

# PRODUCT DATA SHEET

## 12-Methyltetradecanoic acid

**Catalog number:** 1615

**Common Name:** anteiso-Pentadecanoic acid;  
anteiso C15 Fatty acid

**Source:** synthetic

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

**CAS number:** 5502-94-3

**Molecular Formula:** C<sub>15</sub>H<sub>30</sub>O<sub>2</sub>

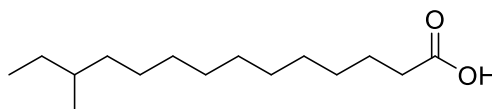
**Molecular Weight:** 242

**Storage:** -20°C

**Purity:** TLC > 98%, GC > 98%

**TLC System:** hexane/ethyl ether/acetic acid,  
(80:20:1 by vol.)

**Appearance:** solid



### Application Notes:

This high purity anteiso-pentadecanoic acid is ideal for use as a standard in the verification of samples<sup>1</sup> and for use in biological studies. anteiso-Pentadecanoic acid is one of the most abundant fatty acids in members of the genus *Bacillus*.<sup>2</sup> Many types of bacteria and marine organisms produce anteiso-fatty acids which can be used for their characterization.<sup>3</sup> Some bacteria have iso- but not anteiso-fatty acids while others have anteiso- but not iso-fatty acids. anteiso-Fatty acids are also found in ruminant animals (from the rumen microorganisms) and in ruminant milk mainly from the food chain but also due to some *de novo* synthesis. Branched chain fatty acids have been found in the gut of newborn animals where they have a role in the microorganism gut colonization.<sup>4</sup> Some bacteria handle stress (such as heat and toxicity) by changing the ratio of anteiso/iso-fatty acids in the cell membrane. Although anteiso-fatty acids are not usually found in plant oils the waxy surface of leaves can contain significant amounts of these fatty acids. Branched chain fatty acids are critical for the regulation of fluidity in membranes and in membrane transport for many types of bacteria due to their having a significantly lower transition temperature than straight chain fatty acids.

### Selected References:

1. N. Jensen and M. Gross "Fast Atom Bombardment and Tandem Mass Spectrometry for Determining Iso- and Anteiso- Fatty Acids" *Lipids*, Vol. 21(5) pp. 362-365, 1986
2. H. Daron "Nutritional Alteration of the Fatty Acid Composition of a Thermophilic *Bacillus* Species" *Journal of Bacteriology*, vol. 116 pp. 1096-1099, 1973
3. E. Kim et al. "Fatty Acid Profiles Associated with Microbial Colonization of Freshly Ingested Grass and Rumen Biohydrogenation" *Journal of Dairy Science*, Vol. 88 pp. 3220-3230, 2005
4. R. Ran-Ressler et al. "Branched Chain Fatty Acids Are Constituents of the Normal Healthy Newborn Gastrointestinal Tract" *Pediatric Research*, Vol. 64(6) pp. 605-609, 2008

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