

# PRODUCT DATA SHEET

## Methyl octanoate

**Catalog number:** 1199

**Common names:** C8:0 Methyl ester; Methyl caprylate

**Source:** natural, plant

**Solubility:** chloroform, ethanol, ethyl ether

**CAS number:** 111-11-5

**Molecular Formula:** C<sub>9</sub>H<sub>18</sub>O<sub>2</sub>

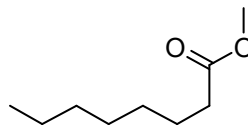
**Molecular Weight:** 158

**Storage:** room temperature

**Purity:** GC: 99%, TLC: 99%

**TLC System:** hexane/ethyl ether (80:20)

**Appearance:** liquid



## Application Notes:

This high purity fatty acid is ideal as a standard and for biological studies. Octanoic acid is a medium-length fatty acid that has important biological functions and properties. In combination with acidic calcium sulfate, octanoic acid has been demonstrated to be effective as an antimicrobial agent in foods<sup>1</sup> and to have repellent properties towards some mites.<sup>2</sup> Octanoic acid is essential for acylation in the biosynthesis of acyl-ghrelin, a growth hormone releasing peptide that stimulates hunger.<sup>3</sup> X-linked adrenoleukodystrophy (X-ALD) is an inherited disorder of peroxisomal metabolism and is characterized by deficient *beta*-oxidation of saturated very long-chain fatty acids (VLCFA) resulting in an accumulation of VLCFA and a subsequent decrease in shorter fatty acids such as octanoic acid. Sphingolipids are normally acylated with long-chain fatty acids and are critical in many biological functions. When acylated with shorter fatty acids these sphingolipids can more easily cross the cell membrane barrier. Octanoic acid is a saturated fatty acid and saturated fatty acids have been found to cause moderate risk of coronary heart disease as compared with polyunsaturated fatty acids and they significantly lower the total cholesterol/high density lipoprotein-cholesterol ratio as compared with carbohydrates.<sup>4</sup>

## Selected References:

1. A. Brandt et al. "Synergistic Inhibition of *Listeria monocytogenes* In Vitro through the Combination of Octanoic Acid and Acidic Calcium Sulfate" *Journal of Food Protection*, vol. 74 pp. 122-125, 2011
2. F. Nazzi et al. "Octanoic acid confers to royal jelly varroa-repellent properties" *Naturwissenschaften*, vol. 96 pp. 309-314, 2009
3. J. Ashitani "Effect of octanoic acid-rich formula on plasma ghrelin levels in cachectic patients with chronic respiratory disease" *Nutrition Journal*, 2009, 8:25 doi:10.1186/1475-2891-8-25
4. R. Micha and D. Mozaffarian "Saturated Fat and Cardiometabolic Risk Factors, Coronary Heart Disease, Stroke, and Diabetes: a Fresh Look at the Evidence" *Lipids*, vol. 45 pp. 893-905, 2010

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