

Eco-Textile Services

**Intertek**

Valued Quality. Delivered.

From brands that care  
from make to wear





# When it comes to Eco-Textile challenges, Intertek has the solutions.

## Your Challenges

As textile and footwear importers or manufacturers, your challenge is to ensure that harmful chemicals are eliminated from products and comply with chemical restrictions around the world. By examining each stage of the supply chain, you can implement essential quality measures to safeguard your business and customers.

Special attention should be paid to the selection of dyes and chemical auxiliaries. This includes keeping products free of hazardous substances such as formaldehyde, pesticides and toxic heavy metals.

## Our Solutions

With over 1,000 offices and labs in over 100 countries, Intertek's team of experts is confident to assist you in facing today's challenges. We not only offer testing services on materials and products, but provide comprehensive auditing and certification services to guard the manufacturing process against use of potentially harmful substances. Our knowledge of today's evolving chemical restrictions, technical competence, and commitment to understanding your needs form the basis of essential assurance.

## Intertek Eco-Certification Scheme

Intertek Eco-Certification satisfies the need of global retailers and manufacturers striving for a high standard of chemical safety, while simultaneously demonstrating concern and diligence for consumers and the environment. Chemicals used in processing both textile materials and leather components are tested

according to applicable chemical legislations of European countries, the United States, and China as well as current industry standards. These requirements along with chemical guidelines of major buyers form the Intertek Restricted Substances List (Intertek RSL) and set forth the technical criteria for Intertek Eco-Certification.

## Intertek Tested Mark – Chemical Certification Scheme

With an increase in green legislations worldwide and a rise in consumer product safety requirements, consumers have become more aware regarding the safety of chemicals and their impact on the environment. Intertek helps chemical manufacturers and distributors cope with this trend by offering the essential solution – the Intertek Tested Mark – Chemical Certification Scheme.

Chemical suppliers can apply for evaluation of one or more chemical items through the Intertek RSL for safety assurance and/or promotional purposes.

## Intertek Recycled Polyethylene Terephthalate (PET) Certification

The consumption of plastics continues to grow each day, driving concern that the volume of plastic waste is endangering our environment. Among various initiatives, recycling is one of the most effective and economical solutions to help reduce waste and build a green environment.



### Did you know...

Two-thirds of the environmental impact associated with a textile garment occurs during the consumer phase, i.e. wash and care, as opposed to during the manufacturing of the garment itself.

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Due to their eco-friendly characteristics, PET materials can be recycled to make a variety of products -- especially in the textile industry. The Intertek Recycled PET Certification Scheme provides a means for manufacturers to differentiate recycled PET from virgin PET in materials ranging from fibers, yarns, fabrics, to garment and associated trims. The scope of certification also allows consumers to recognize the green status of their products.

### Restricted Substances (RSL) Testing

The Intertek technical team possesses the most up-to-date technical know-how and experience in the field of hazardous chemicals testing. With state-of-the-art instruments in each region, we are ready to offer expertise and confidence through our professional chemical testing services.

### Azo/Carcinogenic/Allergenic Dyes

Azo dyes are synthetic dyes having an azo group (-N=N-) in the structure. Azo dyes are commonly used for dyeing textiles and leather. Some azo dyes may produce carcinogenic aromatic amines under certain conditions.

In Europe, REACH Regulation (EC) No 1907/2006, Annex XVII restricts 22 carcinogenic aromatic amines in textiles and leather. Some other dyes used in the textile industry are classified as having adverse effects on humans. More than 20 dispersed dyes are said to be allergenic, while 9 dyes are classified as carcinogenic. These dyes may be absorbed through the skin with prolonged skin contact.

### Formaldehyde

Formaldehyde acts as a cross-linking agent to make an easy-care finish, intended to prevent shrinkage, and gives the product crease-resistant and smooth-dry properties. Release of Formaldehyde can be harmful to health through irritation of mucous membranes and the respiratory tract.

### Pentachlorophenol (PCP), Tetrachlorophenol (TeCP) & Trichlorophenol (TriCP)

To prevent mold spots caused by fungi, chlorinated phenols like PCP are applied directly on textiles, leather and wood. PCP is very toxic and regarded as a cancer-inducing agent.

### Pesticides

Pesticides are used in the cultivation of natural plant fibers like cotton to combat insects, and also as a moth protection agent during storage. Herbicides are weed-eradication and defoliant chemicals. They can be absorbed by the fibers and might remain in the final product. Most of them can be removed during subsequent wet processing. Pesticides and herbicide residues are rated slightly to strongly toxic and are sometimes easily assimilated through the skin.

### Heavy Metals

Heavy metals are constituents of some dyes and pigments. They can also be found in natural fibers due to absorption by plants through soil. Metals may also be introduced into textiles through dyeing and finishing processes.

Once absorbed by humans, heavy metals tend to accumulate in internal organs such as the liver or kidney. The effects on health can be tremendous when high levels of accumulation are reached. For example, high levels of lead can seriously affect the nervous system.

Heavy metals very often refer to:

- **Antimony (Sb)**
- **Arsenic (As)**
- **Lead (Pb)**
- **Cadmium (Cd)**
- **Mercury (Hg)**
- **Copper (Cu)**
- **Chromium (VI) (Cr(VI))**
- **Total Chromium (Cr)**
- **Cobalt (Co)**
- **Nickel (Ni)**

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Both Cadmium and Lead are classified as carcinogens. Cadmium has been restricted in Europe for a long time. Lead is restricted in the U.S. under the Consumer Product Safety Improvement Act (CPSIA) in addition to certain European regulations.

### **Chromium (VI)**

Chromium (VI) is mainly an undesirable by-product generated during the leather tanning process when chrome tanning is employed. Subsequent warehousing and transportation may lead to higher levels of Chromium (VI). Chromium (VI) is a strong oxidant and is classified as a carcinogen that needs to be controlled.

### **Nickel**

Nickel is found in alloys used for metal accessories on garments such as buttons, zippers and rivets. Some people are allergic to nickel and may experience serious skin irritation when in contact with nickel-containing accessories for an extended period. The release of Nickel is restricted under the EU REACH Regulation (EC) No 1907/2006, Annex XVII.

### **Phthalates**

Phthalates are the most popular plasticizers used to soften Polyvinyl Chloride (PVC). Other applications include Polyurethane (PU) and printing inks. Some studies have shown that under simulated mouthing conditions, softened PVC might release phthalates in quantities considered to cause potentially hazardous effects in young children. Various countries across the globe have restricted phthalate use in childcare products through legislation such as the U.S. Consumer Product Safety Improvement Act (CPSIA) and the EU REACH Regulation.

### **TBT, DBT and Other Organotin Compounds**

In the textile industry, TBT has been used for preventing the bacterial degradation of sweat and the corresponding unpleasant odour of socks, shoes and sport clothes. Some organotins may be used in PVC and PU productions. High concentrations of these types of compounds are considered toxic. They can be absorbed through the skin and are suspected to cause reproductive disorders.

### **Chlorinated Organic Carriers**

Commonly used as auxiliaries in the dyeing of polyester, chlorinated organic compounds can have adverse effects on the central nervous system and may induce liver and kidney malfunction.

### **Flame Retardants**

Commonly used flame retardants are TRIS, TEPA, Bis(2,3-dibromopropyl) phosphate, Polybrominated Biphenyls (PBB) and Polybrominated Diphenylether (PBDE). Prolonged contact to high dosages of flame retardants can cause impairment of the immune system, hypothyroidism, memory loss and joint stiffness.

### **pH Value**

Human skin is slightly acidic which inhibits the development of many diseases. Textiles where the pH lies in neutral (pH 7) or in slightly acidic regions (below 7) are friendly to skin. Fabrics with extreme pH values can easily damage skin and may cause allergic reactions.

### **Dimethylfumarate (DMFU)**

Dimethylfumarate is a volatile compound classified as irritating and harmful for the skin, eyes, mucous membranes and upper respiratory tract through simple contact, inhalation or ingestion. The substance is used as a fungicide to prevent mold forming that may deteriorate leather, furniture, footwear or leather accessories during storage or transport, and may be used in desiccant sachets. Dimethylfumarate is banned under the EC Decision 2009/251/EC and 2010/153/EU.

### **Alkylphenols (AP) & Alkylphenol Ethoxylates (APEO)**

Alkylphenols and alkylphenol ethoxylates are commonly used as wetting agents in textile processing. EU REACH Regulation (EC) No 1907/2006 restricts the discharge of Nonylphenol (NP) and Nonylphenol Ethoxylates (NPEO). NPEO's have been used as detergents, emulsifiers, wetting agents and dispersing agents for many years. NP is the intermediate to synthesize NPEO. NPEO and NP are very toxic to aquatic life and considered aquatic pollutants. They can disrupt the hormone-regulating system of aquatic animals and cause estrogenic effects. Octylphenol (OP) and Octylphenol Ethoxylates (OPEO) are the other AP and APEO's commonly concerned.

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## Perfluorooctane Sulfonates (PFOS)

PFOS are widely used to provide grease, oil and water resistance to textiles, apparel, carpets, leather and paper. The substance is considered to be very bio-accumulative and toxic.

## Volatile Organic Compounds (VOC)

VOC refers to a group of volatile organic solvents. The chemicals are often used in paint and ink preparations, glues, cleaning agents, shoe primers, etc. Due to their organic nature, these chemicals tend to have strong and distinct smells. Some VOCs, such as benzene, are carcinogenic. Some are very toxic, and strong irritants.

## General RSL Test Matrix for Textiles, Apparel and Footwear

Test Item	Country	Natural Fabric	Synthetic Fabric	Blended Fabric	Leather	Synthetic PU / PVC	Plastics / Polymers	Paint / Coating / Prints	Metal
Azo Dyes	EU, China, Indian, Vietnam, Korea	●	●	●	●			●	
Carcinogenic Dyes	EU, China	●	●	●	●			●	
Allergenic Disperse Dyes	Germany, China, Korea		●	●				●	
Formaldehyde	Germany, Finland, Japan, China, Vietnam, Korea	●	●	●	●	●		●	
Chlorinated Phenols (PCP, TeCP, TriCP)	EU, Germany, China, Korea	●		●	●				
Total Lead	Denmark, US, Canada, Korea				●	●	●	●	●
Total Cadmium	EU, US					●	●	●	●
Chromium VI	Germany, Korea				●				
Nickel Release	EU								●
Phthalates	EU, US, China, Korea					●	●	●	
Dimethylfumarate	EU, Korea				●				
Organotin Compounds	EU, China, Japan, Korea	●	●	●	●	●	●	●	
Flame Retardants	EU, US, Canada, China, Japan, Korea	●	●	●	●	●	●		
Chlorinated Organic Carriers	EU, China		●	●		●			
NP, OP	EU					●	●	●	
NPEO, OPEO	EU	●	●	●	●	●	●	●	
Short-chain Chlorinated Paraffins (SCCP)	EU	●	●	●	●	●			
Polycyclic Aromatic Hydrocarbons (PAH)	EU					●	●		
Perfluorooctane Sulfonates (PFOS), Perfluorooctanic Acid (PFOA)	EU	●	●	●	●	●			
Volatile Organic Compounds (VOC)	EU, China					●	●	●	
Pesticides	Swiss, China, Japan	●		●	●				



# Intertek

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At Intertek, our time-tested service, wealth of experience, and depth of knowledge allow us to offer solutions dedicated to helping you navigate the regulatory process. Intertek delivers the precision you need, with the speed to market you are looking for.

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