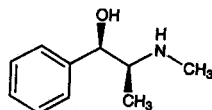
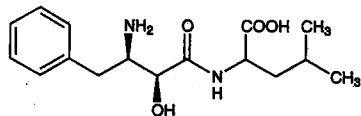
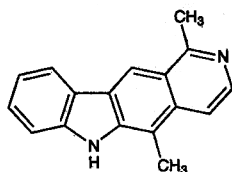
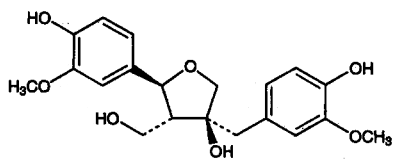
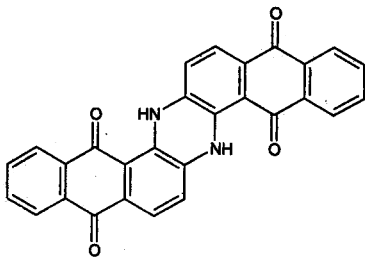


$$H = [2C + 2] - [2 \times \text{deg. unsat.}] + N - X$$

(base amount) (deduction for extra bonds and rings) adds a bonding site displaces a bonding site



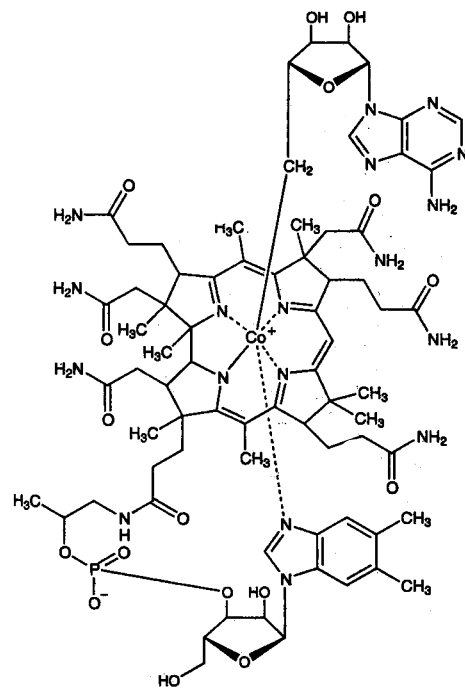
4959. Indanthrene®. [81-77-6] 6,15-Dihydro-5,9,14,18-anthrazinetetrone; *N,N'*-dihydro-1,2,1',2'-anthraquinonazine. $C_{16}H_{10}N_2O_4$; mol wt 442.42. C 76.01%, H 3.19%, N 6.33%, O 14.47%. Vat dye discovered by René Bohn (1901). Prepn: Fierz-David, Blangey, *Grundlegende Operationen der Farbenchemie* (Vienna, 5th ed., 1943) pp 304-305; Thielert, Bauman, US 2693469 (1954 to Bayer); Sutter, Fioroni, US 2831860 (1958 to Ciba); Kastner, US 3138612 (1964 to Allied Chem.). Structure: Weinstein, Merrit, *J. Am. Chem. Soc.* **81**, 3759 (1959).



Blue powder, dec 470-500°. uv max on cellophane film: 278 nm. Practically insol in organic solvents. Sol in concd H_2SO_4 , in dil alkali solns. **Indanthrene Blue R**, the usual commercial grade, is extremely stable to light and heat, but sensitive to chlorine. A purer grade, which is not as sensitive to chlorine, is sold as **Indanthrene Brilliant Blue FF**.

USE: Mainly to dye cotton.

2476. Cobamamide. [13870-90-1] Co-(5'-deoxyadenosine-5') deriv of 3'-ester of cobinamide dihydrogen phosphate (ester) with 5,6-dimethyl-1- α -D-ribofuranosyl-1*H*-benzimidazole, inner salt; cobamamidum; coenzyme B₁₂; DBC; adenosyl-B₁₂; 5'-deoxyadenosyl-B₁₂; 5'-deoxyadenosylcobalamine; dibenzozamide; dibenzozamide; dimebenzozamide; 5,6-dimethylbenzimidazolylcobamide coenzyme; 5,6-dimethylbenzimidazolylcobamide 5'-deoxyadenosine; vitamin B₁₂ coenzyme; Actimide; Ademide; Betarin; Calomide; Cobalion; Cobaltamin S; Cobazyme; Cobazymase; Coenzile; Dolonevran; Enzicoba; Hétraclène; Hi-Fresmin; Hycobal; Indusil; Ripresil; Sabalamin; Xobaline. $C_{72}H_{100}CoN_{18}O_{17}P$; mol wt 1579.58. C 54.75%, H 6.38%, Co 3.73%, N 15.96%, O 17.22%, P 1.96%. The coenzyme is the metabolically active form of vitamin B₁₂: Barker *et al.*, *Proc. Nat. Acad. Sci. USA* **44**, 1093 (1958); Weissbach, Taylor, *Vitam. Horm. (New York)* **26**, 395 (1968). Isolin from a culture of *Propionibacterium shermanii*: Barker *et al.*, *J. Biol. Chem.* **235**, 181, 480 (1960); *Biochem. Prepn.* **10**, 27 (1964). Prepn of aquocobalamin and 2',3'-*O*-isopropylidene-5'-*O*-*p*-tolylsulfonyladenosine: Hogenkamp, Pailles, *ibid.* **12**, 124 (1968); from treatment of a cobalamin-thiol complex: Murakami *et al.*, US 3461114 (1969 to Yamanouchi). The coenzyme differs from Vitamin B₁₂ by the presence of a 5'-deoxyadenosyl group in the axial ligand occupied by the cyanide in the vitamin. Structure: Lenhart, Hodgkin, *Nature* **192**, 937 (1961). The nucleoside is linked to the cobalt via the 5'-carbon atom of its deoxyribose moiety and the biological and chemical reactivity reside in this C to Co bond: Hogenkamp *et al.*, *J. Biol. Chem.* **240**, 3641 (1965) and *Fed. Proc.* **25**, 1623 (1966). Review: Smith, *Vitamin B₁₂* (Methuen & Co., London, 3rd ed., 1965).



Yellow-orange six-faced crystals which become deep red upon exposure to air. Absorption max (H_2O): 260, 375, 522 nm ($A \times 10^{-6}$ 34.7, 10.9, 8.0 $cm^2/mole$). Soly in water (24°): 16.4 mmol. Solns of pH <3.5 are yellow, >3.5, red. Sol in ethanol, phenol. Practically insol in acetone, ether, dichloroethylene, dioxane. pKa 3.5. Stability studies: Collado, Nieto, *Ann. Pharm. Fr.* **27**, 427 (1969). Highly sensitive to light, to cyanide and moderately sensitive to acid. Solns are most stable at pH 6-7 stored in the dark. Heating of acid or alkaline solns produces slow inactivation.

THERAP CAT: Vitamin (hematopoietic).

THERAP CAT (VET): Vitamin (hematopoietic).