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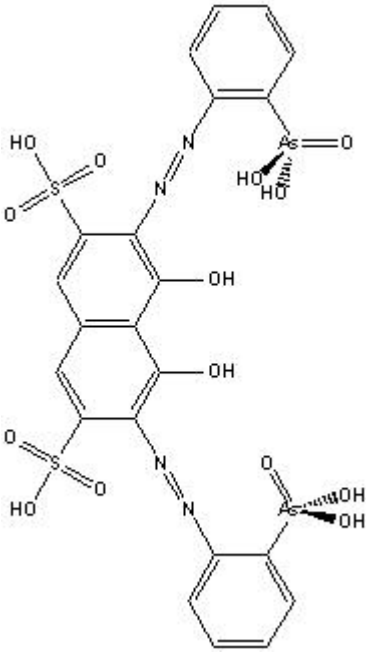
TECHNICAL INFORMATION

Catalog Number: 195059
Arsenazo-III

Structure: free acid



Molecular Formula: $C_{22}H_{18}As_2N_4O_{14}S_2$

Molecular Weight: 776.37

CAS # : 1668-00-4

Synonyms: 2,7-Bis(2-arsonohyenylazo)-1, 8-dihydroxy-3, 6-naphthalene disulfonic acid; 2,2'-[1, 8-dihydroxy-3,6-disulfo-2, 7-naphthalene-bis(azo)dibenzenearsonic acid

Physical Appearance: Brown to black purple powder

Description: Suitable for determination of micromolar amounts of calcium, thorium, uranium, zirconium, cadmium, and zinc.[1-3]

Arsenazo III is an acid disazo dye that is made by the (3,6) coupling of two moles of diazotized o-arsanilic acid to one mole of chromotropic acid (4,5-dihydroxynaphthalene-2,7-disulfonic acid).

Bauer[4] describes Arsenazo III as a metallochromic indicator that is a useful tool for assaying micromolar calcium concentrations in biological systems for the reasons that follow:

"(a)A high and specific calcium affinity in the neutral pH range
(b) a maximal spectral sensitivity for calcium around 652 nm where most biological pigments do not absorb.
(c) a large difference between the extinction coefficients of the calcium-bound and the calcium-free forms of Arsenazo III (differential extinction coefficient of about 2.8 x 10^4 L $mole^{-1}$ cm^{-1} at I_{max} 652 nm and pH 7.5)
(d) a high chemical stability."

Solubility: Soluble in alkaline solution (clear, blue-purple solution); soluble in alcohol; slightly soluble in water.

References:

– Mikhailova, V., Ilkova, P., *Anal. Chim. Acta.*, **v. 53**, 194 (1971).
– Mikhailova, V., Yurukova, L., *Anal. Chim. Acta.*, **v. 68**, 73 (1974).
– Kiriyama, T., Kuroda, R., *Anal. Chim. Acta.*, **v. 71**, 375 (1974).
– Bauer, P.J., *Anal. Biochem.*, **v. 110**, 61-72 (1981).