REF:TT/ December 2010/ WK 3

Method for the classification of “textile auxiliaries Depending upon the Process”

The "Method of classification of textile auxiliaries according to the process employed" provides a system and an overview of the nature and type of chemicals being used in the different stages of textile processing:

Integrated environmental pollution prevention and control in textile finishing has to start at “the begin of the pipe”. Besides information on Basic textiles sufficient information on the chemicals and auxiliaries used in textile finishing is necessary too.

It has to be mentioned that some chemicals and auxiliaries are only used for better processing in textile finishing (e.g. levelling agents, complexing agents, detergents). In wet processes these chemicals and auxiliaries create an effect on the textile and helps for the subsequent other chemicals to perform its function.

Only a small amount of this substance will be found in the effluent or off-gas (residual liquors, non fixed substances in exhaust processes, fugitive substances in curing processes).

Other substances (e.g. reactive dyes, crosslinking agents) react during dyeing/finishing. By-products from the reactions (e.g. dye-hydrolysates, formaldehyde,ammonia) will be found in the wastewater or off-gas respectively

The Below table gives an overview on the variety of textile auxiliaries and chemicals used in textile finishing, their effects, and their chemical composition.

Technical Tuesdays

Process	Auxiliary	Effect	Chemical composition
Manufacturing of man-made fibres, coning, texturizing, spinning, twisting, winding, warping, weaving, knitting	Preparation agents (preparation agents for primary spinning, lubricants, conditioning agents, coning oils, warping oils, twisting oils, knitting oils)	Increasing processability, protection of fibres/yarns; adjusting of friction properties; impart of antielectrostatic properties; improve of coning, texturizing etc.	Mineral oils, common fatty acid esters, ethylene oxide-propylene oxide adducts, hindered fatty acid esters, polyolesters, polyester-polyethercarbonates, silicones, additives (emulsifiers, antistatic agents, corrosion inhibitors, anionic/non-ionic surfactants)
Sizing	Sizing agents, sizing additives	Protection of warp yarns during weaving (Applied in weaving mills)	Macro-molecular natural or synthetic products (starch, modified starch, modified cellulosis, polyvinyl alcohol, polyacrylates, polyesters) Additives (oils, waxes, starch solubilizing agents (peroxides))
Pre-treatment			
All pre-treatment steps	Fibre protecting agents	Protection of the fibre and reduction of affection of the fibre during pre-treatment processes	Protein fatty acid condensates and Guanidinium derivatives
Desizing	Desizing agents	Removal of sizing agents	Enzymes (amylases) for enzymatic desizing; mono- and dipersulfates for oxidative desizing; surfactants, complexing agents
Scouring (kierboiling)	Scouring auxiliaries	Removal of fibre by-products (fats, waxes, pectines, inorganics etc.) from cellulose fibres in cellulose materials or blends of cellulose fibres with synthetic fibres	Strong alkali; alkaline-resistant and electrolyte resistant surfactants (fatty alcohol ethoxylates, alkane sulfonates), complexing agents
Bleaching	Bleaching auxiliaries	Bleaching, whitening.	Peroxide, sodium chlorite, sodium hydroxide, complexing agents, surfactants stable in acidic or alkali conditions, silicates, polycarboxylic acids, sugar polymers as peroxide stabilizers, nitrates (anti-corrosion), polyacrylamide (crease-preventing) sodium sulfite, enzymes (catalases) to remove peroxide surplus
Mercerising	Mercerising auxiliaries	Increase in dyestuff uptake and tensile strength of textiles by means of alkali treatment under tension	Strong alkali (sodium hydroxide; ammonia); wetting agents, stable in highly concentrated lyes (low molecular weight alkyl sulfates, alkane sulfonates), antifoaming agents as shorter-chain alkyl phosphates, complexing agents

…..To Be Continued

“Have a Happy Week Ahead”

A knowledge sharing initiative of Resil Chemicals.
For queries, please write to arc@resil.com.
Also, visit www. resil.com

Discover with RESIL