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Frontier Specialty Chemicals, Inc. **Technical Data Sheet**
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Catalog Number: **T614**

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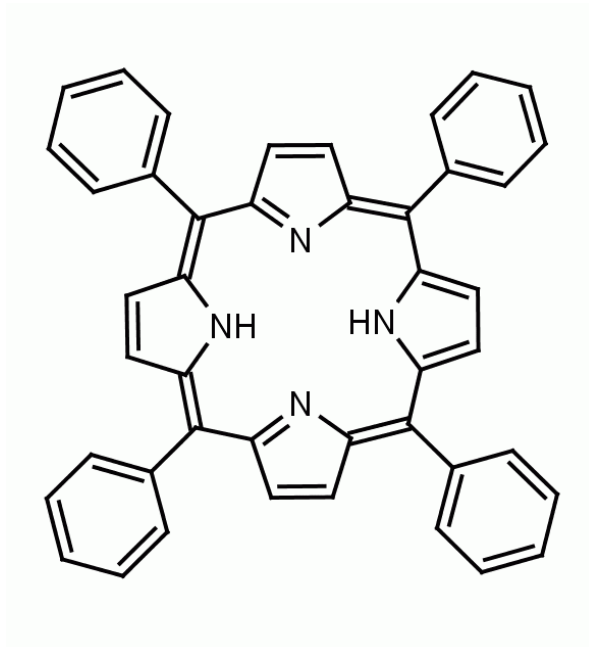
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For research use only

Not intended or approved for
diagnostic or therapeutic use.

Product Name: meso-Tetraphenylporphine (1-3% chlorin)

Catalog Number: T614



Size: 5g, 25 g, 50g, 500g, kilogram and multi-kilogram quantities available

Molecular Formula: C₄₄H₃₀N₄ **MW:** 617.74 **CAS:** 917-23-7

Storage: Store at room temperature, protect from light

Synonyms: 5,10,15,20-Tetraphenyl-21H,23H-porphyrin, 5,10,15,20-Tetraphenyl-21H,23H-porphine, 5,10,15,20-Tetraphenylporphine, Porphine, TPP, H2TPP, [CHEMBL345046](https://pubchem.ncbi.nlm.nih.gov/compound/5,10,15,20-Tetraphenylporphine)

Solubility: CHCl₃, CH₂Cl₂, toluene

Purity: 97%

Field of Interest: Organic Synthesis, Photocatalysis, Photodynamic Therapy

Background: meso-Tetraphenylporphine is a synthetic heterocyclic compound resembling natural porphyrins synthesized by the Rothmund, Adler and Longo or the Lindsay methods, where the compound is produced in various yields based on ring system oxidation.¹⁻³ Tetraphenylporphine and their metal complexes are used as photocatalysts⁴, photodynamic agents⁵, and as sensors for volatile organic compounds.⁶

References: **1)** Badger, G. M.; Jones, R. Alan; Laslett, R. L., Porphyrins. VII. The synthesis of porphyrins by the Rothmund reaction, *Australian Journal of Chemistry* (1964), 17(9), 1028-35. **2)** Adler, Alan D.; Longo, Frederick R.; Finarelli, John D.; Goldmacher, Joel; Assour, Jacques; Korsakoff, Leonard, A simplified synthesis for meso-Tetraphenylporphine, *Journal of Organic Chemistry* (1967), 32(2), 476. **3)** Lindsey, Jonathan S. (2000). "Synthesis of meso-substituted porphyrins". In Kadish, Karl M.; Smith, Kevin M.; Guillard, Roger (eds.). *Porphyrin Handbook*. **1**. pp. 45–118. [ISBN 0-12-393200-9](#). **4)** Zhou XT, Ji HB, Huang XJ. Photocatalytic degradation of methyl orange over metalloporphyrins supported on TiO₂ Degussa P25. *Molecules*. 2012 Jan 25;17(2):1149-58. doi: 10.3390/molecules17021149. PMID: 22277995; PMCID: PMC6268023. **5)** Granet R, Faure R, Ndong Ntoutoume GM, Mbakidi JP, Leger DY, Liagre B, Sol V. Enhanced cytotoxicity of gold porphyrin complexes after inclusion in cyclodextrin scaffolds adsorbed on polyethyleneimine-coated gold nanoparticles. *Bioorg Med Chem Lett*. 2019 May 1;29(9):1065-1068. doi: 10.1016/j.bmcl.2019.03.003. Epub 2019 Mar 4. PMID: 30852085. **6)** Kladsomboon S, Thippakorn C, Seesaard T. Development of Organic-Inorganic Hybrid Optical Gas Sensors for the Non-Invasive Monitoring of Pathogenic Bacteria. *Sensors (Basel)*. 2018 Sep 21;18(10):3189. doi: 10.3390/s18103189. PMID: 30241405; PMCID: PMC6210542.

1)

Hazardous Properties and Cautions: The toxicological and pharmacological properties of this compound are not fully known. For further information see the SDS on request. **Meso-Tetraphenylporphine** 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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