

TECHNICAL TUESDAYS

TOPIC: Limitation & Restriction of PentaChloro Phenol (PCP) & Tetrachloro Phenol (TeCP) on Textiles

REF: REF: TT/ Sep 2014/ WK 5

Pentachloro Phenol & Tetrachloro Phenol:

PCP has been used traditionally used as a preservative in starch where starch is used as a yarn sizing compound.

It prevents fungal growth and mould formation on natural materials.

PCP may also be used in printing gums and can be a constituent of leather processing because of the anti-fungal / anti-mould properties.

Some latex based finishes using natural rubber; elastic rubber accessories also may contain traces of PCP.

It has been reported that PCP is used as a preservative in pigment emulsions, adhesives, glues, vegetable and mutton tallow.

PCP may also be used as a biocide for transportation and or storage of textiles in humid conditions.

TeCP is the lower derivative of PCP and has similar properties. Since the PCP restrictions came into force, many production techniques switched to TeCP, These chlorinated phenolic compounds are harmful to the environment.

In addition, synthesis of PCP produces as a side reaction, dioxins and furans. In addition like all other chlorinated compounds, they degrade to dioxins on combustion.

Dioxins are considered to be one of the most toxic, non-degradable substances on earth. PCP and dioxins are not always easily removed from fabrics.

It is therefore advisable not to use products that have PCP content.

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Summary of PCP & TeCP Requirement

*Limits / Restriction	EU limit: 0.1 % (1000 mg/kg) by weight German limit: 5 mg/kg Common Commercial requirements: 0.5 mg/kg (ppm) for adult wear 0.05 mg/kg (ppm) for children's wear
Characteristics / Toxicity	Organic Compound Environmental toxin Degrade to dioxins on incineration.
Processes	Preservation of natural materials such as size, preservative in natural printing gums, adhesives, glues. Biocides in transportation and storage
Test Method	§ 35 LFBG B 82.02-8 for textiles & leather or KOH extraction ISO 17070 / DIN 53313 (leather -Steam Distillation) Extraction, derivatization and detection with GC-MS/ GC-ECD

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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