

# Chemical Categories

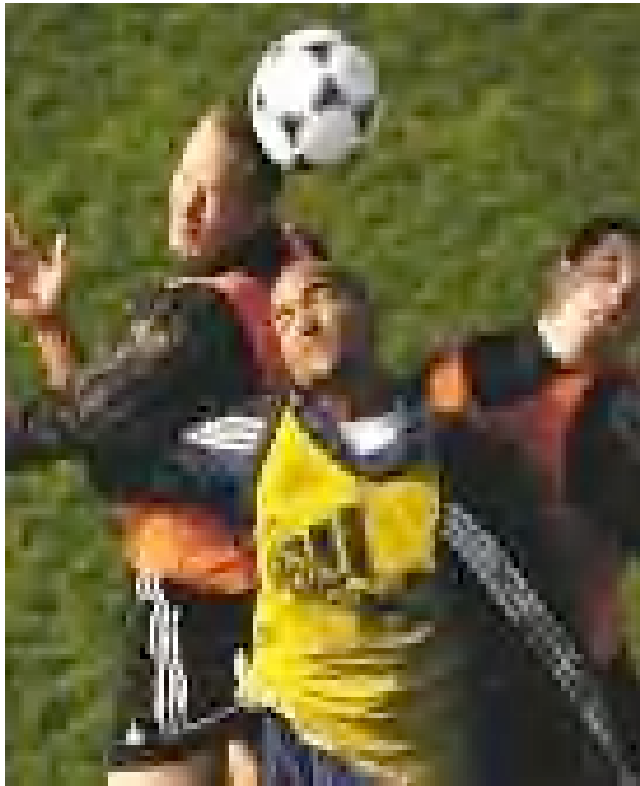
## Chemical Categories and Classification schemes

by

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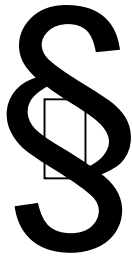


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# Chemical Categories

## Classifications by Law

- German Chemikalienverbots Verordnung (Chemicals Act)
- §30 of the Food and Commodities Law (LMBG)
- Directive 76/769/EEC and amendments (restrictions on marketing and use of certain dangerous substances)
  - Japan Law 112
  - California Proposition 65
- Various national Laws on global base



# Chemical Categories

## Other Classification Schemes

- Stockholm Convention on Persistent Organic Pollutants (POP's)

Targeting prevention and phase out of chemicals according to their inherent characteristics:

- persistent
- toxic
- bio-accumulative
- endocrine disrupting



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## “Consumer” Classification Schemes

- Oeko-tex 100 ([www.okotex.com](http://www.okotex.com))
  - TÜV Toxproof
  - SG Label
- For Inks/Dyes: ETAD

(Ecological and Toxicological Association of Dyes and Organic Pigments Manufacturers)

([www.etad.com](http://www.etad.com))

- WFSGI RSL
- BSR RSL



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# Chemical Categories

**BAUR** **hugo boss** **ecovadis** **ECOMATERIAL REQUIREMENTS TEXTILES FOR GARMENTS**

**OXTO** **Speedi-check**

**"Tested for harmful substances": Natural, chemical fibres and blends**

A. Suit for direct skin contact... unless stated otherwise, this suit applies to all garments  
 B. Direct skin contact... garment which are made in direct skin contact (e.g. t-shirt)  
 C. External children's wear... up to age 12

Parameter	CHEMICAL PARAMETER			Test method	TEXTE-PHYSICAL PARAMETER
	Unit	Limit value	Class		
1. Formaldehyde	mg/kg	10	1	28	Please refer to "Material - Minimum - Requirements" (from IEC) also for appearance and odour. (Processors - Information) + safety marks + labels + chemical (dry) proof + safety system + safety + safety labels The test results of various analysis parameters can vary for all processing and finishing. This indicates the maximum value that can be reached in a worst case scenario.
2. Heavy metals	mg/kg	100	2	28	
3. Chlorinated paraffins	mg/kg	100	2	28	
4. Chlorinated benzenes	mg/kg	100	2	28	
5. Polycyclic aromatic hydrocarbons	mg/kg	100	2	28	
6. Organotin compounds	mg/kg	100	2	28	
7. Organophosphorus compounds	mg/kg	100	2	28	
8. Organochlorine compounds	mg/kg	100	2	28	
9. Organotin compounds	mg/kg	100	2	28	
10. Organophosphorus compounds	mg/kg	100	2	28	

*In case of dispute the test results of "Formaldehyde" shall be decisive. Results of other treatments will not be accepted.*

## “External” Classification Schemes

- Retail
- NGO's
- EN 71
- RoHS



# Chemical Categories



## Classifications in progress

- US EPA decision on PFOA's (chemical for fluorocarbons)
- Phthalates to be integrated under California Proposition 65

- **REACH**

**Registration, Evaluation and Authorisation of Chemicals**

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# Chemical Categories

## Examples of Restricted Substances

### Heavy Metals



**Cadmium** (dyes and stabilizers => accumulating, bone and renal damage)

**Chrome VI** (tanning agent => carcinogenic, strong sensitizer)

**Lead** (dyes and stabilizers => accumulating, neurotoxic, damage of haematopoiesis)

**Mercury** (pesticides => accumulating, neurotoxic, renal damage)

**Nickel** (metal/alloy => strong allergen, carcinogenic)

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# Chemical Categories

## Examples of Restricted Substances

### Phenols

**Pentachlorophenol PCP** (fungicide, pesticide => hepato- and renal toxic, carcinogenic, contains dioxins)

**Tetrachlorophenol TeCP** (fungicide, pesticide => hepato- and renal toxic, carcinogenic, contains dioxins)

**Ortho-Phenylphenol OPP** (preservative, pesticide => toxic)

### Sum of Pesticides



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# Chemical Categories

## Examples of Restricted Substances

### Inks and Dyes

azo-amines

actual 24, all are carcinogenic

disperse dyes

sensitizing to skin

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# Chemical Categories

## Examples of Restricted Substances

### Halogenated Organics

**Polychlorinated Biphenyls PCB** (lubricants => accumulating, mutagenic, teratogenic, some carcinogenic, immunocompromizing)

**Chloroorganic carriers** (hepatotoxic)

**Short chained Chloroparaffines C10 to C13**  
(leather greasing, flame retardants => accumulating, toxic for aqueous life, environmental hazard)

**Flame retardants (including Brominated / Phosphor)** accumulating, toxic, environmental hazard



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# Chemical Categories

## Examples of Restricted Substances



- **Formaldehyde** (preservative, textile auxiliaries => carcinogenic, sensitizing)
- **Phthalates** (polymer plasticizer => endocrine disrupter)

## Tin-organic Compounds

**Tributyltin TBT** (antimicrobial agent, polymerisation => endocrine disrupter, aquatic toxicity)

**Dibutyltin DBT** (polymers, cements, glues, lubricants => endocrine disrupter, aquatic toxicity)

**Monobutyltin MBT** (polymers, cements, glues, lubricants => aquatic toxicity)

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