

Monoglycerides from 9,10-dihydroxystearic acid for the cosmetic industry.

ABSTRACT

Monoglycerides of dihydroxystearic acid (MGDHSA) were synthesized using an acid catalyst. Factors that may affect the esterification reaction such as reaction time and temperature were studied. Esterification of dihydroxystearic acid with excess glycerol by an acid catalyst at 150°C for 4 hr gave up to 40% yield of MGDHSA. The reaction product containing approximately 45% MGDHSA was found to be non-irritant to the skin, non-toxic to the aquatic environment and readily biodegradable. The toxicity value of MGDHSA was found to be more than 100 mg litre⁻¹ while its biodegradability reached the pass level of 60% in 20 days. This compound is compatible with a wide variety of oils. MGDHSA seem to have better emulsifying properties in an oil-in-water (O/W) system with high water content compared to glyceryl monostearate (GMS) and glyceryl monohydroxystearate (MGHSA).

Keyword: Monoglycerides; 9,10-Dihydroxyroxystearic Acid; Cosmetic industry.