BLUE ANGEL

The Environmental Label

Low-Emission Sealants for Interior Use

DE-UZ 123

Basic Award Criteria

Edition January 2019

Version 4

The Environmental Label is supported by the following four institutions:

Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety is the owner of the label. It regularly provides information on the decisions taken by the Environmental Label Jury.

Umwelt Bundesamt

The German Environmental Agency with its specialist department for "Ecodesign, Eco-Labelling and Environmentally friendly Procurement" acts as office of the Environmental Label Jury and develops the technical criteria of the Basic Criteria for Award of the Blue Angel.

Jury Umweltzeichen

The Environmental Label Jury is the independent, decision-making body for the Blue Angel and includes representatives from environmental and consumer associations, trade unions, industry, the trade, crafts, local authorities, academia, the media, churches, young people and the German federal states.

RAL gGmbH

RAL gGmbH is the awarding body for the Environmental Label. It organises the process for developing the relevant award criteria in independent expert hearings – which involve all relevant interest groups.

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Version 4 (11/2020): Changes in Appendix A List of approved in-can preservatives
Version 5 (05/2022): Editorial changes in Appendix A (footnote 17)

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This document is a translation of a German original. In case of dispute, the original document should be taken as authoritative.

1 Introduction

1.1 Preface

In cooperation with the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, the German Environmental Agency and considering the results of the expert hearings conducted by RAL gGmbH, the Environmental Label Jury has set up these Basic Criteria for the Award of the Environmental Label. RAL gGmbH has been tasked with awarding the Environmental Label.
Upon application to RAL gGmbH and on the basis of a Contract on the Use of the Environmental Label to be concluded with RAL gGmbH, the permission to use the Environmental Label may be granted to all products, provided that they comply with the requirements as specified hereinafter.
The product must comply with all the legal requirements in the country in which it is to be marketed. The applicant shall declare that the product meets this requirement.

1.2 Background

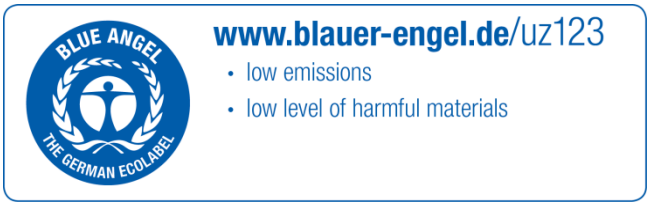
Sealants can cause environmental pollution across the whole life cycle of the product. Therefore, the requirements for the environmental label focus not only on the substances and materials used in the manufacturing process but also on the period of use of the products and their subsequent disposal.
In addition, the pollutant load in the sealants must be low so that emissions from these products are minimised as much as possible. The environmental label is designed for the labelling of low-emission products.
In order to evaluate the emissions from sealants, the design of these Basic Award Criteria has been based on the evaluation procedure developed by the Committee for Health-Related Evaluation of Building Products – a committee of experts from environmental and health authorities at a federal government and state level.

1.3 Objectives of the Environmental Label

The environmental label for "Low-Emission Sealants for Interior Use" may be awarded to products that – above and beyond the legal regulations:

- are manufactured in an environmentally friendly manner,
- do not contain any harmful substances that have a detrimental impact during the recycling process

Therefore, the following benefits for the environment and health are stated in the explanatory box:



1.4 Definitions

Constituent components: Substances added to the product as such or as part of a mixture in order to achieve or influence certain product properties and those required as chemical cleavage products for achieving the product properties. This does not apply to residual monomers that have been reduced to a minimum.

Product-type (PT) 6 Preservatives for products during storage: Products used for the preservation of manufactured products, other than foodstuffs, feeding stuffs, cosmetics or medicinal products or medical devices by the control of microbial deterioration to ensure their shelf life.

Product-type (PT) 7 Film preservatives: Products used for the preservation of films or coatings by the control of microbial deterioration or algal growth in order to protect the initial properties of the surface of materials or objects such as paints, plastics, sealants, wall adhesives, binders, papers, art works.

SVOC: Semi Volatile Organic Compound, retention range >C16-C22

TVOCspez: Sum of all individual substances found ≥ 5 µg/m³ in the retention range C6 – C16 (total volatile organic compounds)

TSVOC: Sum of all individual substances ≥ 5 µg/m³ in the retention range > C16 – C22.

VOC: Volatile Organic Compounds, retention range C6-C16

VVOC: Very Volatile Organic Compounds, retention range <C6

WHC: Water hazard class

2 Scope

These Basic Award Criteria apply to sprayable, plastically processable sealants in accordance with DIN EN ISO 6927 (joint sealants): Products used to fill joints that are sealed by the material sticking to the edges of the joint.
They only apply to sealants that are designed for interior use.
Therefore, these Basic Award Criteria apply to[1]:

- Water-based, acetate-based silicone joint sealants and neutral curing silicones (except for oxime curing systems),
- Acrylate-based joint sealants,
- Polyurethane dispersion-based joint sealants,
- Silane modified polymer-based joint sealants (SMP).

[1] The Environmental Label Jury may include other sealants in the scope of validity of the Basic Award Criteria on the recommendation of the Federal Environmental Agency (Umweltbundesamt).

3 Requirements

The end products named under Paragraph 2 can be labelled with the environmental label illustrated on the first page of these Basic Award Criteria if they fulfil the following requirements:

3.1 General substance requirements

Observance of European and German chemical law, as well as standard rules for the sector, is a prerequisite (especially the REACH Regulation Annex XVII, POP Regulation Annex I, CLP Regulation, the German Ordinance on Banned Chemicals (ChemVerbotsV), the German Ordinance on Hazardous Substances (GefStoffV), VdL Guideline 01, Directive 92/112/EEC, the 25th German Federal Immission Protection Ordinance (BImSchV), the Biocidal Products Regulation (BPV) and the German Packaging Act (VerpackG), etc.)2
In addition, the sealant may not contain any substances with the following properties as a constituent component[3]:

a) Substances which are identified as particularly alarming under the European Chemicals Regulation REACH[4] and which have been incorporated into the list drawn up in accordance with Article 59, Paragraph 1 of the REACH Regulation (so-called "list of candidates").[5]
b) Substances that according to the CLP Regulation[6] have been classified in the following hazard categories or which meet the criteria for such classification[6],[7]:
   - carcinogenic in categories Carc. 1A or Carc. 1B
   - germ cell mutagenic in categories Muta. 1A or Muta. 1B
   - reprotoxic (teratogenic) in categories Repr. 1A or Repr. 1B
   - acute toxicity (poisonous) in categories Acute Tox. 1, Acute Tox. 2,
   - specific target organ toxicity in categories STOT SE 1 or STOT RE 1
   - the corresponding H phrases for the hazard classes and categories can be found in Appendix B.
c) Substances that are classified in TRGS 905[8] as:

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2 If substance restrictions from other regulations also apply to the specific product, these also need to be observed.
3 Constituent components are substances added to the product as such or as part of a mixture in order to achieve or influence certain product properties and those required as chemical cleavage products for achieving the product properties. This does not apply to residual monomers that have been reduced to a minimum. An exception is also made for methanol as a by-product of SMP sealants.
4 Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), in short REACH regulation (Registration, Evaluation And Authorisation Of Chemicals).
5 The version of the list of candidates at the time of application is valid. The list of candidates in its relevant version can be found at: https://echa.europa.eu/de/candidate-list-table.
6 The harmonized classifications and labellings of dangerous substances can be found in Annex VI, Part 3 of the CLP Regulation. Furthermore, a comprehensive classification and labelling inventory, which also includes all of the self-classifications of hazardous substances made by manufacturers, has been made available to the public on the website of the European Chemicals Agency: ECHA classification and labelling inventory.
7 Substances with other hazardous properties (i.e. CMR substances in category 2) are not excluded here but are instead restricted by the emissions evaluation according to the AgBB procedure (see Paragraph 3.3 Indoor air quality).
8 TRGS 905, directory of carcinogenic, mutagenic or teratogenic substances from the Committee for Hazardous Substances (AGS): TRGS 905. The current version at the time of application is valid (last amended in May 2018). The TRGS lists such CMR substances that have not received harmonised

- carcinogenic (K1A, K1B),
- mutagenic (M1A, M1B),
- reprotoxic (R_F1A, R_F1B, R_D1A, R_D1B).

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1. In addition, the applicant shall state the brand names and suppliers of all individual primary products for the sealant, as well as their proportions and function in the manufactured sealant (Annex 2). To comply with the requirements, declarations from the manufacturer or distributor of the primary products (Annex 3), as well as the corresponding safety data sheets for the sealant and the primary products used (Annex 4), must be submitted.

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3.2 Environmentally hazardous components

a) The end product may not be classified with the H phrase H400. In addition, substances labelled and classified with the H phrases H410, H411, H412 are restricted in the sealant based on the following calculation formula:

- M * 100 * H410 + 10 * H411 + H412 ≤ 11.0 %

Whereby the following is valid:

- H410 represents the concentration of those substances classified as H410 in %
- H411 represents the concentration of those substances classified as H411 in %
- H412 represents the concentration of those substances classified as H412 in %
- M is the multiplication factor for H410 in combination with the LC50, EC50 or NOEC value for the substance and the biodegradability according to the classification rules in the CLP Regulation

If no information on the hazard to water of a substance is available (in the form of data on toxicity, biodegradability or bioaccumulation), a worst case scenario must be applied, i.e. H410 hazardous to water using the multiplication factor of 1000. In-can preservatives according to Appendix A are exempt from this rule.

Compliance verification

The applicant shall verify compliance with the requirements by submitting declarations and the calculation from the manufacturer or distributor of the primary products (Annex 3), as well as the corresponding safety data sheets for the sealant and the primary products used (Annex 4).

classifications up to now or where the AGS has come to a different classification. The CMR complete list published by the Institute for Occupational Safety and Health of the German Social Accident Insurance can also be used as a reference tool: https://www.reach-clp-biozid-helpdesk.de/de/Glossar/C-D/CMR.html.

3.3 Indoor air quality

Based on the "Health-related Evaluation Procedure for Volatile Organic Compounds Emissions from Building Products"[9] developed by the Committee for Health-Related Evaluation of Building Products, products according to Paragraph 2 must not exceed the following emission values in the test chamber:

Table 1: Emissions values

	Requirements	
Substance	**3 days**	**Final value**[10] **(28 days)**
Total organic compounds within the retention range > C_6 – C_{16} (TVOCspez)	≤ 2000 µg/m³	≤ 300 µg/m³
Total organic compounds within the retention range > C_{16} – C_{22} (TSVOC)	-	≤ 30 µg/m³
C-substances [11]	≤ 10 µg/m³ **Total**	≤ 1 µg/m³ **Per individual substance**
Total VOC without LCI [12] [13]	-	≤ 100 µg/m³
R-value [13]	-	≤ 1 14
Formaldehyde	-	≤ 0.05 ppm

The taking, storage and transport of the samples, the production and preparation of the test specimens and the emissions measurement must be completed in accordance with DIN EN 16516. In accordance with the AgBB requirements, the total volatile compounds (TVOC) must be determined in accordance with Section 8.2.6.1, Paragraph 2, of the DIN EN 16516 standard (target compounds and non-target compounds, identified and unidentified compounds) with TVOCspez. For an average-sized living room with an air exchange rate of 0.5/h, the requirements are designed to limit the contribution made by sealants to the VOC content in the indoor air after 28 days to 0.3 mg/m³. The test can be terminated at an early stage (at the earliest on the 7th day after preparing the test sample) if the permissible emission values for the 28th day have been reached early and no significant increase in the concentration of any of the identified substances has been observed in comparison to the measurement on the 3rd day.
The optional odour emission test according to Paragraph 3.4 should be carried out in combination with the test for indoor air quality.

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[9] "Health-related Evaluation Procedure for Volatile Organic Compounds Emissions (VOC) from Building Products", Federal Environmental Agency website, http://www.umweltbundesamt.de/themen/gesundheit/kommissionen-arbeitsgruppen/ausschuss-zur-gesundheitlichen-bewertung-von#textpart-1

[10] Testing must be carried out in test chambers with a volume of 20 l to 1 m³ and an area-specific flow rate of 72 m³/m² h. The sealant mass is inserted into inert glass or stainless steel sections (section width = 10 mm, thickness of the sealant layer = 3 mm).

[11] C-substance = carcinogenic substances; according to classifications Carc. 1A classification Carc. 1B according to the EU classifications or TRGS 905

[12] Including non-identifiable substances.

[13] LCI = Lowest Concentration of Interest.

Compliance verification

The applicant shall submit a test report according to the DIN EN 16516 standard verifying compliance with this requirement. The test report must be produced by a testing institution[14],[15] recognised for this test by BAM (Bundesanstalt für Materialforschung und Prüfung (Federal Institution for Material Research and Testing). The format of the test report must be based on DIN EN 16516 [Section 10], while the AgBB procedure should be carried out using the ADAM template.

3.4 Odour test (optional)

It is permitted to advertise the characteristic "low odour" on the container. If this characteristic is advertised, however, a test of the odour emissions must be carried out in combination with the emissions test according to Paragraph 3.3 Indoor air quality. The sealant must not display an odour intensity of more than 7 pi after 28 days if the product is advertised with the phrase "low odour".

Compliance verification

The applicant shall submit a test report in accordance with the DIN ISO 16000-2814 standard in combination with VDI 4302.

3.5 Special requirements for specific substances

3.5.1 Pigments

Pigments containing lead compounds may not be added to the sealant. The pigment may not contain more than 200 ppm of lead as process-related, technically unavoidable (natural or production-related) impurities.

3.5.2 Alkylphenol ethoxylates

Products containing alkylphenol ethoxylates (APEO) and/or their derivatives may not be added to the sealant.

3.5.3 Plasticisers

Products that contain plasticising substances from the group of phthalates or group of organophosphates may not be added to the sealant.

3.5.4 Perfluorinated and polyfluorinated chemicals

It is not permitted for any perfluorinated or polyfluorinated chemicals (PFC), such as fluorocarbon resins and fluorocarbon emulsions, perfluorinated surfactants, perfluorinated sulfonic and carboxylic acids, and substances that could be broken down into these chemicals to be added to the product. This also applies to primary products treated with PFCs.

[14] DIN ISO 16000-28 – Indoor air– Part 28: Determination of odour emissions from building products using test chambers

3.5.5 Organotin compounds

The use of organotin compounds is not permitted. An exemption is the use of organotin compounds according to recommendation XV from the BfR. Silicone[15] as a catalyst for the cross-linking reaction of sealants.

Verifications for Paragraphs 3.5.1 - 3.5.5

The applicant shall verify compliance by submitting declarations from the manufacturer or distributor of the primary products (Annex 3), as well as the corresponding safety data sheets for the sealant and the primary products used (Annex 4).

3.5.6 Additional requirements for sealants designed for contact with food and drinking water

Sealants that are suitable for contact with food (e.g. kitchen silicone) and/or drinking water and which are identified as such on the container or in the technical data sheet must be accompanied by a current declaration of conformity from a certified testing laboratory.

Compliance verification:

The applicant shall submit a valid test certificate according to the corresponding positive list in recommendation XV from the German Federal Institute for Risk Assessment for the sealant designed for contact with food (consumer products in the sense of the German Food and Feed Code (LFGB) and the Ordinance on the Quality of Water intended for Human Consumption (TrinkwV) Section 17 (2), Sentence 1). In the case of sealants designed for contact with drinking water, the applicant shall submit a current test certificate according to the KTW Guideline and DIN EN 16421 Method 1 or 2 (microbiological).

3.5.7 Preservation

The sealants according to Paragraph 2 must not contain any biocides. Exempted are micro-biocides used as in-can preservatives that are stated on the "List of approved in-can preservatives" (enclosed with the application documentation) at the concentrations stated there, as well as biocides used to protect sanitary sealants against mould that are listed in Appendix A of the Basic Award Criteria DE-UZ 123 at the concentrations stated there.

Compliance verification:

The applicant shall declare compliance with the requirement in Annex 1 to the contract according to DE-UZ 123.

3.6 Recycling and disposal

[15] Database "BfR Recommendations on Food Contact Materials"

With regards to recycling and disposal, no material protection agents (fungicides, insecticides, flame-retardants) and no halogenated organic compounds may be added to the sealants. Exempted are substances according to Paragraph 3.5.7 which are used for in-can preservation to protect against microbial infestation, as well as flame retardants using inorganic ammonium phosphates (diammonium phosphate, ammonium polyphosphate etc.), other water-releasing minerals (aluminium trihydrate or similar) or expandable graphite for flame retarding purposes.

Compliance verification:

The applicant shall declare compliance with the requirement in Annex 1 to the contract according to DE-UZ 123.

3.7 Fitness for use

The sealants according to Paragraph 2 must fulfil the usual quality requirements with respect to fitness for use for the respective product group.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract according to DE-UZ 123.

3.8 Advertising claims

The type of sealant according to Paragraph 2 must be stated on the container together with the product designation.

- Advertising claims must not include claims in the sense of Article 25 (4) of the CLP Regulation (EC) No. 1272/2008[6] that could play down the risks such as e.g. "non-toxic", "non-harmful to health" or similar claims.
- Advertising claims that contain terms such as "Bio", "Eco", "Natural", "Fungal" or "Nano" etc. as part of the name or description are not permitted.
- If the product complies with the requirement for the odour test in Paragraph 3.4, it is permitted to advertise the sealant with the claim "low odour".
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Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract and submit both a safety data sheet and a technical data sheet.
The applicant shall declare compliance with the requirement in Annex 1 to the contract according to DE-UZ 123.

3.9 Declaration and consumer information

In addition to the obligatory P-phrases in accordance with the CLP Regulation (EC) No. 1272/2008, the following information must also be stated on the container and the technical data sheet in an easy to read form (comparable wording / P-phrases are permitted):

- "Keep out of the reach of children"
- "Ensure good ventilation during application and drying"

- "Do not eat, drink or smoke when applying this product"
- "In case of contact with skin or eyes, rinse immediately with plenty of water"
- "Only pass on empty containers for recycling. Dried product residues can be disposed of as household waste"
- "The product contains:…….(indication of the name(s) of the preservative(s) according to Appendix A); Information for persons with allergies is available on telephone number……."[16]

The container must contain a clear reference to the technical data sheet, information on where it can be found and a telephone number for the manufacturer where the consumer can receive further information.
In addition, a corresponding reference must be included on the container if the product contains a preservative and a telephone number for the manufacturer where the consumer can receive further information must be provided. If no preservatives have been used, the phrase "preservative-free" may be included on the container.

Compliance verification

The applicant shall declare compliance with the requirement and submit the corresponding technical data sheet and the container text.

4 Applicants and Parties Involved

Manufacturers of final products according to Paragraph 2 shall be eligible for application.

Parties involved in the award process are:
- RAL gGmbH to award the Blue Angel Environmental Label,
- the federal state being home to the applicant's production site,
- Umweltbundesamt (German Environmental Agency) which after the signing of the contract receives all data and documents submitted in applications for the Blue Angel in order to be able to further develop the Basic Award Criteria.

5 Use of the Environmental Label

The use of the Environmental Label by the applicant is governed by a contract on the use of the Environmental Label concluded with RAL gGmbH.

Within the scope of such contract, the applicant undertakes to comply with the requirements under Paragraph 3 while using the Environmental Label.

Contracts on the Use of the Environmental Label are concluded to fix the terms for the certification of products under Paragraph 2. Such contracts shall run until December 31, 2023.
They shall be extended by periods of one year each, unless terminated in writing by March 31, 2023 or March 31 of the respective year of extension.
After the expiry of the contract, the Environmental Label may neither be used for labelling nor for advertising purposes. This regulation shall not affect products being still in the market.

[16] Hotline at fixed-line telephone costs

The applicant (manufacturer) shall be entitled to apply to RAL gGmbH for an extension of the right to use the ecolabel on the product entitled to the label if it is to be marketed under another brand/trade name and/or other marketing organisations.

The Contract on the Use of the Environmental Label shall specify:

- Applicant (manufacturer)
- Brand/trade name, product description
- Distributor (label user), i.e. the above-mentioned marketing organisations.

Appendix A List of approved in-can preservatives - NEW - valid from 01.12.2020

The following active substances or active substances combinations can alternatively be used in a total of ≤ 400 ppm from the individual active substances for in-can preservation in low-emission sealants for interior use. In addition, the preservation of the preliminary products must be dimensioned so that the preservation of the end product corresponds to Appendix A. Labeling the product with H317 is not permitted.

Allowed preservation	**CAS No.**	**Content [ppm]**
DBDCB	35691-65-7	400
BIT	2634-33-5	400
Bronopol	52-51-7	200
Sodium pyrithione	3811-73-2	200
Zinc pyrithione	13463-41-7	200
Combination CIT/MIT (3:1)	55965-84-9	Total < 15
CIT[17]	26172-55-4	
TiO_2 AgCl in relation to AgCl	7783-90-6	100
IPBC	55406-53-6	80
Not allowed active substances[18]		
Total from		< 15
BBIT	4299-07-4	
MIT	2682-20-4	
OIT	26530-20-1	
DTBMA	2527-58-4	

Only those substances (active substances or biocidal products) may be used as preservatives for which an active substance dossier on the assessment as in-can preservatives (product type 6) has been submitted within the scope of the Biocidal Products Regulation ((EU) No 528/2012). If following the assessment an inclusion of the active substance in the Union List of approved active substances for product type 6 is denied the use of these substances shall no longer be permitted. This also applies to formaldehyde-releasing agents.

Exemption for sanitary sealants

Alternatively, the following substances or substance combinations may be used for the purposes of in-can preservation or to protect sanitary sealants against mould. The manufacturer of the sealant may not add more than the stated quantity:

Active Substances	**Content in the sanitary sealant**
Thiabendazol	400 ppm

[17] Provisional authorisation of the biocidal product ACTICIDE C1 until 16 March 2024.
[18] The active substances must not be actively added for in-can preservation of Blue Angel products.

Admission process for other substances

Other preservatives may be used if a MAK value is available and/or sufficient data regarding inhalation toxicology and analytics on the pure active substance and, if applicable, relevant degradation products, isomers and impurities, as well as other by-products of the substance and/or sufficient examinations relating to inhalative exposure are submitted to the Federal Environmental Agency for evaluation and setting of a maximum content.

Appendix A List of approved in-can preservatives - OLD - valid until 01.12.2020

Alternatively, the following active substances or active substance combinations may be used for in-can preservation:

Active Substances/Active Substances Combination	Content
a) Titanium dioxide/silver chloride	≤ 100 ppm in relation to silver chloride
b) 2-Methyl-2H-isothiazol-3-one (MIT) / 1,2-benzisothiazol-3(2H)-one (BIT) in a ratio of 1:1	≤ 200 ppm
c) 5-Chloro-2-methyl-4-isothiazolin-3-one (CIT) / 2-methyl-2H-isothiazolin-3-one (MIT) in a ratio of 3:1	≤ 15 ppm
d) 3-Jodo-2-propinyl butylcarbamate (IPBC)	≤ 80 ppm
e) 1,2- Benzisothiazol-3(2H)-one (BIT)	≤ 200 ppm
f) 2-Bromo-2-nitropropane-1,3-diol (BNPD)	≤ 200 ppm
g) BNPD[19] + CIT/MIT (3:1)[20]	≤ 130 ppm + ≤ 15 ppm
h) BNPD[19] + CIT/MIT (3:1)[20]	≤ 150 ppm + ≤ 10 ppm
i) BNPD[19] + CIT/MIT (3:1)[20]	≤ 170 ppm + ≤ 5 ppm
j) MIT/BIT[21] (1:1) + CIT/MIT (3:1)[20]	≤ 150 ppm + ≤ 12,5 ppm
k) MIT/BIT[21] (1:1) + CIT/MIT (3:1)[20]	≤ 125 ppm + ≤ 15 ppm
l) 1,2-Dibromo-2,4-dicyanobutane (DBDCB)	≤ 500 ppm
m) BIT[22] + CIT/MIT (3:1)[20]	≤ 150 ppm + ≤ 12,5 ppm
n) BNPD[19] + MIT/BIT[21] (1:1)	≤ 120 ppm + ≤ 75 ppm
o) Zinc pyrithione (ZNP) + BIT[22,23]	≤ 100 ppm + ≤ 100 ppm
p) Zinc pyrithione (ZNP) + MIT/BIT[21] (1:2 to 2:1)	≤ 50 ppm + ≤ 150 ppm
q) BNPD[19] + BIT[22]	≤ 100 ppm + ≤ 100 ppm
r) Sodium pyrithione (NaP) + BIT[22]	≤ 50 ppm + ≤ 150 ppm
s) N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine (CAS 2372-82-9) + MIT/BIT[21] (1:1)	≤ 81 ppm + ≤ 150 ppm
t) MIT/BIT[21] (1:1) + silver chloride	≤ 185 ppm + ≤ 15 ppm

Only those substances (active substances or biocidal products) may be used as preservatives for which an active substance dossier on the assessment as in-can preservatives (product type 6) has been submitted within the scope of the Biocidal Products Regulation ((EU) No 528/2012). If following the assessment an inclusion of the active substance in the Union List of approved

[19] BNPD = see f)
[20] CIT/MIT = see c)
[21] MIT/BIT = see b)
[22] BIT = see e)
[23] Zinc oxide up to maximal 500 ppm is additional permitted as technical adjuvant

active substances for product type 6 is denied the use of these substances shall no longer be permitted. This also applies to formaldehyde-releasing agents.

Exemption for sanitary sealants

Alternatively, the following substances or substance combinations may be used for the purposes of in-can preservation or to protect sanitary sealants against mould. The manufacturer of the sealant may not add more than the stated quantity:

Active Substances	Content in the sanitary sealant
Thiabendazol	400 ppm

Admission process for other substances

Other preservatives may be used if a MAK value is available and/or sufficient data regarding inhalation toxicology and analytics on the pure active substance and, if applicable, relevant degradation products, isomers and impurities, as well as other by-products of the substance and/or sufficient examinations relating to inhalative exposure are submitted to the Federal Environmental Agency for evaluation and setting of a maximum content.

The applicant shall provide justification for the use of the preservatives and submit details on how the minimum required quantity of preservative preparation has been determined. This value may not be exceeded in the sealant.

To facilitate the application process for the admission of a new substance, the Federal Environmental Agency has prepared a checklist which is designed to help the applicant compile the required data.

Appendix B Excluded hazard classes and categories

The following table assigns the hazard categories stated in Paragraph 3.1 3.1General substance requirements to the corresponding hazard statements (H Phrases) according to the CLP Regulation (EC) No. 1272/2008.

Hazard categories	H Phrases	Hazard statements
Carcinogenic substances		
Carc. 1A	H350	May cause cancer.
Carc. 1B	H350	May cause cancer.
Carc. 1A, 1B	H350i	May cause cancer if inhaled.
Germ cell mutagenic substances		
Muta. 1A	H340	May cause genetic defects.
Muta. 1B	H340	May cause genetic defects.
		Reprotoxic (teratogenic) substances
Repr. 1A, 1B	H360D	May damage the unborn child.
Repr. 1A, 1B	H360F	May damage fertility.
Repr. 1A, 1B	H360FD	May damage fertility. May damage the unborn child.
Repr. 1A, 1B	H360Df	May damage the unborn child. Suspected of damaging fertility.
Repr. 1A, 1B	H360Fd	May damage fertility. Suspected of damaging the unborn child.
Acute toxicity substances		
Acute Tox. 1 Acute Tox. 2	H300	Fatal if swallowed
Acute Tox. 3	H301	Toxic if swallowed
Acute Tox. 1 Acute Tox. 2	H310	Fatal in contact with skin
Acute Tox. 3	H311	Toxic in contact with skin
Acute Tox. 1 Acute Tox. 2	H330	Fatal if inhaled
Substances with specific target organ toxicity		
STOT SE 1	H370	Causes damage to organs.
STOT RE 1*	H372	Causes damage to organs through prolonged or repeated exposure.
Environmental hazards		
Aquatic acute 1	H400	Very toxic to aquatic life.
Aquatic chronic 1	H410	Very toxic to aquatic life with long-lasting effects.
Aquatic chronic 2	H411	Toxic to aquatic organisms with long-lasting effects.
Aquatic chronic 3	H412	Harmful to aquatic organisms with long lasting effects.

* If the classification and toxicological evaluation of the substance is based on the classification of the respirable fraction of the substance (dusts) and does not relate to the substance in general, classification as STOT RE 1 does not represent a criterion for exclusion in accordance with Paragraph 3.2.1 "Exclusion of Substances" (asbestos-containing dust is excluded).

Appendix C Cited legislations and standards, literature

[1] DIN EN ISO 6927 Buildings and civil engineering works - Sealants - Vocabulary (ISO 6927:2012)

[2] DIN ISO 16000-28 - Indoor air - Part 28: Determination of odour emissions from building products using test chambers
[3] DIN EN 16421 Influence of materials on water for human consumption - Enhancement of microbial growth
[4] DIN EN 16516: Construction products - Assessment of release of dangerous substances - Determination of emissions into indoor air; German version EN 16516:2017
[5] AgBB "Requirements for indoor air quality in buildings: Health-related Evaluation Procedure for Volatile Organic Compounds Emissions (VVOC, VOC and SVOC) from Building Products" (currently valid version)
https://www.umweltbundesamt.de/themen/gesundheit/kommissionen-arbeitsgruppen/ausschuss-zur-gesundheitlichen-bewertung-von#textpart-1
[6] Guideline on the hygienic assessment of organic materials in contact with drinking water (KTW Guideline) https://www.umweltbundesamt.de/dokument/leitlinie-zur-hygienischen-beurteilung-von-1
[7] TRGS 905, directory of carcinogenic, mutagenic or teratogenic substances from the Committee for Hazardous Substances (AGS): TRGS 905.