eco-INSTITUT Germany GmbH

Laborprüfung
Laboratory testing
Zertifizierung
Certification

eco-INSTITUT-Label

Test criteria: Hard surface cleaners

(Status: March 2023)

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 lll1 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
Phthalatic acid esters, Terephthalatic 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[1]:

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.

[1] 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 behaviour or content is met and the requirement value was derived from the property that the H-phrase also addresses.

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

C Laboratory examinations

Hard surface cleaners

Test parameter	Requirement	Test method
Emission test (4 and 24 hours after test chamber loading)		
TVOC (total volatile organic compounds)	≤ 300 µg/m³	DIN EN 16516 DIN ISO 16000-3 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/m²
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	≤ 1 µg/m³	
VOC (sum) without NIK	≤ 100 µg/m³	
VOC (individual values):		
Sum of bicyclic terpenes	≤ 200 µg/m³	
Sum of sensitising materials with the following categorisations: DFG (MAK lists): Category IV, TRGS 907	≤ 100 µg/m³	
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	≤ 50 µg/m³	
Sum C9 – C14 Alkanes / Isoalkanes	≤ 200 µg/m³	
Sum C4 – C11 Aldehydes, acyclic, aliphatic	≤ 100 µg/m³	
Sum C6 – C15 Alkyl benzenes	≤ 100 µg/m³	
Sum Cresols	≤ 5 µg/m³	
Sum Xylenes	≤ 100 µg/m³	
Sum Naphthalene and naphthalene-like subst.	≤ 10 µg/m³	
VOC (individual substances):		
Methylisothiazolinone (MIT)	≤ 1 µg/m³	
Octylisothiazolinone (OIT)	≤ 1 µg/m³	
Benzaldehyde	≤ 20 µg/m³	
2-Ethyl-1-hexanol, Ethylene glycol mono-butyl ether, 2-Hexoxyethanol, Methyl-isobutylketone (requirement per single substance)	≤ 100 µg/m³	
2-Butoxyethyl acetate	≤ 200 µg/m³	
Glycol ethers with insufficient data[2] (requirement per single substance)	0.005 ppm	
Propane-1,2-diol	≤ 60 µg/m³	
2-Phenoxyethanol	≤ 30 µg/m³	
Phenol	≤ 20 µg/m³	
Benzothiazole[3]	≤ 15 µg/m³	
Ethyl acetate (VVOC)	≤ 600 µg/m³	

[2] cf. announcement of the Federal Environment Agency: guideline values for glycol ethers and glycol esters in indoor air, Bundesgesundheitsblatt, February 2013, Volume 56, Issue 2, pp 286-320.

[3] preliminary, exceeding the limit does not lead to devaluation at present

Hard surface cleaners		
Test parameter	**Requirement**	**Test method**
Emission test (4 and 24 hours after test chamber loading)		
Acetophenone	≤ 66 µg/m³	
TSVOC (total semi-volatile organic compounds)	≤ 100 µg/m³	
R-value	≤ 1.0	
Formaldehyde	≤ 24 µg/m³	DIN EN 16516 DIN ISO 16000-3
Acetaldehyde	≤ 24 µg/m³	
Odour	≤ Grade 4 (4h after test chamber loading) ≤ Grade 3 (24h after test chamber loading at the latest)	cf. testing manual

Hard surface cleaners		
Test parameter	**Requirement**	**Test method**
Content analysis[4]		
AOX (adsorbable organic halogenated compounds)	≤ 1.0 mg/kg	DIN EN ISO 9562
EOX (extractable organic halogenated compounds)	≤ 2 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, DIHxP	≤ 100 mg/kg	following DIN EN 15777
Terephthalate DEHT	≤ 100 mg/kg	following DIN EN 15777
Diisononyl cyclohexane-1,2-dicarboxylate, DINCH	≤ 100 mg/kg	following DIN EN 15777
Organotin compounds (requirement per single substance) TBT, DBT, TeBT, MBT, MOT, DOT, TcyT, TPhT	≤ 0.05 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)	≤ 5.0 mg/kg	
Cadmium (Cd)	≤ 0.5 mg/kg	
Chrome total (Cr)	≤ 20.0 mg/kg	
Mercury (Hg)	≤ 0.2 mg/kg	
Nickel (Ni)	≤ 20.0 mg/kg	
Lead (Pb)	≤ 20.0 mg/kg	
Antimony (Sb)	≤ 0.2 mg/kg	
Tin (Sn)	≤ 5.0 mg/kg	
Phosphorous (with reference to the cleaning solution)	≤ 0.02 g/kg	
Amines (azo dyes; only dyed cleaners)	≤ 20 mg/kg	LFBG §64, 82.02-2,-4
Allergenic dyes materials (dispersion dyes materials; only dyed cleaners)	≤ 50 mg/kg	DIN 54231
Isothiazolinones (requirements per single substance) BIT, CIT, MIT	≤ 0.1 mg/kg (CIT) ≤ 10 mg/kg (BIT, MIT)	Extraction, HPLC-MS/MS
pH-value	< 11	DIN EN ISO 3071
Alkylphenol(ethoxylates) (sum) NP, OP, HpP, PeP, NPEO, OPEO	≤ 20.0 mg/kg	HPLC-MS/MS, GC/MSD

[4] 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 content analysis may be necessary.