

## eco-INSTITUT-Label

### Test criteria: Hard surface cleaners

(Status: May 2021)

#### A Basic requirements

- Full declaration of materials
- Minimisation requirements for substances with dangerous properties according to dangerous substances regulations.
- Compliance with requirements for harmful substances (refer to **C 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 must 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 excluded according to DE-UZ 194

- Substances with the following classification (H-phrase) must not be used in the product<sup>1</sup>:

| Description                        |  | H-Statement  |
|------------------------------------|--|--------------|
| Fatal                              | Fatal if swallowed.  | H300         |
|                                    | Fatal in contact with skin.  | H310         |
|                                    | Fatal if inhaled.  | H330         |
|                                    | May be fatal if swallowed and enters airways.                              | H304         |
| Toxic                              | Toxic if swallowed.  | H301         |
|                                    | Toxic in contact with skin.  | H311         |
|                                    | Toxic if inhaled.  | H331         |
|                                    | Toxic in contact with eyes.  | EUH070       |
| Specific target organ toxicity     | Cause damage to organs.  | H370         |
|                                    | May cause damage to organs.  | H371         |
|                                    | Causes damage to organs through prolonged or repeated exposure.            | H372         |
|                                    | 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         |
|                                    | May cause allergic skin reactions.   | H317         |
| Carcinogenicity                    | May cause cancer.  | H350         |
|                                    | Suspected of causing cancer.   | H351         |
| Mutagenicity                       | May cause genetic defects.   | H340         |
|                                    | Suspected of causing genetic defects.                                      | H341         |
| Reproductive toxicity              | May damage fertility or the unborn child.                                  | H360         |
|                                    | Suspected of damaging fertility or the unborn child.                       | H361         |
|                                    | May cause harm to breast-fed children.                                     | H362         |
| Acute hazardous to water           | Very toxic to aquatic life.  | H400         |
| Chronically hazardous to water     | Very toxic to aquatic life with long lasting effects.                      | H410         |
|                                    | Toxic to aquatic life with long lasting effects.                           | H411 (> 1 %) |
| Hazardous to ozone layer           | Hazardous to the ozone layer.  | EUH 059      |

Substances of the following groups of chemicals are exempted from the exclusion of chemicals with certain classifications:

| Group of chemical             | Classification (H-statement)   |
|-------------------------------|--|
| Surfactants                   | H400: Very toxic to aquatic life.  |
|                               | H412: Harmful to aquatic life with long-lasting effects.                         |
| Enzymes including stabilizers | H317: May cause an allergic skin reaction.                                       |
|                               | H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled. |

<sup>1</sup> For homogeneous substance mixtures, all input substances > 0.1 % (except for H411) are evaluated. For articles, the overall classification of the input substance or substance mixture (e.g. adhesive, varnish, etc.) is evaluated. Inputs that have critical hazard characteristics (H-phrase) due to respirable wood dusts or mineral dusts are allowed, provided the overall product does not have a critical hazard characteristic. Input materials with critical hazard characteristics (H-phrase) for which a requirement value is defined in the laboratory test are permissible, provided that the requirement for emission behavior or content is met.

## **B Special requirements**

- Proportion of renewable carbon in the total carbon of the surfactant system: > 50 %
- Proof of sustainable cultivation of oil plants on certified plantations, if raw materials produced from palm oil and palm kernel oil are used
- Biodegradability of surfactants (readily biodegradable under aerobic conditions and biodegradable under anaerobic conditions) according to DE-UZ 194
- Biodegradability of organic substances according to DE-UZ 194: Content of aerobically not readily biodegradable organic substances < 0.200 g/L cleaning solution; anaerobically non-biodegradable organic substances < 0.500 g/L cleaning solution
- Toxicity to aquatic organisms according to DE-UZ 194: Critical dilution volume toxicity  $\leq 18,000$  L/L cleaning solution
- Exclusion of biocides according to Biocides Regulation EU No. 528/2012
- Packaging: no use of PVC; weight utility ratio:  $\leq 1.2$  g/L cleaning solution

## C Laboratory examinations

| Hard surface cleaners   |                                   |   |
|---|-----------------------------------|---|
| Test parameter  | Requirement                       | Test method   |
| <b>Emission test (4 and 24 hours after test chamber loading)</b>  |                                   |   |
| TVOC (total volatile organic compounds)   | $\leq 300 \mu\text{g}/\text{m}^3$ | DIN EN 16516<br>DIN ISO 16000-6, DIN EN ISO 16000-9<br><br>Test chamber conditions:<br>cf. testing manual<br>Sample preparation:<br>application of cleaning solution on glass according to manufacturer's dosage instructions, minimum: 30 g/m <sup>2</sup> |
| VOC (incl. VVOC and SVOC) with the following categorisations:<br>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 | $\leq 1 \mu\text{g}/\text{m}^3$   |   |
| VOC (sum) without NIK   | $\leq 100 \mu\text{g}/\text{m}^3$ |   |
| VOC (individual values):  |                                   |   |
| Sum of bicyclic terpenes  | $\leq 200 \mu\text{g}/\text{m}^3$ |   |
| Sum of sensitising materials with the following categorisations:<br>DFG (MAK lists): Category IV, TRGS 907  | $\leq 100 \mu\text{g}/\text{m}^3$ |   |
| Sum of VOC (incl. VVOC and SVOC) with the following categorisations:<br>Regulation (EC) No. 1272/2008: Category Carc. 2, Muta. 2, Repr. 2; TRGS 905: K2, M2, R2; IARC: Group 2B; DFG (MAK list): Category III3  | $\leq 50 \mu\text{g}/\text{m}^3$  |   |
| Sum C9 - C14 Alkanes / Isoalkanes   | $\leq 200 \mu\text{g}/\text{m}^3$ |   |
| Sum C4 - C11 Aldehydes, acyclic, aliphatic  | $\leq 100 \mu\text{g}/\text{m}^3$ |   |
| Sum C6 - C15 Alkyl benzenes   | $\leq 100 \mu\text{g}/\text{m}^3$ |   |
| Sum Cresols   | $\leq 5 \mu\text{g}/\text{m}^3$   |   |
| Sum Xylenes   | $\leq 100 \mu\text{g}/\text{m}^3$ |   |
| VOC (individual substances):  |                                   |   |
| Styrene   | $\leq 10 \mu\text{g}/\text{m}^3$  |   |
| Methylisothiazolinone (MIT)   | $\leq 1 \mu\text{g}/\text{m}^3$   |   |
| Benzaldehyde  | $\leq 20 \mu\text{g}/\text{m}^3$  |   |
| 2-Ethyl-1-hexanol, Ethylene glycol mono-butyl ether, 2-Hexoxyethanol, Methyl-isobutylketone (requirements per single substance)   | $\leq 100 \mu\text{g}/\text{m}^3$ |   |
| 2-Butoxyethylacetate  | $\leq 200 \mu\text{g}/\text{m}^3$ |   |
| Glycol ethers with insufficient data (requirements per single substance)  | 0.005 ppm                         |   |
| Propane-1,2-diol  | $\leq 60 \mu\text{g}/\text{m}^3$  |   |
| 2-Phenoxyethanol  | $\leq 30 \mu\text{g}/\text{m}^3$  |   |
| Phenol  | $\leq 20 \mu\text{g}/\text{m}^3$  |   |
| Benzothiazol <sup>2</sup>   | $\leq 15 \mu\text{g}/\text{m}^3$  |   |
| Ethylacetat (VVOC)  | $\leq 600 \mu\text{g}/\text{m}^3$ |   |
| TSVOC (total semi-volatile organic compounds)   | $\leq 100 \mu\text{g}/\text{m}^3$ |   |
| R-value   | $\leq 1.0$                        |   |
| Formaldehyde  | $\leq 24 \mu\text{g}/\text{m}^3$  | DIN EN 16516  |

<sup>2</sup> Preliminary, exceeding the limit does not lead to devaluation at present

| Hard surface cleaners  |   |                    |
|--|---|--------------------|
| Test parameter   | Requirement   | Test method        |
| <b>Emission test (4 and 24 hours after test chamber loading)</b> |   |                    |
| Acetaldehyde   | $\leq 24 \mu\text{g}/\text{m}^3$  | DIN ISO 16000-3    |
| Odour  | $\leq$ Grade 4 (4h after test chamber loading)<br>$\leq$ Grade 3 (24h after test chamber loading at the latest) | cf. testing manual |

| Hard surface cleaners   |  |  |
|---|--|--|
| Test parameter  | Requirement  | Test method  |
| <b>Content analysis<sup>3</sup></b>   |  |  |
| 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 (sum)<br>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 (requirement per single substance)<br>TBT, DBT, TeBT, MBT, MOT, DOT, TcyT, TPhT                 | $\leq 0.05 \text{ mg/kg}$  | Extraction, analysis<br>following DIN EN ISO 17353         |
| Heavy metals  |  | DIN EN 17294-2<br>(01/2017)<br>DIN EN 16711-1<br>(04/2014) |
| Arsenic (As)  | $\leq 5.0 \text{ mg/kg}$   |  |
| Cadmium (Cd)  | $\leq 0.5 \text{ mg/kg}$   |  |
| Chrome total (Cr)   | $\leq 20.0 \text{ mg/kg}$  |  |
| Mercury (Hg)  | $\leq 0.2 \text{ mg/kg}$   |  |
| Nickel (Ni)   | $\leq 20.0 \text{ mg/kg}$  |  |
| Lead (Pb)   | $\leq 20.0 \text{ mg/kg}$  |  |
| Antimony (Sb)   | $\leq 0.2 \text{ mg/kg}$   |  |
| Tin (Sn)  | $\leq 5.0 \text{ mg/kg}$   |  |
| Phosphorous (with reference to the cleaning solution)   | $\leq 0.02 \text{ g/kg}$   |  |
| Amines (azo dyes; only dyed cleaners)   | $\leq 20 \text{ mg/kg}$  | LFBG §64, 82.02-2,-4                                       |
| Allergenic dyes materials (dispersion dyes materials; only dyed cleaners)   | $\leq 50 \text{ mg/kg}$  | DIN 54231  |
| Isothiazolinones<br>(requirements per single substance)<br>BIT, CIT, MIT  | $\leq 0.1 \text{ mg/kg}$ (CIT)<br>$\leq 10 \text{ mg/kg}$ (BIT, MIT) | Extraction, HPLC-MS/MS                                     |
| pH-value  | $< 11$   | DIN EN ISO 3071  |
| Alkylphenol(ethoxylates)  | $\leq 20.0 \text{ mg/kg}$  | HPLC-MS/MS, GC/MSD   |

<sup>3</sup> If there are indications that the basic requirements (exclusion of the substance groups listed there) are not met or if there is insufficient information on the substances used, additional ingredient analyses may be necessary.