

TVMANIA®

Chemical Restrictions



TVMania Chemical Restrictions

Chemical restrictions applied by TVM are based upon legislations in Europe and in the US. TVM requires compliance with these restrictions from all suppliers, and at the time of accepting TVM orders suppliers must sign the given Chemical Restrictions Compliance Commitment (See Appendix 10) The Apparel standards are as follows and the limits mentioned below may not be exceeded at any time.

Chemical Restrictions:

- AZO Dyes
- Sensitizing Disperse Dyes
- Formaldehyde
- pH
- Pentachlorophenol(PCP)
- Organic Solvents
- Polyvinylchloride (PVC)
- Phthalates
- Nickel (Ni)
- Cadmium (Cd)
- Lead (Pb)
- Mercury (Hg)
- Chromium (Cr)
- Antimony (Sb), Arsenic (As), Cobalt (Co), Tin (Sn) and Barium (Ba)
- Polychlorinated biphenyl>s (PCB)
- Nonylphenoethoxylates (NFE)
- Distearylidimethylammoniumchloride (DSDMAC)
- Flame-retardants
- Chlorinated carriers
- Chlorinated bleaching agents
- Monomers

Prohibited AZO Dyes that may release carcinogenic or suspected carcinogenic aromatic amines

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| Normal Limit: | 30 ppm of any of the amines listed on p.3 in Royal Chemical Restrictions. |
| Descriptions: | Aromatic amines can be a part of the molecular structure in an AZO dye. The MAK commission in Germany has classified about 20 aromatic amines to be carcinogenic or suspected carcinogenic. |
| Field of applications: | Azo dyes. |
| In case of exceeded limit: | Another dye needs to be used in production. |
| Alternative dyes: | Reactive dyes among others. |
| Test method & standards: | According to the standard complying with the “Bedarfsgegenständeverordnung” Textiles in general: Method B 82.02-2, January 1998 Textiles from polyester (PES): Method 82.02-3 (comparable to DIN 53316) |

Sensitising Disperse Dyes

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| Normal Limit: | Total ban for any of the disperse dyes listed on p.3 in Royal's Chemical Restrictions |
| Descriptions: | Some disperse dyes are sensitizing and can cause allergy and rashes. |
| Field of applications: | For dyeing mainly polyester fibers but also polyamide and acetate |
| In case of exceeded limit: | Another dye needs to be used in productions |
| Alternative dyes: | Disperse dye not mentioned in enclosed list. |
| Test method & standards: | In-house method with HPLC, no standard method available. |

Formaldehyde

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| Normal Limit: | 30 ppm for toys and baby's wear (up to two years) 100 ppm for under-wear, all children's wear, scarves and other garment with skin contact. 300 ppm for garment for adults without skin contact, for example outer wear. |
| Descriptions: | Formaldehyde is a volatile, colorless gas that is present in small amounts in the atmosphere, tobacco smoke, glue, pollution. Due to its volatility, formaldehyde is “contagious”. If you place a garment with formaldehyde, the other garment will also become “infected”. Formaldehyde can cause allergy, irritation and eczema. Fabric samples for testing need to be packed separately in plastic bags |
| Field of applications: | Formaldehyde can be used for pre-shrinkage and pre-crinkle treatment, for fixation or preservation of dyes and prints a.s.o. |
| In case of exceeded limit: | A wash will reduce the amount of formaldehyde in the fabric. |
| Alternative dyes: | Use formaldehyde free printing and products free from or with low content of formaldehyde. |
| Test method & standards: | SFS 4996 or other validated test methods. |

pH

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| Buyers limit: | 4,5<= pH <=7,5 |
| Descriptions: | pH is a measure of free hydrogen ions in a solutions. The pH-value represent the acidity of the solutions. A low value shows an acidic solution and a high value shows a alkaline solution. A high ph (more than 7,5) can cause skin sensitivity like rashes or irritation. A very high pH (more than 9) can cause burns on the human skin. Also a low pH value can cause skin irritations. |
| Field of applications: | The various chemicals and processes in the textile and garment production, as well as in garment washing and finishing, will effect the final pH-value. |
| In case of exceeded limit: | >7,5-rinse the fabric or garment with normal water or acidic water. To make the water become acidic, diluted formic acid or diluted acetic acid can be used. <4,5-wash the fabric or garment with detergent. |
| Test method & standards: | ISO 3071-1980 or other validated methods. |

Pentachlorophenol(PCP)

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| Buyers limit: | 5 ppm |
| Descriptions: | PCP is an organic compound mostly used for its mouldicide properties. The most important reason for banning PCP is that the combustion of PCP will release dioxins known as some of the most toxic substances in the world, PCP may also be cancer inducing. |
| Field of applications: | PCP is sometimes used to prevent mould when growing cotton and when storing/transporting fabrics. PCP can also be used as a preservative in print pastas. |
| In case of exceeded limit: | it is not possible to improve a fabric containing too much PCP. |
| Alternative dyes: | Disperse dye not mentioned in enclosed list. |
| Test method & standards: | DIN 53313 or other validated test methods. |

Organic Solvents

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| Buyers limit: | 1) Organic solvents must not contain > 5% of aromatic hydrocarbons. 2) No chlorinated organic solvents are allowed. |
| Descriptions: | Organic solvents are volatile and have usually a strong smell. Inhalation can effect the nervous system and also cause headache, the amount of aromatic hydrocarbon increase this hazard. Many chlorinated organic solvents made of aromatic hydrocarbons: Benzene, Toluene and Xylene. |
| Field of applications: | Organic solvents can be used to solve/dilute fats, oils, printing pastas and glue. |
| In case of exceeded limit: | Water based processes. Other organic solvents that are neither aromatic nor chlorinated like acetone, cyclohexane or heptane |
| Test method & standards: | GC-MS and /or head space analysis. No standard method available. |

Polyvinylchloride (PVC)

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| Buyers limit: | Total ban for PVC products. |
| Descriptions: | PVC is a plastic that can be soft or hard, transparent or colored. Many of the compounds involved in PVC production and in the ready PVC product are toxic or suspected to be toxic. |
| Field of applications: | In the textile industry PVC is used for soft plastic accessories like badges or zip pullers, as coating on textiles for rainwear, as prints a.s.o. |
| Alternative plastic: | Polyethylene (PE), Polypropylene (PP), Polyethylenevinylacetate (PEVA), Polystyrene (PS), Polyurethane (PU), Polyethyleneteraphthalate (PET), silicone, polyacrylate, polyacetate are all acceptable alternatives. |
| Test method & standards: | Infrared spectroscopy (IR) or other validated test methods. |

Phthalates

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| Buyers limit: | Total Ban |
| Descriptions: | Studies have shown that phthalates can migrate from a plastic in to the body if a child sucks or chews on the plastic. Phthalates are suspected to be carcinogenic and to disturb the hormone system. |
| Field of applications: | Used as softener (plasticizer) in plastics and other products. Up to 50% of a soft PVC plastic can be a phthalate softener. |
| Alternative softener: | Softeners that don't contain short- or long-chained phthalates. One example: alkyl sulphonic acid ester of phenol |
| Test method & standards: | In-house method with GC-MS, no standard method available. |

Nickel (Ni)

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| Buyers limit: | Maximum release of 0,5 ug/cm ² and week for metals with skin contact. |
| Descriptions: | Nickel (Ni) is a metal that can cause contact dermatitis. A large part of the population is allergic to Ni. |
| Field of applications: | Ni is mainly used for improving the corrosion resistance in alloys and also for improving the hardness of alloys. It can also occur as an impurity. |
| In case of exceeded limit: | A Ni-free alloy shall be used. |
| Alternative metals: | If not a very hard alloy is needed, Aluminum (Al) can be an alternative. If a hard alloy is needed, Cu/Mn/Zn (Copper/Manganese/Zinc) or Fe/Cu/Sn (Iron/Copper/Tin) alloys may be used. |
| Test method & standards: | Nickel release according to EN1811. For samples with lacquer coating: EN12472. |

Cadmium (Cd)

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| Buyers limit: | Total ban for adding Cadmium (Cd) to the production process. For plastic products the limit for Cd is 50 ppm in the ready product. |
| Descriptions: | Cd is a toxic metal and it can cause kidney damage, anemia and skeleton fragility. Cd is also harmful for the environment and the animal life. |
| Field of applications: | Cd is used in some pigments and also as a stabilizer for PVC plastic. Cd has also been found in fertilizers and biocides. |
| Alternative products: | Cd free pigments must be used. Stabilizers based on calcium-zinc or barium-zinc. |
| Test method & standards: | Total metal content of Cd in plastics according to ENV1122 or other validated methods. |

Lead (Pb)

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| Buyers limit: | Total ban for adding Lead (Pb) to the production process. |
| Descriptions: | Pb is a toxic metal that easily accumulates in liver, kidney, spleen and the skeleton. Pb poisoning can lead to anemia among other diseases. |
| Field of applications: | Pb can be used as stabilizer for plastics or as a component in metal alloys. Some pigments for textiles or surface paints on zippers and accessories can contain Pb as well as prints on plastic products. Pb can also be present as a contamination from the textile fiber production |
| Test method & standards: | Total metal content. |

Mercury (Hg)

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| Buyers limit: | Total ban for adding Mercury (Hg) to the production process. |
| Descriptions: | Hg is a toxic metal that easily accumulates in muscles and nervous system in humans and animals. Hg can cause skin irritation as well. |
| Field of applications: | Hg can be present in pesticides and can also be found as contamination in caustic soda (NaOH) |
| Test method & standards: | Total metal content. |

Chromium (Cr)

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| Buyers limit: | Total ban for adding Chromium (Hg) to the process in textile and plastic production. For Chromium VI (Cr6+) there is a total ban for traces in the ready product. |
| Descriptions: | Cr is a heavy metal that can cause skin irritations and allergy. It may also be cancer inducing in high amounts and it is also environmentally harmful. Cr6+ is the most poisonous form of Cr and it is classified as carcinogenic. |
| Field of applications: | Cr can be used as a dyeing additive or as a dye-fixating agent. It can also be used for after treatments in order to improve color fastness. |
| Test method & standards: | Total metal content for analyzing Cr. DIN 53314 or other validated methods for analyzing Cr ⁶⁺ |

Antimony (Sb), Arsenic (As), Cobalt (Co), Tin (Sn) and Barium (Ba)

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|--------------------------|---|
| Buyers limit: | Total ban for adding these elements and their compounds to the textile, leather and plastic production. |
| Descriptions: | These elements can be toxic, irritating and environmentally harmful. |
| Field of applications: | Used in pigments, stabilizers, and biocides for example. |
| Test method & standards: | Total metal content. |

Polychlorinated biphenyl>s (PCB)

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| Buyers limit: | Total ban for adding PCB to the production process. |
| Descriptions: | PCB's are big molecules containing many chlorine atoms. The chlorine atoms help to make the PCB molecules stable and therefore they can easily accumulate in organisms and in the environment. Effects on the hormone system, liver, immune- and nervous system have been observed. When PCB is burnt there is a risk that so called chlorinated dibensofurans are formed. These compounds are even more toxic than PCB's and are chemically similar to dioxins. |
| Field of applications: | PCB's are used as softeners, carriers, flame-retardants and pesticides. |
| Test method & standards: | According to the standard complying with the "Bedarfsgegenständeverordnung" GC-ECD Method: B 80.56-1 or other validated methods. |

Nonylphenolethoxylates (NFE)

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| Buyers limit: | Total ban. |
| Descriptions: | NFE is included in the group of surfactants called alkylphenol ethoxylates. NFE can irritate the skin and the respiratory passages and is also suspected to affect the hormone system in organisms. NFE is considered as environmentally harmful since it is a stable compound that is not easily biodegradable. |
| Field of applications: | NFE is used as a detergent, wetting agent, emulsifier/dispersion agent for colors and prints, impregnating agent. |
| Test method & standards: | In-house method with GC-MS, there is no test standard available. |

Distearyldimethylammoniumchloride (DSDMAC)

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| Buyers limit: | Total ban. |
| Descriptions: | DSDMAC belongs to the group “quaternary ammonium salts” and works as a cation tenside. High concentrations of DSDMAC can give skin irritations but it is mostly due to its environmentally harmful qualities it should not be used . DSDMAC is very poisonous for organisms living in the water and it is not easily biodegradable. |
| Field of applications: | DSDMAC is used in the textile industry as a softener and antistatic agent. |
| Test method & standards: | In-house method with HPLC, there is no test standard available. |

Flame-retardants

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| Buyers limit: | Total ban for brominated or chlorinated flame-retardants(ex. PBB, PBDE, TRIS, TCEP, chloroparaffines) |
| Descriptions: | Brominated or chlorinated flames-retardants are stable compounds and some of them can be accumulated in the environment. The compounds are suspected to effect the immune system and the reproductive system. |
| Field of applications: | To prevent materials from burning too-easily. |
| Alternative flameretardants: | Preferably no flame-retardants shall be used at all, but if it is absolutely necessary PROBAN® or PYROVATEX® may be used. |
| Test method & standards: | In-house method with GC-MS/HPLC. No standard method available. |

Chlorinated carriers

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| Buyers limit: | Total ban for chlorobenzene, chlorotoluenes and chloronaphtalene carriers. |
| Descriptions: | Chlorinated carrier can effect the nervous system and might also have an irritating effect on the skin and the mucous membranes. Many chlorinated carriers are stable and will not be decomposed in the nature; they will be integrated in the bodies of animals and humans. |
| Field of applications: | Chlorinated carriers are used in the dyeing process of polyester of wool/polyester fibers. |
| Alternative Method: | Carriers are not needed if a higher temperature and a higher pressure is used in the dyeing process. |
| Test method & standards: | In-house method with GC-MS. No standard method available. |

Cholorinated bleaching agents

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|------------------------------|---|
| Buyers limit: | Total ban. |
| Descriptions: | When chlorinated bleaching agents are used there is a risk that nonbiodegradable compounds are formed in the wastewater. High concentration of chlorine in the ready product can cause skin irritation. |
| Field of applications: | Used for bleaching textiles. |
| Alternative bleaching agent: | Hydrogenperoxide/Oxygen bleach. |

Monomers

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| Buyers limit: | Only low, undetectable amounts are allowed in the ready product. |
| Descriptions: | Monomers are the building components of a plastic material. Many unreacted monomers are carcinogenic and they can migrate from the plastic and come in contact with the body. |
| Field of applications: | As starting material in plastic production. |
| Comment: | If the production process is well functioning, there will not be any monomers left in the ready product. |
| Test method & standards: | According to the standards complying with the "Bedarfsgegenständeverordnung" Method for acrylnitril monomers with headspace GC-TID: B 80.68-1 Method for vinylchloride monomer with headspace GC-MS: B 80.32-1 (EG) or other validated test methods. |

TVM Dimethylfumarate Compliance

Dimethylfumarate is used by producers as a biocide to kill moulds that may cause furniture or shoe leather to deteriorate during storage and transportation in a humid climate.

Placed in sachets, which are fixed inside the furniture or added to the footwear boxes, DFM evaporates and impregnates the leather, protecting it from moulds.

As of 01.05.2009 the European Union decided to ban the use of Dimethylfumarate in Europe.


In order TVMania to comply with this regulation, its suppliers must sign the Declaration of not using Dimethylfumarate exceeding legal limits in any of their products supplied to TVM (See Appendix 12).

TVMANIA®

Appendixes



Appendix 10 – Chemical Restrictions Compliance Commitment to be signed by TVMania suppliers



Chemical Restrictions Compliance Commitment

Dear Supplier,

With the concern to the health of our customers as well as for the environment and working conditions of factories where our goods are produced, based on the establishment of CHEMICAL RESTRICTIONS of European Legislations, TVMania requires from its suppliers to 100% comply with the restriction limits of harmful substances in any part of the goods produced by them to TVMania.

Chemical Restrictions

- AZO Dyes
- Sensitizing Disperse Dyes
- Formaldehyde
- pH
- Pentachlorophenol(PCP)
- Organic Solvents
- Polyvinylchloride (PVC)
- Phthalates
- Nickel (Ni)
- Cadmium (Cd)
- Lead (Pb)
- Mercury (Hg)
- Chromium (Cr)
- Antimony (Sb), Arsenic (As), Cobalt (Co), Tin (Sn) and Barium (Ba)
- Polychlorinated biphenyls (PCB)
- Nonylphenolethoxylates (NFE)
- Distearyltrimethylammoniumchloride (DSDMAC)
- Flame-retardants
- Chlorinated carriers
- Chlorinated bleaching agents
- Monomers

TVMania requests you to take all necessary action to guarantee the respect of these obligations.

By signing and returning this document to us, you acknowledge full understanding on above restrictions and declare that you are not using above restricted substances exceeding legal limits in any part of the garments produced to TVMania.

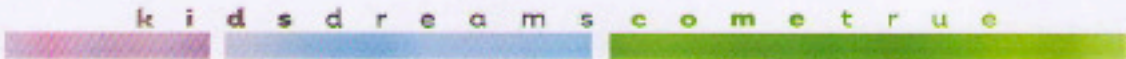
Thank you,
Delinke Zajzon
TVMania QA & Compliance Director

Supplier name:.....

Position of signatory:.....

Signature and Chop:.....

Date:.....



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Appendix 12 – Dimethylfumarate Compliance Commitment to be signed by TVMania suppliers



Dimethylfumarate Compliance Commitment

Dear Supplier,

European Union bans Dimethylfumarate in consumer products.

Dimethylfumarate is used by producers as a biocide to kill moulds that may cause furniture or shoe leather to deteriorate during storage and transportation in a humid climate.

Placed in sachets, which are fixed inside the furniture or added to the footwear boxes, DFM evaporates and impregnates the leather, protecting it from moulds.

Affected are all product groups, especially all kind of leather products (shoes, clothes, accessories, furniture).

As of 01.05.2009 the European Union decided to ban the use of Dimethylfumarate Europe-wide.

As supplier of TVMania please make sure, that you do not supply any product to TVMania which contain Dimethylfumarate with more than 0,1 mg/kg.

Please inform your suppliers accordingly.

By signing and returning this document to us, you acknowledge full understanding on above restriction and declare your compliance with it.

Thank you,
Delinke Zajzon
TVMania QA & Compliance Director

Supplier name:.....
Position of signatory:.....
Signature and Chop:.....
Date:.....

k i d s d r e a m s c o m e t r u e

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