

PRODUCT INFORMATION



1,2,3-Trilauroyl Glycerol

Item No. 23336

CAS Registry No.: 538-24-9

Formal Name: dodecanoic acid, 1,1',1''-(1,2,3-propanetriyl) ester

Synonyms: Glycerol Tridodecanoate, Glycerol Trilaurate, NSC 4061, TG(12:0/12:0/12:0), Tridodecanoin, Tridodecanoyl Glycerol, Trilaurin

MF: $C_{39}H_{74}O_6$

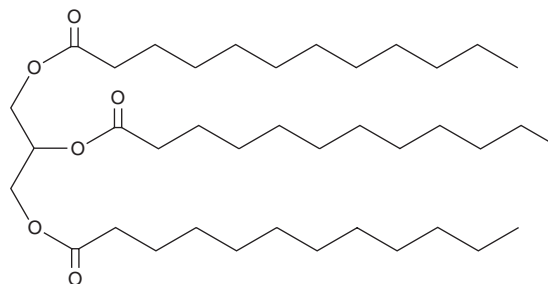
FW: 639.0

Purity: $\geq 95\%$

Supplied as: A crystalline solid

Storage: -20°C

Stability: ≥ 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

1,2,3-Trilauroyl glycerol is supplied as a crystalline solid. A stock solution may be made by dissolving the 1,2,3-trilauroyl glycerol in the solvent of choice. 1,2,3-Trilauroyl glycerol is soluble in organic solvents such as ethanol and dimethyl formamide, which should be purged with an inert gas. The solubility of 1,2,3-trilauroyl glycerol in these solvents is approximately 1 and 20 mg/ml, respectively.

Description

1,2,3-Trilauroyl glycerol is a triacylglycerol that contains lauric acid (Item No. 10006626) at the *sn*-1, *sn*-2, and *sn*-3 positions and is a component of coconut and seed oils.^{1,2} It increases the activity of HMG-CoA reductase in rat intestine and the production of cholesterol in the rat jejunal and ileal epithelium when administered at a dose of 10% (w/w) in the diet.³ A nanoemulsion of 1,2,3-trilauroyl glycerol (0.2%, w/v) is virucidal against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and H1N1 influenza A virus in infected MDCK cells.⁴ 1,2,3-Trilauroyl glycerol has been used in the formation of solid lipid nanoparticles (SLNs) for the delivery of paclitaxel (Item No. 10461) in SKOV3 ovarian cancer cells.⁵ Formulations containing 1,2,3-trilauroyl glycerol have been used in cosmetics as skin conditioners and thickening agents.

References

1. Komaram, A.C., Anjaneyulu, E., Goswami, K., *et al.* Detection and quantification of palmolein and palm kernel oil added as adulterant in coconut oil based on triacylglycerol profile. *J. Food Sci. Technol.* **58**(11), 4420-4428 (2021).
2. Litchfield, C., Miller, E., Harlow, R.D., *et al.* The triglyceride composition of 17 seed fats rich in octanoic, decanoic, or lauric acid. *Lipids* **2**(4), 345-350 (1967).
3. Oku, H., and Sugano, M. Dietary fat dependence of intestinal 3-hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase activity in rats. *J. Nutr.* **115**(7), 880-889 (1985).
4. Weerapol, Y., Manmuan, S., Limmatvapirat, S., *et al.* Enhancing the efficacy of monolaurin against SARS-CoV-2 and influenza A (H1N1) with a nanoemulsion formulation. *OpenNano* **17**, 100207 (2024).
5. Xu, W., Lim, S.-J., and Lee, M.-K. Cellular uptake and antitumour activity of paclitaxel incorporated into trilaurin-based solid lipid nanoparticles in ovarian cancer. *J. Microencapsul.* **30**(8), 755-761 (2013).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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