

Technical Data Sheet

5,10,15,20-tetra(4-carboxyphenyl) porphyrin

Properties

Catalog No	: OM-PRF-004
CAS	: 14609-54-2
Purity	: 98% min
Molecular Formula	: C ₄₈ H ₃₀ N ₄ O ₈
Molecular Weight (g/mol)	: 790,79
Appearance	: purple crystals or powder
Physical State @20 °C	: solid
Stability	: stable at room temperature
Solubility	: alcohol-soluble

Description

Porphyrins are a group of heterocyclic macrocycle organic compounds, composed of four modified pyrrole subunits interconnected at their α -carbon atoms via methine bridges (=CH-). With a total of 26 π -electrons, of which 18 π -electrons form a planar, continuous cycle, the porphyrin ring structure is often described as aromatic. One result of the large conjugated system is that porphyrins typically absorb strongly in the visible region of the electromagnetic spectrum, i.e. they are deeply colored. Typically, the absorption spectrum shows the strongest absorption around 400–450 nm (Soret band) and a series of absorption bands between 500 and 700 nm (Q-bands) with gradually reduced intensity. The name "porphyrin" derives from the Greek word πορφύρα (porphyra), meaning *purple*.

Porphyrins and metalized porphyrin derivatives, such as cytochrome, heme, and chlorophyll, exist in nature and play significant roles in organisms. Chlorophylls play pivotal roles in photosynthesis as both light harvesting antennae and charge separation reaction systems. Hemes are one of the key components for biocatalysts and oxygen carriers in the blood. Apart from naturally existing porphyrins, synthetic counterparts have been used in various applications due to their characteristics and versatile functions.

Application Areas

Photodynamic therapy (PDT) agent for cancer treatment, catalyst for water splitting in hydrogen production, catalyst for transformation of carbon dioxide to methanol, catalyst for dye degradation in wastewater treatment, active materials in sensors, active materials in photovoltaics, and active materials in molecular electronics etc.

Availability	: 100mg, 500mg, 1g sizes are in stock. 10g size is available within 2 weeks upon request. Co(II), Cu(II), Fe(III), Mn(III), Ni(II), and Zn(II) derivatives are available upon request. Please contact us.
Shipping	: ready to ship in 5 business days
Storage conditions	: at room temperature
Packaging	: 100mg, 500mg, 1g, 10g

Quality Control

Proton NMR Spectrum in DMSO-d₆ :

