

TECHNICAL TUESDAYS

TOPIC: Limitation & Restriction of APEO's on Textiles

REF: REF: TT/ Sep 2014/ WK 1

What is APEO?

APEOs are non-ionic surfactants made of branched chain alkyl phenol that has been reacted with ethylene oxide to produce an ethoxylate chain

The length of the ethoxylate chain in NPEOs can vary between 1 and 50, depending on application.

The most important APEOs or alkyl phenol ethoxylates for the textile industry are NPEOs (Nonylphenol ethoxylates) and OPEOs (Octylphenol ethoxylates) due to their detergent properties. APEOs are usually present in detergents, cleaning agents as well as other chemicals used for textile or leather production.

For cleaning products, the most common APEOs are either 9-mole or 10-mole NPEOs. APEOs have hormone disruptive properties and they are toxic to aquatic organisms. APEOs degrade by losing ethoxylate groups and eventually form extremely harmful Nonylphenol or Octylphenol (NP/OP). NP mimics oestrogen, a human hormone and this has been found to cause hormonal disturbances in aquatic life.

Summary of APEO Requirement	
*Limits / Restriction	EU Regulation : 0.1 % on weight of product (1000 mg/kg) EU Ecolabel : Not to be used Buyer requirements : 100 mg/kg
Characteristics / Toxicity	Oestrogenic. Hormonally Disruptive.
Processes	Used in detergents, industrial cleaners, and wetting agents etc. in the textile industry.
Test Method	Extraction in solvent, detection and quantification using liquid chromatography and mass spectrometry

*Limits mentioned here are typical. Each Buyer may have own limits

Reference: Ecological considerations, parameters and testing for the textile industry by Texan lab-2014, Link: <http://www.texanlab.com/documents/downloads/15.pdf>.

Wishing you a happy week ahead!

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