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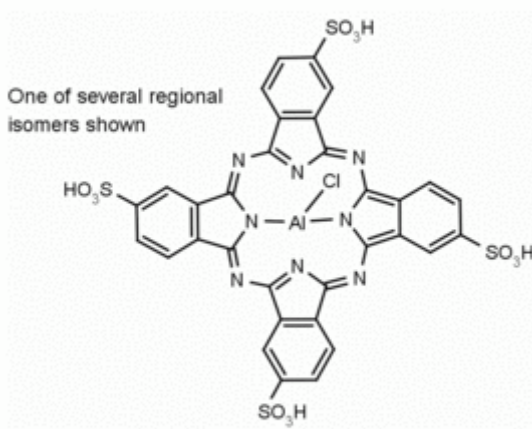
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Technical Data Sheet
Catalog Number: **AIPcS-834**

For research use only
Not intended or approved for
diagnostic or therapeutic use.

Product Name: Al(III) Phthalocyanine Chloride Tetrasulfonic Acid

Catalog Number: AIPcS-834



Sizes Available: 250 mg, 500 mg, 1 g and larger sizes available

Molecular weight: 95.21 g/mol

Molecular Formula: $C_{32}H_{16}AlClN_8O_{12}S_4$

CAS Number: 100180-30-1

Storage: Store at room temperature, protected from light

Synonyms: AL(III) PHTHALOCYANINE CHLORIDE TETRASULFONIC ACID
100180-30-1

Fields of Interest: Photodynamic Therapy, Nanocomposites, Quantum Oxygen Yield, Catalysis, Photocatalysis

1. Wang D, Huang J, Li X, Yang P, Du Y, et al. 2015. [Photocatalytic H₂ production under visible-light irradiation based on covalent attachment of manganese phthalocyanine to graphene](#). *J. Mater. Chem. A* 3:4195-202
2. Villemain D, Hammadi M, Hachemi M, Bar N. 2001. [Applications of microwave in organic synthesis: an improved one-step synthesis of metallophthalocyanines and a new modified microwave oven for dry reactions](#). *Molecules* 6:831-44
3. Tarasevich MR, Zhutaeva GV, Bogdanovskaya VA, Radina MV, Ehrenburg MR, Chalykh AE. 2007. [Oxygen kinetics and mechanism at electrocatalysts on the base of palladium-iron system](#). *Electrochim. Acta* 52:5108-18
4. Spiller W, Kliesch H, Wohrle D, Hackbarth S, Roder B, Schnurpfeil G. 1998. [Singlet oxygen quantum yields of different photosensitizers in polar solvents and micellar solutions](#). *J. Porphyrins Phthalocyanines* 2:145-58
5. Sommerauer M, Rager C, Hanack M. 1996. [Separation of 2\(3\),9\(10\),16\(17\),23\(24\)-Tetrasubstituted Phthalocyanines with Newly Developed HPLC Phases](#). *J. Am. Chem. Soc.* 118:10085-93
6. Shaabani A, Farhangi E, Rahmati A. 2008. [Aerobic oxidation of alkyl arenes and alcohols using cobalt\(II\) phthalocyanine as a catalyst in 1-butyl-3-methylimidazolium bromide](#). *Appl. Catal., A* 338:14-9
7. Ribeiro AO, Tome JPC, Neves MGPM, Tome AC, Cavaleiro JAS, et al. 2006. [\[1,2,3,4-Tetrakis\(\$\alpha/\beta\$ -D-galactopyranos-6-yl\)phthalocyaninato\]zinc\(II\): a water-soluble phthalocyanine](#). *Tetrahedron Lett.* 47:9177-80
8. Plaetzer K, Kiesslich T, Krammer B, Hammerl P. 2002. [Characterization of the cell death modes and the associated changes in cellular energy supply in response to ALPcS4-PDT](#). *Photochem. Photobiol. Sci.* 1:172-7
9. Parton RF, Vankelecom IFJ, Tas D, Janssen KBM, Knops-Gerrits P-P, Jacobs PA. 1996. [Membrane occluded catalysts: a higher order mimic with improved performance](#). *J. Mol. Catal. A: Chem.* 113:283-92
10. Paradine SM, White MC. 2012. [Iron-Catalyzed Intramolecular Allylic C-H Amination](#). *J. Am. Chem. Soc.* 134:2036-9
11. Luo G-F, Chen W-H, Lei Q, Qiu W-X, Liu Y-X, et al. 2016. [A Triple-Collaborative Strategy for High-Performance Tumor Therapy by Multifunctional Mesoporous Silica-Coated Gold Nanorods](#). *Adv. Funct. Mater.* 26:4339-50
12. Liang X, Chen Z, Wu H, Guo L, He C, et al. 2014. [Enhanced NH₃-sensing behavior of 2,9,16,23-tetrakis\(2,2,3,3-tetrafluoropropoxy\) metal\(II\) phthalocyanine/multi-walled carbon nanotube hybrids: An investigation of the effects of central metals](#). *Carbon* 80:268-78
13. Iliev V, Mihaylova A, Bilyarska L. 2002. [Photooxidation of phenols in aqueous solution, catalyzed by mononuclear and polynuclear metal phthalocyanine complexes](#). *J. Mol. Catal. A: Chem.* 184:121-30
14. Hassan SSM, Mahmoud WH, Elmosallamy MAF, Almarzooqi MH. 2005. [Iron\(II\)-phthalocyanine as a novel recognition sensor for selective potentiometric determination of diclofenac and warfarin drugs](#). *J. Pharm. Biomed. Anal.* 39:315-

15. Durmus M, Nyokong T. 2007. [Synthesis, photophysical and photochemical properties of aryloxy tetra-substituted gallium and indium phthalocyanine derivatives](#). *Tetrahedron* 63:1385-94
16. Drechsler U, Pfaff M, Hanack M. 1999. [Synthesis of novel functionalised zinc phthalocyanines applicable in photodynamic therapy](#). *Eur. J. Org. Chem.*:3441-53
17. Dhami S, Cosa JJ, Bishop SM, Phillips D. 1996. [Photophysical Characterization of Sulfonated Aluminum Phthalocyanines in a Cationic Reversed Micellar System](#). *Langmuir* 12:293-300
18. Cissell JA, Vaid TP, Rheingold AL. 2006. [Aluminum Tetraphenylporphyrin and Aluminum Phthalocyanine Neutral Radicals](#). *Inorg. Chem.* 45:2367-9
19. Cho SW, Piper LFJ, De Masi A, Preston ARH, Smith KE, et al. 2010. [Electronic Structure of C60/Phthalocyanine/ITO Interfaces Studied using Soft X-ray Spectroscopies](#). *J. Phys. Chem. C* 114:1928-33
20. Cheng H, Zhu J-Y, Li S-Y, Zeng J-Y, Lei Q, et al. 2016. [An O2 Self-Sufficient Biomimetic Nanoplatform for Highly Specific and Efficient Photodynamic Therapy](#). *Adv. Funct. Mater.* 26:7847-60
21. Chen H, Xiao L, Anraku Y, Mi P, Liu X, et al. 2014. [Polyion Complex Vesicles for Photoinduced Intracellular Delivery of Amphiphilic Photosensitizer](#). *J. Am. Chem. Soc.* 136:157-63
22. Chauke V, Ogunsipe A, Durmus M, Nyokong T. 2007. [Novel gallium\(III\) phthalocyanine derivatives - Synthesis, photophysics and photochemistry](#). *Polyhedron* 26:2663-71
23. Brunel M, Chaput F, Vinogradov SA, Campagne B, Canva M, et al. 1997. [Reverse saturable absorption in palladium and zinc tetraphenyltetraabenzoporphyrin doped xerogels](#). *Chem. Phys.* 218:301-7
24. Berlanda J, Kiesslich T, Engelhardt V, Krammer B, Plaetzer K. 2010. [Comparative in vitro study on the characteristics of different photosensitizers employed in PDT](#). *J. Photochem. Photobiol., B* 100:173-80
25. Baker R, Wilkinson DP, Zhang J. 2008. [Electrocatalytic activity and stability of substituted iron phthalocyanines towards oxygen reduction evaluated at different temperatures](#). *Electrochim. Acta* 53:6906-19

Hazardous Properties and Cautions: The toxicological and pharmacological properties of this compound are not fully known. For further information see the SDS on request. **Al(III) Phthalocyanine Chloride Tetrasulfonic Acid** is manufactured, shipped according to standard practices, and intended for research and development in a laboratory utilizing prudent procedures for handling chemicals of unknown toxicity, under the supervision of persons technically qualified to evaluate potential risks and authorized to enforce appropriate health and safety measures. As with all research chemicals, precautions should be taken to avoid unnecessary exposures or risks.

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