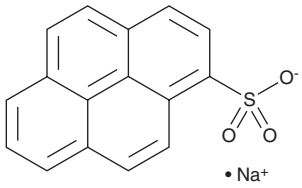
PRODUCT INFORMATION

1-Pyrenesulfonic Acid (sodium salt)

Item No. 27983

CAS Registry No.: 59323-54-5
MF: $C_{16}H_9O_3S \bullet Na$
FW: 304.3
Purity: ≥90%
UV/Vis.: λ_{max}: 233, 243, 245, 266, 277, 316, 329, 375 nm
Abs./Em. Max: 346/376 nm
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

1-Pyrenesulfonic acid (sodium salt) is supplied as a solid. A stock solution may be made by dissolving the 1-pyrenesulfonic acid (sodium salt) in the solvent of choice. 1-Pyrenesulfonic acid (sodium salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of 1-pyrenesulfonic acid (sodium salt) in ethanol is approximately 1 mg/ml and approximately 10 mg/ml in DMSO and DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of 1-pyrenesulfonic acid (sodium salt) can be prepared by directly dissolving the solid in aqueous buffers. 1-Pyrenesulfonic acid (sodium salt) is slightly soluble in PBS, pH 7.2. We do not recommend storing the aqueous solution for more than one day.

Description

1-Pyrenesulfonic acid is a fluorescent probe.[1,2] It displays absorption/emission maxima of 346/376 nm, respectively.[3] 1-Pyrenesulfonic acid fluorescence can be quenched by ferric ions and the nitroaromatic compounds and explosive components 2,4-dinitrotoluene (2,4-DNT) and trinitrotoluene (TNT) in aqueous solutions.[1,2] It has been used in study of reverse micelles, including intermicellar migration of reactants and in the estimation of the number of micelles per cluster.[4] 1-Pyrenesulfonic acid has also been used as a surfactant and dopant in the synthesis of polypyrrole micro- and nanowires.[5]

References

1. Jian, N., Lin, K., Guo, B., *et al*. A reusable fluorescent sensor from electrosynthesized water-soluble oligo(1-pyrenesulfonic acid) for effective detection of Fe^{3+}. *New J. Chem.* **42(24),** 19450-19457 (2018).
2. Kovalev, I.S., Taniya, O.S., Slovesnova, N.V., *et al*. Fluorescent detection of 2,4-DNT and 2,4,6-TNT in aqueous media by using simple water-soluble pyrene derivatives. *Chem. Asian J.* **11(5),** 775-781 (2016).
3. Patsenker, L.D., Yermolenko, I.G., Fedyunyaeva, I.A., *et al.* Luminescent compounds. *SETA BioMedicals, LLC.* **US 2015/0268246 Al** (2015).
4. Gehlen, M.H., De Schryver, F.C., Bhaskar Dutt, G., *et al*. Intermicellar mobility of probe and quencher in reverse micelles studied by fluorescence quenching. *J. Phys. Chem.* **99(39)**, 14407-14413 (1995).
5. Lu, G., Li, C., and Shi, G. Polypyrrole micro- and nanowires synthesized by electrochemical polymerization of pyrrole in the aqueous solutions of pyrenesulfonic acid. *Polymer* **47(6)**, 1778-1784 (2006).

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