

**FRONTIER**  
SPECIALTY CHEMICALS  
*Pure and (not so) simple*

Frontier Specialty Chemicals, Inc. **Technical Data Sheet**  
P.O. Box 31  
Logan, UT 84323-0031  
Phone: 1-435-753-1901

Catalog Number: **C974**

[www.frontiersci.com](http://www.frontiersci.com)

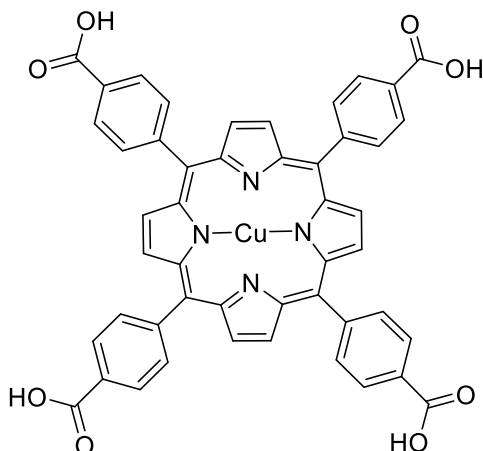
[sales@frontiersci.com](mailto:sales@frontiersci.com)

**For research use only**

Not intended or approved for  
diagnostic or therapeutic use.

## Product Name: **Cu(II) meso-Tetra(4-carboxyphenyl)porphine**

Catalog Number: **C974**



**Sizes Available:** 1 g, 5 g, and larger sizes available

**Molecular weight:** 852.3 g/mol

**Molecular Formula:** C<sub>48</sub>H<sub>28</sub>CuN<sub>4</sub>O<sub>8</sub>

**CAS Number:** 41699-93-8

**Storage:** Store at room temperature and protect from light.

### **Synonyms:**

Cu(II) meso-tetra(4-carboxyphenyl)porphine, 41699-93-8, copper;4-[10,15,20-tris(4-carboxyphenyl)porphyrin-22,24-diid-5-yl]benzoic acid,

CS-0111148, Cu(II) Meso-Tetra(4-carboxyphenyl)porphyrine

**Field of Interest:** Metal-Organic-Frameworks MOF's, Water Oxidation Catalysts, Photocatalysis, Sensors, Catalysis.

**Background: Cu(II) meso-Tetra(4-carboxyphenyl)porphine** is a synthetic porphyrin that is useful as a photocatalyst for water oxidation and photocatalytic degradation<sup>1-6</sup>. Cu(II) meso-Tetra(4-carboxyphenyl)porphine was used to modify the surface of a glassy carbon electrode for the simultaneous voltametric determination of acetaminophen and dopamine<sup>7</sup>.

#### References:

- 1) Nakashima, S., Negishi, R., Tada, H.; Visible-light-induced water oxidation by a hybrid photocatalyst consisting of bismuth vanadate and copper(II) meso-tetra(4-carboxyphenyl)porphyrin. *Chem. Commun.*, **2016**, 52, 3665-3668. <https://doi.org/10.1039/C5CC10014C>
- 2) Wei, M., Wan, J., Hu, Z., Peng, Z., Wang, B.; Enhanced photocatalytic degradation activity over TiO<sub>2</sub> nanotubes co-sensitized by reduced graphene oxide and copper(II) meso-tetra(4-carboxyphenyl)porphyrin. *Applied Surface Science* **2016**, 377, 149-158. <https://doi.org/10.1016/j.apsusc.2016.03.120>
- 3) Nicholls, D., McKinzie, W.P., Oncel, N.; 5-(Octadecyloxy) Isophthalic Acid-Assisted Copper(II) meso-Tetra (4-carboxyphenyl) Porphyrin Adsorption on Highly Ordered Pyrolytic Graphite. *J. Phys. Chem. C* **2010**, 114, 35, 14983-14985. <https://doi.org/10.1021/jp104491t>
- 4) Wei, M., Wan, J., Hu, Z., Peng, Z., Wang, B.; Photoinduced interfacial charge transfer and photocatalytic behavior of TiO<sub>2</sub> nanotubes sensitized by copper (II) meso-tetra (4-carboxyphenyl)porphyrin. *J Mater Sci: Mater Electron* **2016**, 27, 4026-4034. <https://doi.org/10.1007/s10854-015-4257-8>
- 5) Wang, H., Zhou, D., Shen, S., Wan, J., Zheng, X., Yu, L., Phillips, D.L.; The photocatalytic activity and degradation mechanism of methylene blue over copper(II) tetra(4-carboxyphenyl) porphyrin sensitized TiO<sub>2</sub> under visible light irradiation. *RSC Adv.*, **2014**, 4, 28978-28986. <https://doi.org/10.1039/C4RAJ3979C>
- 6) Afzal, S., Daoud, W.A., Langford, S.J.; Photostable Self-Cleaning Cotton by a Copper(II) Porphyrin/TiO<sub>2</sub> Visible-Light Photocatalytic System. *ACS Appl. Mater. Interfaces* **2013**, 5, 11, 4753-4759. <https://doi.org/10.1021/am400002K>
- 7) Song, X., Fu, J., Wang, J., Li, C., Liu, Z.; Simultaneous voltammetric determination of acetaminophen and dopamine using a glassy carbon electrode modified with copper porphyrin-exfoliated graphene. *Microchimica Acta* **2018**, 185, 369. <https://doi.org/10.1007/s00604-018-2891-6>

**Hazardous Properties and Cautions:** The toxicological and pharmacological properties of this compound are not fully known. For further information see the SDS on request. **Cu(II) meso-Tetra(4-carboxyphenyl)porphine** 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.

**Warranty and Disclaimer:** Frontier Specialty Chemicals, Inc. warrants the product conforms to the specifications stated herein. In the event of nonconformity, Frontier will replace products or refund purchase price, at its sole option, and Frontier shall not be responsible for any other loss or damage, whether known or foreseeable to Frontier. No other warranties apply, express or implied, including but not limited to warranty of fitness for any purpose or implied warranty of merchantability. Purchaser is solely responsible for all consequences of its use of the product and Frontier assumes no responsibility therefore, including success of purchaser's research and development, or health or safety of any uses of the product.