

Title: Consolidated insights into polysorbate composition: a LC/(HR)MS application.
Yann Waye Keuong, Aurélie Salzedo, Laurent Gireaud and Gérard Provot
L'Oréal Recherche, Clichy la Garenne, France.

Laurent Bultel and Serge Pilard
Université de Picardie Jules Verne, UMR6219, Plate-Forme Analytique, Amiens, France.

Abstract:

Polysorbates are a class of emulsifiers used in some pharmaceuticals, cosmetic and food preparation. They are often used in cosmetics to solubilize lipophilic ingredients, for instance essential oils into water-based products. Polysorbates are oily liquids derived from PEG-ylated sorbitan (a derivative of sorbitol) esterified with fatty acids.

Even if specifications of polysorbate are well established by suppliers, only limited information are available concerning the chemical composition of all components of polysorbate, i.e. number and distribution of ethylene oxide, as well as of fatty acids, and this independently of the type and grade of polysorbates.

Thanks to High Resolution Mass Spectrometry (HRMS) detection with Flow Injection or hyphenated to High Performance Liquid Chromatography (HPLC), a detailed mapping of Tween 21 components has been established.

Materials and methods will be presented as well as some hypothesis of structures for molecules detected.