Sustainability

FORMALDEHYDE FREE

Solutions by TANATEX Chemicals

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TANATEX® CHEMICALS

The harmonized European classification of formaldehyde has been modified and will apply from 1st January 2016.

Previously, formaldehyde was classified as suspected to be carcinogenic (Carcinogenic Category 2). With the new classification, the substance will be classified as Carcinogenic Category 1B and Mutagenic Category 2. Carcinogenic Category 1B means that there is sufficient evidence for CMR properties, which could be detected in animals, but human carcinogenicity is only suspected. Mutagenic Category 2 means that the substance is suspected of causing genetic defects.

The change of classification will also have effect on mixtures containing formaldehyde. Under the old classification, the limit for classification of the mixture as carcinogenic category 2 was 1%. With the new classification, the limit for classification of mixtures is lowered to 0,1%. Mixtures containing more formaldehyde now also have to be classified as Carcinogenic Category 1B.

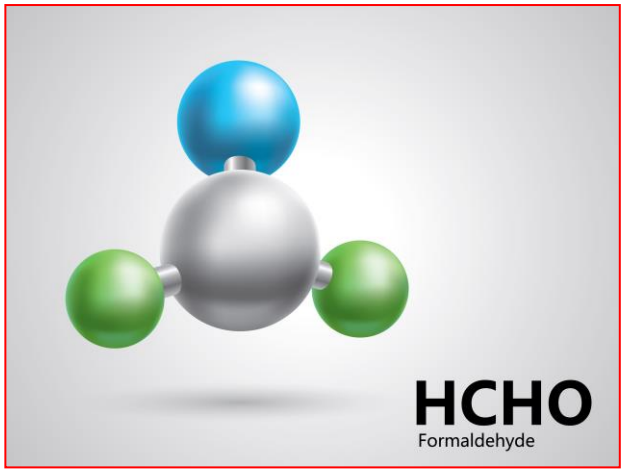
TANATEX takes responsibility

For many years now, TANATEX Chemicals has been working continuously and proactively on the elimination of formaldehyde in the three main processing steps: the reduction of the level of formaldehyde in finished products; the emissions of formaldehyde during their use; and the reduction on the final substrate or textile. The consumer could be permanently unprotected when in contact with the specific substrate. Limiting formaldehyde in the final substrate is thus most important.

So, it is all about limits and measurements techniques. Depending on the method of measurement, values can vary significantly. Öko-Tex standard 100 defines measured values <16 ppm on the substrate as non-detectable according to *Japan Law 112*. EU Ecolabel also uses *Japan Law 112* as a reference and thus it is the most known method.

Other methods like *AATCC 112*, *Shirley free* and methods depending on the industry/application field (e.g. automotive industry, carpet industry) exist as well.

On the market, there are already different, so called *formaldehyde free*, *zero formaldehyde* or *low formaldehyde* dispersions available for e.g. printing and/or coating applications. These binders or resins, as such, can comply with the highest *Öko-Tex 100* level. However, the addition of melamine resins as external crosslinkers is still required to assure acceptable performance properties. These melamine resins are significant sources of (free) formaldehyde! Thus the advantage of one is eliminated by the other.



TANATEX's formaldehyde free solutions

TANATEX has a selection of performance products that meet the requirement of *zero formaldehyde*. This does not only mean that the products will result in less than 16 ppm on the substrate (according *to Japan Law 112 /Öko-Tex/EU Ecolabel*). This really means **zero formaldehyde** on the substrate.

ACRAFIX® FF

ACRAFIX® FF is a crosslinker that improves the performance of your textiles without the release of formaldehyde.

With ACRAFIX® FF the performance properties of the articles can be boosted, improving e.g. rub fastness and wash resistance, while still complying with the latest requirements of all major retailers, brands and eco-labels.

ACRAFIX® FF is also free of catalysts, co-solvents or any other unwanted or restricted substance. This high-performance crosslinker is very compatible and stable in all formulations and has excellent potlife.

ACRAFIX® PCI

ACRAFIX® PCI is a state-of-the-art aliphatic polyisocyanate dispersion with dimethylpyrazole blocked NCO functional groups which can be used as a crosslinking agent for all types of polymer dispersions to be applied on all types of substrates.

The typical characteristics of the product are:

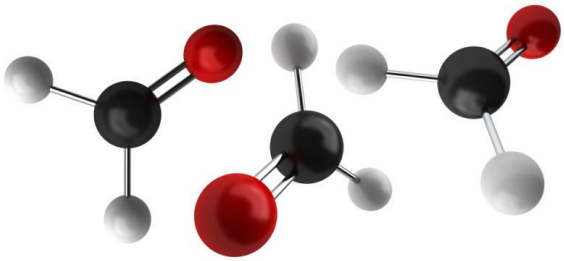
- fully co-solvent free, formaldehyde free and butanone oxime free
- lower de-blocking temperature (120 – 130 °C)
- Increased curing efficiency
- No VOC emissions due to low volatility of blocking agent
- Reduced yellowing when over-cured or at elevated temperatures
- Improved compatibility and stability with wide range of chemicals
- Very environmental friendly

ACRAFIX® PCI is easily stirred into the ready formulated coating. The product does not impair the potlife or running properties of the formulations. ACRAFIX® PCI improves general properties of finishes, coatings and prints, like wet- and dry rubfastness, scratchresistance, adhesion, scrub, wash-fastness, etc.

WHAT IS FORMALDEHYDE?

Formaldehyde is a substance that is present in the natural environment. Therefore, formaldehyde free in principle does not exist. Tobacco smoke contains formaldehyde but it can also be found in food like fish, fruits and vegetables. A smoked fish contains 1.000 ppm, an orange 60 ppm and an apple 20 ppm.

In the atmosphere, formaldehyde is produced by the action of sunlight and oxygen on e.g. methane (gas produced by cows) or other hydrocarbons. Small amounts of formaldehyde are also produced as a by-product in most organisms, including humans.



BAYGARD® EDW

BAYGARD® EDW is a very unique, cost effective and high performance booster for the use with fluorocarbon products. It optimizes the resistance of water and oil-repellent finishes to washing and dry cleaning. The product does not impair the potlife or running properties of the formulations.

BAYGARD® FBI

BAYGARD® FBI is the next generation booster. A very soft, short chain aliphatic polyurethane build according the same technology as ACRAFIX® PCI.

The performance and features of the product can be summarized as follows:

- Next generation booster with soft handle for extra durability
- Improves and enhances the properties and permanency of fluorocarbon finishes on all types of substrates
- Optimizes the resistance to washing and dry cleaning of water and oil repellent finishes
- Improves the film forming properties of the fluorocarbon
- Fully co-solvent free, formaldehyde free and oxime free. No VOC emissions
- Ideal to combine with C6 based fluorocarbons due to lower curing temperature (120 – 130 °C)
- Reduced yellowing when over-cured or at elevated temperatures
- Improved compatibility and stability
- Sustainable

EDOLAN® XCIB

EDOLAN® XCIB is an aliphatic polyurethane dispersion with blocked NCO functional groups which can be used in all coatings based on binders of the EDOLAN® range. It is practically effective in coatings on fabrics made of synthetic fibres, regenerated cellulosics and blends of these with cotton.

EDOLAN® XCIB will improve all technical properties of the coating, like solvent-, flex-, UV- and hydrolyses resistance and has no negative effect on the lightfastness of the coating.

PROTOREZ FFO 01

PROTOREZ FFO 01 is an odourless non-formaldehyde resin for the easy-care and wrinkle free finish of cellulosics and their blends with synthetic fibres. The odourless finish offers strength enhancement and a softer handle, even after many washes.

PROTOREZ FFO 01 is the base component of TANATEX's Wrinkle Free Upgrade, a system that yields excellent easy care of wrinkle free textiles, which stay new during the garment's lifetime. BAYPRET® NANO-PU is the performance booster in this system.

TANAFIX SRC and TANAFIX WRD-E

These after-treatment agents are wet-fastness improvers for dyeing and print with reactive and direct dyes, while meeting all current requirements. Dyeings or prints with reactive dyes are protected against hydrolysis and thermocracking. High-end ratings can be achieved in unusual water, severe, perspiration and hot pressing requirements. Deterioration of the fastness properties during storage of garments under unfavourable conditions are avoided.

For more information about our formaldehyde free solutions, please contact us at info@tanatexchemicals.com.

TANATEX Chemicals B.V.
Einsteinstraat 11
P.O. Box 46
6710 BA Ede
Netherlands

Telephone: +31 318 67 90 11
Fax: +31 318 63 02 36

E-mail: info@tanatexchemicals.com
Internet: www.tanatexchemicals.com

Textile Processing Solutions