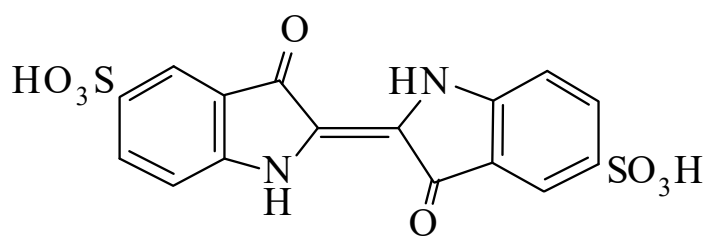




>>Entry Name: Indigo-5,5'-disulfonic acid

ENTRY UNDER REVIEW

Synonym(s): 2-(1,3-Dihydro-3-oxo-5-sulfo-2*H*-indol-2-ylidene)-2,3-dihydro-3-oxo-1*H*-indole-5-sulfonic acid, 9Cl. 3,3'-Dioxo[$\Delta^{2,2'}$ -biindoline]-5,5'-disulfonate, 8Cl. Indigotindisulfonic acid



CAS Registry Number: 483-20-5

Molecular Formula: C₁₆H₁₀N₂O₈S₂

Molecular Weight: 422.396

Accurate Mass: 421.987858

Percentage Composition: C 45.50%; H 2.39%; N 6.63%; O 30.30%; S 15.18%

Source/Synthesis: Obt. by sulfonating indigo with conc. or sl. fuming H₂SO₄ (Barth, 1740)

Physical Description: Cryst.

Solubility: Sol. H₂O

>>Derivative: Di-Na salt

Synonym(s): Indigotin disulfonate sodium, USAN. C.I. Acid blue 74. C.I. Food blue 1. C.I. Pigment blue 63. C.I. 73015. Indigo carmine. Soluble indigo blue. Amacid brilliant blue. Carmine blue. **Indigotin**‡. FD and C Blue No. 2. E132

CAS Registry Number: 860-22-0

Use/Importance: Dye used in cytoscopy as diagnostic aid, in indicators and cosmetics. Used as 0.2% aq. soln. as indicator in titrimetric detn. of Cr(II), Sn(II), Fe(III), Ti(III); used for photometric detn. of O₂ ($\lambda_{\max}$ 620 nm), Cl₂, NO₃⁽⁻⁾, MnO₄⁽⁻⁾; indirect photometric detn. of O₃ ($\lambda_{\max}$ 610 nm, ϵ 22000). Biological stain

Physical Description: Dark blue solid

Solubility: Sol. H₂O; sl. sol. EtOH; insol. C₆H₆, CHCl₃

Other Data: Sensitive to light and oxidizing agents

Hazard & Toxicity: LD₅₀ (rat, orl) 2000 mg/kg

Aldrich: 20669-5

Fluka: 57000

Sigma: I2387

>>Derivative: Al salt

Synonym(s): C.I. Pigment Blue 63

CAS Registry Number: 16521-38-3

Extra CAS Registry Numbers(s): 12227-85-9 39290-72-7 53026-58-7

References:

- Aldrich Library of FT-IR Spectra*, 1st edn., 1985, **2**, 1040C, (*ir*)
Heymann, B., *Ber.*, 1891, **24**, 1476; 3066, (*synth*)
Vorländer, D. *et al.*, *Ber.*, 1901, **34**, 1860, (*struct*)
Holness, H. *et al.*, *Analyst (London)*, 1942, **67**, 221, (*detn*, Ti)
Welcher, F.J., *Organic Analytical Reagents*, van Nostrand, N.Y., 1947, **4**, 505, (*detn*, Cl₂, NO₃⁽⁻⁾, MnO₄⁽⁻⁾)
Loomis, W.F., *Anal. Chem.*, 1956, **28**, 1347, (*detn*, O₂)
Tandon, J.P. *et al.*, *Fresenius' Z. Anal. Chem.*, 1962, **187**, 410, (*detn*, Cr)
Henze, G. *et al.*, *Fresenius' Z. Anal. Chem.*, 1964, **200**, 434, (*detn*, Sn)
Hooson, J. *et al.*, *Food Cosmet. Toxicol.*, 1975, **13**, 177, (*tox*)
Bergshoeff, G. *et al.*, *Analyst (London)*, 1984, **109**, 1165, (*detn*, O₂)
Encyclopedia of Food and Color Additives, (ed. Burdock, G.A.), CRC Press, 1997, 1065-1067; 1069-1070, (*Al salt*)
Sigma-Aldrich Library of Stains, Dyes and Indicators, 405
Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, FAE100