



168 Tressler Street  
Pleasant Gap, PA 16823  
Tel: 800-342-3595 / 814-359-5060  
Fax: 814-359-5062  
Email: customerservice@matreya.com  
Web: www.matreya.com

## PRODUCT DATA SHEET

### Sphingomyelin (egg, chicken)

**Catalog number:** 1332, 1332-1

**Synonyms:** Ceramide-1-phosphorylcholine

**Source:** Natural, chicken egg

**Solubility:** Chloroform, Methanol,  
Warm Ethanol

**CAS number:** 85187-10-6

**Molecular Formula:** C<sub>39</sub>H<sub>79</sub>N<sub>2</sub>O<sub>6</sub>P

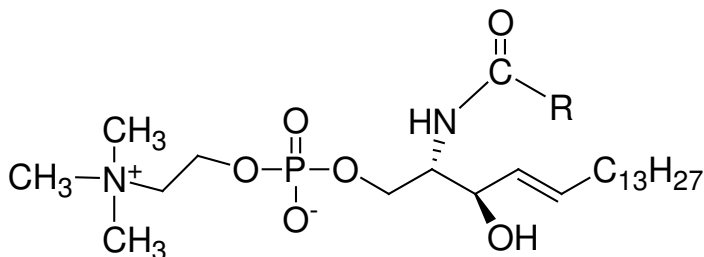
**Molecular Weight:** 703 (palmitoyl)

**Storage:** -20°C

**Purity:** TLC > 98%

**TLC System:** Chloroform/Methanol/Water  
(60:30:4 by vol.)

**Appearance:** Solid



### **Application Notes:**

Sphingomyelin is found in mammalian cell membranes, especially in the membranes of the myelin sheath. It is the most abundant sphingolipid in mammals and is thought to be found mostly in the exoplasmic leaflet of the membrane although there is also evidence of a sphingomyelin pool in the inner leaflet of the membrane. It is involved in signal transduction and apoptosis.<sup>1</sup> An improper ratio of sphingomyelin to ceramide has been shown to be a factor in Niemann-Pick disease<sup>2</sup> and neonatal respiratory distress syndrome.<sup>3</sup> However, the ratio of sphingomyelin to ceramide is different for different cell types.<sup>4</sup> Sphingomyelin is an important amphiphilic component when plasma lipoprotein pools expand in response to large lipid loads or metabolic abnormalities.<sup>5</sup>

### **Selected References:**

1. R. N. Kolesnick, A. Haimovitz-Friedman, Z. Fuks The sphingomyelin signal transduction pathway mediates apoptosis for tumor necrosis factor, Fas, and ionizing radiation. *Biochem Cell Biol.*, Nov-Dec;72(11-12):471-4. Review. 1994
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3. C. St Clair, E. R. Norwitz, K. Woensdregt, M. Cackovic, J. A. Shaw, H. Malkus, R. A. Ehrenkranz, J. L. Illuzzi. The probability of neonatal respiratory distress syndrome as a function of gestational age and lecithin/sphingomyelin ratio. *Am J Perinatol*, Sep;25(8):473-80, 2008, Epub Sep 4 2008
4. J. P. Kilkus, R. Goswami, S. A. Dawson, F. D. Testai, E. V. Berdyshev, X. Han, G. Dawson. Differential regulation of sphingomyelin synthesis and catabolism in oligodendrocytes and neurons. *J Neurochem*, Aug;106(4):1745-57, 2008. Epub 2008 Jun 28. Erratum in: *J Neurochem*. Dec;107(6):1766, 2008
5. A. Nilsson, R. D. Duan. Absorption and lipoprotein transport of sphingomyelin. *J Lipid Res*. Jan;47(1):154-71, 2006. Epub Oct 26. Review, 2005

All chemicals listed are for investigational research purposes only. They are not intended for human consumption or to be used in food or food additives. None are for general drug or medicinal use on humans. We believe that the information, offered in good faith, is accurate.

DS1332 Rev. #1  
June 11, 2010