

eco-INSTITUT-Label

Test criteria: Furniture

(Status: September 2018)

A Basic requirements

- Full declaration of materials
- Minimisation requirements for substances with dangerous properties according to dangerous substances regulations.
- Compliance with limit values for harmful substances (refer to **D laboratory examinations**)
- Compliance with the provisions of the European (e.g. REACH Regulation (EC) No. 1907/2006 and Biocidal Products Regulation (EU) 528/2012) and German chemicals legislation
- Materials with the following classifications may not be used in the product:

Substances according to Regulation (EC) No. 1272/2008 Category Carc. 1A and 1B, Muta. 1A and 1B, Repr. 1A and 1B

Substances according to national law (TRGS 905): Category K1A and K1B, M1A and M1B, R1A and R1B

Substances according to MAK lists III1 and III2

Substances according to IARC groups 1 and 2A

Substances requiring official approval as per Appendix XIV of the REACH regulations

Substances of very high concern according to REACH Regulation (EC) No. 1907/2006, Article 59, paragraph 1 (SVHC, Candidate List)

POPs (Persistent Organic Pollutants) according to Regulation (EC) No 850/2004

Arsenic, lead, cadmium, mercury and compounds

Organic compounds of tin

Antimony trioxide

HFC

Organophosphates

Organic halogenated compounds

Pyrethroids

Phthalic acid esters, Terephthalic acid esters (apart from PET), DINCH

Substances with WGK 3 (German water hazard class 3)

Substances with the following classification (H-Statement or R-Statement):

| Description | | H-Statement (CLP Regulation) | R-Statement (Regulation 67/548/EEC) |
|---------------------------------------|---|---------------------------------|---|
| Fatal | Fatal if swallowed. | H300 | R28 |
| | Fatal in contact with skin. | H310 | R27 |
| | Fatal if inhaled. | H330 | R26 |
| Toxic | Toxic if swallowed. | H301 (> 0.1 %) | R25 (> 0.1 %) |
| | Toxic in contact with skin. | H311 (> 0.1 %) | R24 (> 0.1 %) |
| | Toxic if inhaled. | H331 (> 0.1 %) | R23 (> 0.1 %) |
| Specific target organ toxicity | Cause damage to organs. | H370 | R39 |
| | May cause damage to organs. | H371 | R68 |
| | Causes damage to organs through prolonged or repeated exposure. | H372 | R48 |
| | May cause damage to organs through prolonged or repeated exposure. | H373 | |
| Sensitization of respiratory tract | May cause allergy or asthma symptoms or breathing difficulties if inhaled. | H334 | R42 |

| Description | | H-Statement (CLP Regulation) | R-Statement (Regulation 67/548/EEC) |
|--------------------------------|---|---------------------------------|---|
| Carcinogenicity | May cause cancer. | H350 | R45 |
| | Suspected of causing cancer. | H351 | R40 |
| Mutagenicity | May cause genetic defects. | H340 | R46 |
| | Suspected of causing genetic defects. | H341 | R68 |
| Reproductive toxicity | May damage fertility or the unborn child. | H360 | R60, R61 |
| | Suspected of damaging fertility or the unborn child. | H361 | R62, R63 |
| | May cause harm to breast-fed children. | H362 | --- |
| Acute hazardous to water | Very toxic to aquatic life. | H400 | R50 |
| Chronically hazardous to water | Very toxic to aquatic life with long lasting effects. | H410 | R50/53 |
| | Toxic to aquatic life with long lasting effects. | H411 (> 1 %) | R51/R53 (> 1 %) |
| Hazardous to ozone layer | Hazardous to the ozone layer. | EUH 059 | --- |

B Special requirements

- Tropical timber may only be used if it comes from sustainable forestry (proof: FSC or similar certification system).
- Photoinitiators are allowed in coating agents.
- PUR / Polyurea adhesive on the basis of isocyanates are allowed.

C Laboratory examinations

| P12 Complete furniture | | |
|---|--|--|
| Test parameter | Limit value | Test method |
| Emission test | | |
| TVOC (total volatile organic compounds) | $\leq 3000 \mu\text{g}/\text{m}^3$ (3 days after test chamber loading) $\leq 300 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | DIN EN 16516, DIN EN ISO 16000-6, DIN EN ISO 16000-9 Test chamber conditions: cf. testing manual |
| VOC (incl. VVOC and SVOC) with the following categorisations: Regulation (EC) No. 1272/2008: Category Carc. 1A and 1B, Muta. 1A and 1B, Repr. 1A and 1B; TRGS 905: K1A, K1B, M1A, M1B, R1A, R1B; IARC: Group 1 and 2A; DFG (MAK list): Categories III1, III2 | $\leq 1 \mu\text{g}/\text{m}^3$ (3 days after test chamber loading) | |
| VOC (sum) without NIK | $\leq 100 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| VOC (individual value): | | |
| Sum of bicyclic terpenes | $\leq 200 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| Sum of sensitising materials with the following categorisations: DFG (MAK list): Category IV, TRGS 907 | $\leq 100 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| Sum of VOC (incl. VVOC and SVOC) with the following categorisations: Regulation (EC) No. 1272/2008: Category Carc. 2, Muta. 2, Repr. 2; TRGS 905: K2, M2, R2; IARC: Group 2B; DFG (MAK list): III3 | $\leq 50 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| Sum C9 – C14 Alkanes / Isoalkanes | $\leq 200 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| Sum C4 – C11 Aldehydes, acyclic, aliphatic | $\leq 100 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| Sum C6 – C15 Alkyl benzenes | $\leq 100 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| Sum Cresols | $\leq 5 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| Sum Xylenes | $\leq 100 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| VOC (individual substances): | | |
| Styrene | $\leq 10 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| Methylisothiazolinone (MIT) | $\leq 1 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| Benzisothiazolinone (BIT) | $\leq 5 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| Octylisothiazolinone (OIT) | $\leq 1 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| Benzaldehyde | $\leq 20 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| 2-Ethyl-1-hexanol, Ethylene glycol mono-butyl ether, 2-Hexoxyethanol, Methyl-isobutylketone (Limit value per single substance) | $\leq 100 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| 2-Butoxyethylacetate | $\leq 200 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| Glycol ethers with insufficient data ¹ (Limit value per single substance) | 0.005 ppm (28 days after test chamber loading) | |
| Propane-1,2-diol | $\leq 60 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| 2-Phenoxyethanol | $\leq 30 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| Phenol | $\leq 20 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| TSVOC (total semi-volatile organic compounds) | $\leq 100 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| R value | ≤ 1.0 (28 days after test chamber loading) | |
| Isocyanate monomers (only when utilising relevant substances) | $\leq 1 \mu\text{g}/\text{m}^3$ (TDI, HDI) $\leq 2 \mu\text{g}/\text{m}^3$ (MDI) (24 days after test chamber loading) | Draeger analytical system |

¹ cf. Announcement of the Ad-hoc Working Group on Indoor Guidelines of the Indoor Air Hygiene Committee and of the Supreme State Health Authorities: Richtwerte für Glykolether und Glykolester in der Innenraumluft, Bundesgesundheitsblatt, February 2013, Volume 56, Issue 2, pp 286-320
An exceedance of this limit value will not yet result automatically in a refusal.

| P12 Complete furniture | | |
|---|---|---|
| Test parameter | Limit value | Test method |
| Emission test | | |
| Formaldehyde | | following DIN EN 717-1, DIN EN ISO 16000-3 |
| Wood, bamboo, rattan or the like | $\leq 36 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| Other materials (plastics, lacquered metal or the like) | $\leq 24 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| Acetaldehyd | | |
| Wood, bamboo, rattan or the like | $\leq 36 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| Other materials (plastics, lacquered metal or the like) | $\leq 24 \mu\text{g}/\text{m}^3$ (28 days after test chamber loading) | |
| Odour | \leq Grade 3 (24 hours after loading of desiccator) | VDA 270; 23°C |
| Content analysis | | |
| AOX (adsorbable organic halogenated compounds) | $\leq 1.0 \text{ mg/kg}$ | DIN EN ISO 9562 |
| EOX (extractable organic halogenated compounds) | $\leq 2.0 \text{ mg/kg}$ | following DIN 38414-517 |
| Phthalates (plasticizer; sum) DMP, DEP, DPP, DBP, BBP, DEHP, DNOP, DIBP, BMEP, DHP, DNPP, DIPP, PIPP, DINP, DIDP, DIHP, DHNUP | $\leq 100 \text{ mg/kg}$ | following DIN EN 15777 |
| Terephthalate DEHT | $\leq 100 \text{ mg/kg}$ | following DIN EN 15777 |
| Diisononyl cyclohexane-1,2-dicarboxylate, DINCH | $\leq 100 \text{ mg/kg}$ | following DIN EN 15777 |
| Organotin compounds (only plastics; limit value per single substance) TBT, DBT, TeBT, MBT, MOT, DOT, TcyT, TPhT | $\leq 0.05 \text{ mg/kg}$ | Extraction, analysis, following DIN EN ISO 17353 |
| PAH / Polycyclic aromatic hydrocarbons (only black plastics) Sum PAH after EPA (18 substances) | $\leq 0.5 \text{ mg/kg}$ | DIN ISO 18287 |