

Appendix 3

General information about effect and process chemicals including assessment scheme of relevance level to textiles (KEMI Report 06/14)

Effect and process chemicals

The chemicals used in the manufacture of textiles can be divided into effect (or functional) chemicals, processing (or auxiliary) chemicals and unintentionally added chemicals. In Table 2, possible concentration ranges of the various chemical categories are listed.

Functional or effect chemicals are added to provide certain properties to the material/article, e.g. dyestuffs to provide colour, topcoat to provide gloss etc. For functional chemicals there is a need for a certain concentration in the final product in order to achieve the desirable function.

Some examples of functional (or effect) chemicals are:

- Colorants (dyestuffs and pigments)
- Oil, soil and water repellents
- Plasticisers
- Flame retardants
- Biocides for defined functionalities in the article e.g. disinfectants
- Stabilizers e.g. antioxidants, UV/light stabilizers and anti-degradants.

Processing or auxiliary chemicals are added to wet chemical processes to enable a process to run properly, but they don't provide any properties to the final article. They are therefore not meant to remain in the finished product. However, these auxiliary chemicals may be found as impurities in the final article due to e.g. bad washing or similar processes for their removal from the processed material. A process chemical which remains as an impurity in the final product often has a relatively low concentration, compared with the concentration of an effect/functional chemical in the final product.

Some examples of process chemicals are:

- Organic solvents
- Surfactants e.g. wetting and dispersing agents
- Softeners
- Catalysts
- Salts
- Acids and bases
- Reactive resins (e.g. binders and adhesives) for various finishing treatments
- Biocides as preservatives in the process or during storage and transport e.g. fungicides and preservatives.
- Tanning agents (leather)
- Drying agents
- Intermediates, precursors and monomers

Table 1 Assessment scheme of relevance level to textiles (KEMI Report 06/14)

Level of textile relevance	Probability assessment	Comments	Main findings - CMR	Concentration range (estimated) [mg/kg]
High (H)	Actually used in textiles	Major use in textile materials	Organic dyestuffs, stabilizers	>100 – 5000<
Medium (M)	May be used in textiles	One of many uses in textile materials.	Inorganic pigments, oxidants	10 – 1000
Low (L)	Indirect or less likely use in textiles	Raw material, intermediate, impurity, degradation product	PAH, raw minerals and salts, petrochemical fractions, arylamines, solvents, biocides (preservatives)	< 100
No	No known use in textiles			< LOD (Limit of detection)