

**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: **MnP562-9**

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

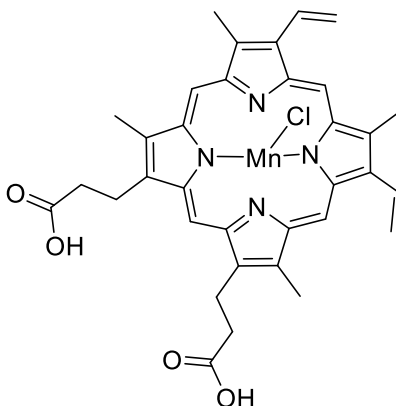
[sales@frontiersci.com](mailto:sales@frontiersci.com)

**For research use only**

Not intended or approved for  
diagnostic or therapeutic use.

## Product Name: Mn(III) Protoporphyrin IX chloride

Catalog Number: **MnP562-9**



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

**Molecular weight:** 651.03 g/mol

**Molecular Formula:** C<sub>32</sub>H<sub>32</sub>ClMnN<sub>4</sub>O<sub>4</sub>

**CAS Number:** 120389-54-0

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

**Synonyms:** Mn(III) Protoporphyrin IX Chloride

8,13-Bis(Vinyl)-3,7,12,17-Tetramethyl-21h,23h-Porphine-2,18-Dipropionic Acid  
Manganese(III) Chloride

**Field of Interest:** Heme Oxygenase, Catalysis, MRI, Relaxation Enhancement  
Agents, Supercapacitors

**Background: Mn(III) Protoporphyrin IX chloride** is a metalated derivative of protoporphyrin IX which has been used as an experimental relaxation enhancement agent for MRI<sup>1-3</sup>. Prostaglandin endoperoxide synthase was reconstituted with Mn(III) protoporphyrin IX and found to have full cyclooxygenase activity<sup>4</sup>. Manganese protoporphyrin IX reconstituted myoglobin acts as an epoxidation catalyst with oxone<sup>5</sup>. Electropolymerized manganese protoporphyrin IX was used to produce a polyporphyrin film for use in supercapacitors<sup>6</sup>.

## References:

- 1) Spaltro, S.M., Foster, N.; Synthesis and characterization of conjugates of poly( $\alpha$ -amino acids) and Manganese (III) protoporphyrin IX as relaxation enhancement agents for MRI. *Journal of Applied Polymer Science* **1990**, *41*, 1235-1249. <https://doi.org/10.1002/app.1990.070410532>
- 2) Qazi, S., Uchida, M., Usselman, R., Shearer, R., Edwards, E., Douglas, T.; Manganese(III) porphyrins complexed with P22 virus-like particles as T1-enhanced contrast agents for magnetic resonance imaging. *Journal of Biological Inorganic Chemistry* **2014**, *19*, 237-246. <https://doi.org/10.1007/s00775-013-1075-4>
- 3) Lelyveld, V.S., Brustad, E., Arnold, F.H., Jasanoff, A.; Metal-Substituted Protein MRI Contrast Agents Engineered for Enhanced Relaxivity and Ligand Sensitivity. *J. Am. Chem. Soc.* **2011**, *133*, 4, 649-651. <https://doi.org/10.1021/ja107936d>
- 4) Strieder, S., Schaible, K., Scherer, H.J., Dietz, R., Ruf, H.H.; Prostaglandin endoperoxide synthase substituted with manganese protoporphyrin IX. Formation of a higher oxidation state and its relation to cyclooxygenase reaction. *Journal of Biological Chemistry* **1992**, *257*, 13879-13878. [https://doi.org/10.1016/S0021-9258\(19\)49649-X](https://doi.org/10.1016/S0021-9258(19)49649-X)
- 5) Cai, Y., Yao, Si., Hu, M., Liu, X., Zhang, J.; Manganese protoporphyrin IX reconstituted myoglobin capable of epoxidation of the C=C bond with Oxone. *Inorg. Chem. Front.*, **2016**, *3*, 1236-1244. <https://doi.org/10.1039/C6QI00120C>
- 6) Zhang, C., Xu, Y., Sasaki, S., Wang, X.; Supercapacitor electrodes based on electropolymerized protoporphyrins. *Materials Today Energy* *21*, **2021**, 100830. <https://doi.org/10.1016/j.mtener.2021.100830>

**Hazardous Properties and Cautions:** The toxicological and pharmacological properties of this compound are not fully known. For further information see the SDS on request. **Mn(III) Protoporphyrin IX chloride** 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.