



>>Entry Name: Glycerol 2-alkanoates

Synonym(s): 2-*O*-Acylglycerols



Source/Synthesis: Synth. by protection of 1,3-positions in glycerol or glycerol synthons, esterification of 2-position, and deprotection. Enzymatic (lipase-catalysed) routes from triacylglycerols have been developed.

Metabolism: Stepwise mammalian metabolism of triacylglycerols at the *sn*-1,3-positions by, successively, lingual, gastric, and pancreatic lipases produces 2-monoacylglycerols. Small amounts of *sn*-1,2 and *sn*-2,3-diacylglycerols are intermediates. Further metabolism of 2-monoacylglycerols to glycerol may proceed via isomerisation to 1(3)-monoacylglycerols, but the relevance of this acyl migration has been questioned. In a wider study of the action of lipases of animal and microbial origin, stereoselective preference was mainly for the *sn*-1 position. The *Candida antarctica* A lipase is one of a small number of lipases that will hydrolyse the *sn*-2 position in triacylglycerols

Other Data: Acyl migration, particularly under the influences of heat, acidic or alkaline conditions, can result in the interconversion of 1(3)-acyl- and 2-acylglycerols

>>Variant: Glycerol 2-octanoate

Synonym(s): 2-Hydroxy-1-(hydroxymethyl)ethyl octanoate. 2-Monooctanoin. β -Monocaprylin. 2-*O*-Octanoylglycerol

CAS Registry Number: 4228-48-2

Extra CAS Registry Numbers(s): 26402-26-6

Molecular Formula: $\text{C}_{11}\text{H}_{22}\text{O}_4$

Molecular Weight: 218.292

Accurate Mass: 218.15181

Percentage Composition: C 60.52%; H 10.16%; O 29.32%

Physical Description: Cryst. (Et_2O /petrol)

Melting Point: Mp 29.8°

>>Variant: Glycerol 2-decanoate

Synonym(s): 2-Hydroxy-1-(hydroxymethyl)ethyl decanoate. 2-Monodecanoin. β -Monocaprin. 2-*O*-Decanoylglycerol

CAS Registry Number: 3376-48-5

Extra CAS Registry Numbers(s): 26402-22-2

Molecular Formula: $\text{C}_{13}\text{H}_{26}\text{O}_4$

Molecular Weight: 246.346

Accurate Mass: 246.18311

Percentage Composition: C 63.38%; H 10.64%; O 25.98%

Melting Point: Mp 40.4°

>>Variant: Glycerol 2-dodecanoate

Synonym(s): 2-Hydroxy-1-(hydroxymethyl)ethyl dodecanoate. 2-*O*-Dodecanoylglycerol. Glycerol 2-laurate. β -Monolaurin

CAS Registry Number: 1678-45-1

Extra CAS Registry Numbers(s): 27215-38-9

Molecular Formula: $\text{C}_{15}\text{H}_{30}\text{O}_4$

Molecular Weight: 274.4

Accurate Mass: 274.21441

Percentage Composition: C 65.66%; H 11.02%; O 23.32%

Use/Importance: Has antimicrobial activity

Melting Point: Mp 51°

>>Variant: Glycerol 2-tetradecanoate

Synonym(s): 2-*O*-Tetradecanoylglycerol. Glycerol 2-myristate. β -Monomyristin

Extra CAS Registry Numbers(s): 27214-38-6

Molecular Formula: $\text{C}_{17}\text{H}_{34}\text{O}_4$

Molecular Weight: 302.453

Accurate Mass: 302.24571

Percentage Composition: C 67.51%; H 11.33%; O 21.16%

Physical Description: Cryst. (petrol)

Melting Point: Mp 60-61°