

论文

聚氧乙烯蓖麻油EL-40、吐温80于维生素D₂增溶体系中稳定性的研究

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摘要:

胶团状态下聚氧乙烯蓖麻油EL-40(I)与吐温80(II)于维生素D₂(III)增溶体系中可进水解,呈伪一级反应,受特殊酸碱催化,于pH 6附近最稳定, I 稳定性优于II。离子强度、初浓度、一般酸碱催化诸影响因素实验表明,于pH 6 I, II的酯羰基与催化剂间的极性效应微弱,在实用处方添加适量强电解质原辅料、枸橼酸、磷酸二氢盐或 I, II 浓度由1%增至2%时,均不影响稳定性。增溶后位于胶团中心的III,由于相互作用可增加 I, II 的稳定性,而位于胶团较外层的亲油基、亲水基夹层的鲸蜡醇及更外层氧乙烯链上的对羟基苯甲酸,则对 I, II 稳定性无显著影响。

关键词: 聚氧乙烯蓖麻油EL-40 稳定性 维生素D₂ 增溶体系

STUDIES ON STABILITY OF POLYOXYETHYLENE CASTOR OIL EL-40 AND TWEEN 80 IN CALCIFEROL SOLUBILIZED SYSTEMS

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Abstract:

The kinetics of hydrolysis of polyoxyethylene castor oil EL-40 and Tween 80 in calciferol solubilized systems at 55°C. were studied. Each of these surfactants was degraded by a pseudo-first order reaction. The hydrolysis appeared to be catalysed by specific acid-base and pH of maximum stability for each in calciferol solubilized systems was 6 at 55°C. Polyoxyethylene castor oil EL-40 was more stable than Tween 80. In the experimental conditions, it was also found that ionic strength, initial concentration, general acid-base catalysis had no effect on the degradation of both surfactants. Among the solubilizates, calciferol could decrease the degradation of these surfactants, probably due to the difference in locations within micelle but cetyl alcohol and p-hydroxybenzoic acid showed no effect at pH 2. 2.

Keywords: Stability Calciferol Solubilized system Polyoxyethylene castor oil EL-40

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