

## eco-INSTITUT-Label

### Test criteria: Hard surface cleaners

(Status: December 2019)

#### 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 **B 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 with WGK 3 (German water hazard class 3)

Substances excluded according to DE-UZ 194

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
	May be fatal if swallowed and enters airways.	H304	R65
Toxic	Toxic if swallowed.	H301	R25
	Toxic in contact with skin.	H311	R24
	Toxic if inhaled.	H331	R23
	Toxic by eye contact.	EUH70	---
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 / skin	May cause allergy or asthma symptoms or breathing difficulties if inhaled.	H334	R42
	May cause an allergic skin reaction.	H317	R43

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	R51/R53
	Harmful to aquatic life with long-lasting effects.	H412	R52/R53
	May cause long-lasting harmful effects to aquatic life.	H413	R53
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.

## 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 ≤ 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: ≤ 1.2 g/L cleaning solution

## B 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 DIN ISO 16000-6, DIN EN ISO 16000-9  Test chamber conditions: cf. testing manual Sample preparation: 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: 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: 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: 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 (Limit value 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 (Limit value 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	$\leq 20 \mu\text{g}/\text{m}^3$	
TSVOC (total semi-volatile organic compounds)	$\leq 100 \mu\text{g}/\text{m}^3$	
R-value	$\leq 1.0$	
Formaldehyde	$\leq 24 \mu\text{g}/\text{m}^3$	following DIN EN 717-1, DIN ISO 16000-3
Acetaldehyde	$\leq 24 \mu\text{g}/\text{m}^3$	
Odour	$\leq$ Grade 3 (24 hours after loading of desiccator)	following VDA 270; 23°C

Hard surface cleaners		
Test parameter	Requirement	Test method
<b>Content analysis</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-S17
Phthalates (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 (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
Heavy metals		DIN EN 17294-2 (01/2017) DIN EN 16711-1 (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 (limit value per single substance) BIT, CIT, MIT	$\leq 0.1 \text{ mg/kg (CIT)}$ $\leq 10 \text{ mg/kg (BIT, MIT)}$	Extraction, HPLC-MS/MS
pH-value	$< 11$	DIN EN ISO 3071
Alkylphenol(ethoxylates)	$\leq 20.0 \text{ mg/kg}$	HPLC-MS/MS, GC/MSD