestinal antiseptic and vermicide.

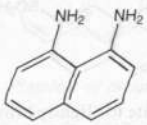
6371. 1-Naphthaleneacetic Acid. *[86-87-3] α-Naphthaleneacetic acid; naphthylacetic acid; NAA; Fruitone-N; Planofix;* Tre-Hold. $C_{12}H_{10}O_2$; mol wt 186.21. C 77.40%, H 5.41%, O 17.18%. Prepn from naphthalene + chloroacetic acid: Ogata, Ishiguro, *J. Am. Chem. Soc.* **72,** 4302 (1950); Southwick *et al., ibid.* **76,** 754 (1954); **US 2655531** *(1953 to FMC); from naphthylacetonitrile:* Wenner, **US 2489348** (1949 to Hoffmann-La Roche); *J. Org. Chem.* **15,** 548 (1950). *Activity:* F. E. Gardiner *et al., Science* **90,** 208 (1939). *Crystal structure:* S. S. Rajan, *Acta Crystallogr.* **B34,** 998 (1978). *Toxicity study:* G. W. Bailey, J. L. White, *Residue Rev.* **10,** 97 (1965).



Needles from water, mp 134.5-135.5°. Sol in about 30 parts alcohol; freely sol in acetone, ether, chloroform. Soly in water at 17°: 0.38 g/l. LD_{50} orally in rats: 1000 mg/kg (Bailey, White).

USE: Plant growth regulator.

6372. 1,8-Naphthalenediamine. [479-27-6] 1,8-Diaminonaphthalene. $C_{10}H_{10}N_2$; mol wt 158.20. C 75.92%, H 6.37%, N 17.71%. Prepd by reducing 1,8-dinitronaphthalene with phosphorus triiodide: Meyer, Müller, *Ber.* **30,** 775 (1897).

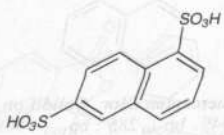


Crystals from dil alc, mp 66.5°. bp_{12} 205°; $n_D^{99.4}$ 1.6828; $d_4^{99.4}$ 1.1265. Sublimable. Turns brown on standing. Soluble in alcohol or ether; slightly sol in water or chloroform.

Dihydrochloride. $C_{10}H_{12}Cl_2N_2$. Leaflets, mp 280°.

USE: Antioxidant for lubricating oils. Detection of selenium and nitrites.

6373. 1,6-Naphthalenedisulfonic Acid. *[525-37-1]* Ewer-Pick acid. $C_{10}H_8O_6S_2$; mol wt 288.30. C 41.66%, H 2.80%, O 33.30%, S 22.24%. Prepn: Fierz-David, Hasler, *Helv. Chim. Acta* **6,** 1134 (1923).



Crystals. Very sol in water; sol in alcohol; practically insol in ether.

6374. 2,6-Naphthalenedisulfonic Acid. *[581-75-9]* Ebert-Merz β-acid. $C_{10}H_8O_6S_2$; *mol wt 288.30. C 41.66%, H 2.80%, O*