

Identification of alternatives to IPBC

Study on the identification of biocidal products not containing IPBC, authorised according to the EU Biocidal Products Regulation (BPR) within wood preservation applications (product-type PT 8)

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1 Abstract

Biocidal products authorised according to the EU Biocidal Products Regulation (BPR) within product-type “PT 8- Wood Preservatives”, were investigated for alternatives not containing the biocidal active substance IPBC (3-iodo-2-propynyl butylcarbamate, CAS: 55406-53-6). Biocidal products authorised in the following countries were extracted from ECHA’s database on biocidal products: Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden. The search was performed one country at a time and data was extracted on the 28th of June 2024. The products were furthermore filtered to meet the following requirements:

- a) Products must not contain active substances which are considered a candidate for substitution under the BPR regulation.
- b) Products must be effective against blue stains.

Identified alternatives were compared with ten specified use cases, defined by EuroWindow to evaluate the products’ suitability within each use case.

Three product alternatives not containing IPBC and meeting the above requirements, were identified. An overview is presented below in Table 1. The three identified product alternatives only match requirements from Use Case 8, and do not meet the specifications needed for the other use cases. The identified products meet all the requirements from Use Case 8, with the exception that solvent type was not evaluated for AXIL 2000 AB-B due to an uncertainty on what type of solvent the product uses.

The first identified product, AXIL 2000 AB-B, is authorised in Belgium, Finland, Latvia, Lithuania, Poland and Sweden with an expiration date of 5th of December 2029 for all the authorisations. The product has been authorised with a national authorisation, starting in the period 2019-2024, varying depending on country. The dates for the authorisation start can be found under the conclusion for each country. The second identified product, Sinesto XT, is authorised in Germany with the authorisation starting in 2023 and expiring the 11th of December 2033. The third identified product, FKR-ACQ Extra is authorised in Spain and Portugal, with an expiration date of 31st of January 2025. The authorisation started in 2021.

The products AXIL 2000 AB-B and FKR-ACQ Extra contain substances which are under assessment for being a candidate for substitution. ECHA has been contacted regarding the status of the assessment process for the substances on the 13th of August 2024, and DHI are at the date of the report awaiting their reply.

Table 1: Identified alternative products not containing IPBC

Trade name	Countries authorised	Active substance(s)	Note
AXIL 2000 AB-B	Belgium Finland Latvia Lithuania Poland Sweden	Alkyl (C12-16) dimethylbenzyl ammonium chloride (ADBAC/BKC (C12-16))	Active substance is under assessment for being a candidate for substitution
Sinesto XT	Germany	Coco alkyltrimethyl ammonium chloride (ATMAC/TMAC) K-HDO	Contains substance(s) of concern: 2-Ethylhexanoic acid and Potassium hydroxide
FKR-ANTISAPTAIN FKR-ACQ EXTRA FKR PLUS 3	Portugal Spain	Copper hydroxide Didecyldimethyl ammonium chloride (DDAC)	Active substances are under assessment for being a candidate for substitution Contains substance(s) of concern: Propan-2-ol and 2-aminoethanol

Furthermore, a screening for substances effective against blue stain fungi and approved for use in PT 8 was conducted. The results on this can be found in Section 4.

2 Scope

EuroWindoor has scoped a study that shall identify if there are any chemical alternative biocidal active substances to IPBC in wood preservation applications on the market in the EU. EuroWindoor has defined 10 use cases, for which DHI has investigated if there are alternatives not containing IPBC. The use cases can be seen below in Table 2. The products furthermore must fulfil the following criteria:

- c) Products must be authorised in one of the following countries: Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden (one country at the time).
- d) Products must not contain active substances which are considered a candidate for substitution under the BPR regulation.
- e) Products must be effective against blue stain fungi

Table 2: Use cases as defined by EuroWindoor

	Use case No. 1	Use case No. 2	Use case No. 3	Use case No. 4	Use case No. 5	Use case No. 6	Use case No. 7	Use case No. 8	Use case No. 9	Use case No. 10
Name	Windows and doors – Industrial	Windows and doors - Professionals	Windows and doors	Construction wood - DIY	Construction wood - Professionals	Construction Wood - Industrial pressure treatment	Construction Wood - Industrial dipping	Anti-sapstain	Construction wood - Industrial	Cross-laminated-timber (CLT) elements
Descript.	Industrial manufacturing of wooden windows and doors. Most parts of the production is automatized	Manufacturing of wooden windows and doors handcrafted by professionals. Most parts of the production is semi automatized	Manufacturing of wooden windows and doors from durable wood exposed to blue stains and mould. Professional and industrial processes	First application or renovation for example carports, terraces, sidings, cladding, balconies, roof construction etc. applied by amateurs. Decorative coatings with PT 08 approval	First application or renovation for example carports, terraces, sidings, cladding, balconies, roof construction etc. applied by professionals. Decorative coatings with PT 08 approval	Industrial treatment of construction wood. Most parts of the production is automatized	Industrial treatment of construction timbers usually by dipping	Industrial treatment of construction wood against mold and blue stains. Preventive treatment applied by spraying on fresh-cut timber.	First application for example carports, terraces, sidings, cladding, balconies, roof construction etc. applied by industrial coating line. Industrial coatings with PT 08 approval	Industrial treatment of CLT usually by spraying
Use Category	Industrial	Professional	Professional + Industrial	DIY and Professional	Professional	Industrial	Industrial	Industrial	Industrial	Industrial
Efficacy	Blue stains Brown rot White rot	Blue stains Brown rot White rot	Blue stains	Blue stains Brown rot White rot	Blue stains Brown rot White rot	Blue stains Brown rot White rot	Blue stains Brown rot White rot	Blue stains Mould	Blue stains Brown rot White rot	Blue stains Brown rot White rot
Wood species	Pine, Spruce, Fir	Pine, Spruce, Fir,	Durable wood (protected against rot) with blue stain exposure	Pine, Spruce, Fir	Pine, Spruce, Fir	Pine, Spruce, Fir	Pine, Spruce, Fir	Pine, Spruce, Fir	Pine, Spruce, Fir	Pine, Spruce

Use Class	UC 2, UC 3.1 and UC 3.2	UC 2, UC 3.1 and UC 3.2	UC 2, UC 3.1 and UC 3.2	UC 2, UC 3.1 and UC 3.2	UC 2, UC 3.1 and UC 3.2	UC 2, UC 3.1 and UC 3.2	UC 2, UC 3.1 and UC 3.2	Short-term efficacy only	UC 2, UC 3.1 and UC 3.2	UC 2, UC 3.1 and UC 3.2
Solvent	Waterborne	Waterborne, solvent borne	Waterborne, solvent borne	Waterborne, solvent borne	Waterborne, solvent borne	Waterborne	Waterborne	Waterborne	Waterborne	Waterborne
Appl. method	Flow coating, spray tunnel, dipping and pressure treatment	Brush, role, manual dipping, spraying (Applied as pigmented or non-pigmented primer and topcoat)	Brush, role, manual dipping, spraying (Applied as pigmented or non-pigmented primer and topcoat)	Brush, paint roller (Applied as pigmented or non-pigmented primer and/or as topcoat)	Brush, role, manual dipping, spraying (Applied as pigmented or non-pigmented primer and/or as topcoat)	Pressure treatment	Flow coating, spray tunnel, dipping	Automated Dipping, Spraying	Spray and vacuum	Spray
Compat.	No corrosion with hardware and screws. No color modification to topcoat or paint	No corrosion with hardware and screws. No color modification to topcoat or paint	No corrosion with hardware and screws. No color modification to topcoat or paint	No corrosion with hardware and screws. No color modification to topcoat or paint	No corrosion with hardware and screws. No color modification to topcoat or paint	No corrosion with hardware and screws	No corrosion with hardware and screws. No color modification to topcoat or paint		No corrosion with hardware and screws. No color modification to topcoat or paint	No corrosion with hardware and screws. No color modification to topcoat or paint

3 Methodology

A search was run in ECHA's database on authorised products under the Biocidal Products Regulation (BPR) (<https://echa.europa.eu/da/information-on-chemicals/biocidal-products>).

The following filters were applied to fulfil the criteria under point a defined in Section 2 - Scope:

- Product-type: PT 8
- Market area: Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden (one country at the time)
- Authorisation status: Authorised

A list of approved products in each country was obtained, and data was extracted on 28th of June 2024. The extracted data from the database was not complete. Lacking information on trade names of products, active substances and target organisms was investigated from the linked product factsheet and added.

The results were then filtered for only products not containing IPBC. Below in Table 3 the results of this initial filtering can be seen. The extracted data, with filled data gaps and filtered for products excluding IPBC can be found in Appendix A.1.

Table 3: Number of products authorised in the defined countries within category PT 8 not containing IPBC.

Countries in search	No. Products
Austria	55
Belgium	49
Bulgaria	6
Croatia	9
Republic of Cyprus	3
Czech Republic	58
Denmark	13
Estonia	37
Finland	25
France	111
Germany	85
Greece	22
Hungary	32
Ireland	42
Italy	39
Latvia	56
Lithuania	11
Luxembourg	21
Malta	2
Netherlands	51

Norway	33
Poland	81
Portugal	31
Romania	4
Slovakia	44
Slovenia	29
Spain	38
Sweden	41

Further filtering for product alternatives

The results were further filtered based on active substances regarding the three following criteria:

1. Products are excluded if they contain an active substance which is candidate for substitution.
2. Products are excluded if they only contain active substances which do not target one of the following:
 - Blue stain fungi
 - Wood discolouring fungi

The following substances were identified as to not target blue stain fungi, and are used for filtering according to point 2:

- Cypermethrin (*Targets wood destroying insects*)
- Hydrogen cyanide (*Targets wood destroying or disfiguring pests*)
- Sulfuryl fluoride (*Targets termites, beetles, and pinewood nematodes*)
- K-HDO (*Protection against wood-destroying fungi (basidiomycetes as brown rot and white rot)*)
- Dazomet (*Intended use against internal decay of the poles by Basidiomycetes*)

The results from the filtering according to Point 1 and 2 can be found in Appendix A.2, and country by country in Section 5.3 to 5.30.

After filtering according to Point 1 and 2, each product's Summary of Product Characteristic (SPC) was analysed to investigate if the product is marketed and authorised for use against blue stain fungi. The identified products from this search were then evaluated by comparing the specifications in the SPC with the use cases presented in Table 2. It was specified by EuroWindow that use case 1-7 and 9-10 concern pre-treated wood and use case 8 is for fresh-cut timber.

The identified alternatives are presented in Section 5.1 and 5.2.

Investigation of alternative substances

In addition to the product search, an investigation of alternative active substances to IPBC was conducted. A search was run in ECHA's database on Biocidal Active Substances under the Biocidal Products Regulation (BPR) (<https://echa.europa.eu/da/information-on-chemicals/biocidal-products>), with the following requirements:

- Product-type: PT 8
- Approval status: Approved

The results were further filtered to not include substances which are candidate for substitution. The extracted data can be found in Appendix A.3. The assessment reports for the active substances were investigated for their efficacy against blue stain fungi. The results of this search can be found in Section 4.

4 Identified active substances targeting blue stain fungi

In the search for alternative active substances to IPBC, the following substances were identified to meet the specified criteria. DHI has not conducted an assessment of whether these substances are suitable or better alternatives than IPBC. Multiple of the substances are under review for being a candidate for substitution.

The following active substances have been identified to target blue stain fungi and are approved for use under PT 8 – Wood Preservatives. The information presented below has been obtained from the assessment reports on the substances, publicly available in ECHA's database.

- **Coco alkyltrimethylammonium chloride (ATMAC/TMAC).** ATMAC/TMAC is a review programme substance and is approved for use in PT 8. It is not a candidate for substitution. It is intended for preventive treatment against wood destroying basidiomycetes, wood discolouring fungi and soft rot fungi. The approval expires 30th of April 2028.
- **DDA Carbonate.** DDA Carbonate is approved for use in PT 8. It is not in the review programme, and a renewal of the approval is currently in progress. DDA Carbonate targets wood rotting basidiomycetes and soft rot fungi, wood discolouring sapstain, blue stain and mould fungi, and wood destroying insects. DDA Carbonate is not a candidate for substitution. The approval expires 31st of July 2025.
- **2-octyl-2H-isothiazol-3-one (OIT).** OIT is approved for use in PT8 against blue stain fungi. No products are currently marketed using OIT, according to ECHA's database. The substance is not in the review programme nor a candidate for substitution. It should be noted that the approval of OIT expires 31st of December 2027. OIT is according to the assessment report intended for use on fresh sawn timber against blue stain fungi and moulds. It is therefore most relevant for Use Case 8.
- **Potassium (E,E)-hexa-2,4-dienoate (Potassium Sorbate).** Potassium sorbate is approved for use in PT 8. It is a review programme substance but not a candidate for substitution. The approval expires 30th of November 2026. Potassium sorbate is intended for targeting wood staining fungi, with a temporary protection of the wood.
- **Granulated copper.** Granulated copper is not in the review programme and is not a candidate for substitution. It is approved for use in PT 8, in industrial timber treatment plants, with the approval expiring 31st of December 2026. In the assessment report for granulated copper, it is noted that no claim regarding efficacy against blue stain has been made but that it is well known and documented.
- **Poly(oxy-1,2-ethanediyl), α -[2-(dide- cylmethylammonio)ethyl]-.omega.- hydroxy-, propanoate (salt) (Bardap 26).** Bardap 26 is a review programme substance and is not a candidate for substitution. It is approved for use within PT 8 with an expiration date 31st of December 2027. It is intended for use against wood destroying basidiomycetes, wood boring insects and wood staining molds

including: *Aureobasidium pullulans*, *Sclerophoma pityopila*, *Ophistostoma piliferum*, *Aspergillus niger*, *Aspergillus terreus*, *Chaetomium globosum*, *Paecilomyces variotii*, *Penicillium funiculosum*, *Trichoderma viridae*. Bardap 26 has the status as expired in ECHA's database. ECHA was contacted regarding this, and they have communicated that Bardap 26 has been subject to a name change and thus is flagged as expired. The updated name of the substance is: Reaction mass of N,N-didecyl-N-(2-hydroxyethyl)-N-methylammonium propionate and N,N-didecyl-N-(2-(2-hydroxyethoxy)ethyl)-N-methylammonium propionate and N,N-didecyl-N-(2-(2-(2-hydroxyethoxy)ethoxy)ethyl)-N-methylammonium propionate. The expiration date of the approval is the same.

The following active substances have been identified to target blue stain fungi, and are approved for use under PT 8 – Wood Preservatives, but are under assessment for being a candidate for substitution:

- **Basic copper carbonate.** Basic copper carbonate is currently under assessment for being a candidate for substitution. It is approved for use in PT 8 with a renewal in progress. It is approved for use against wood rotting fungi and wood boring beetles but, in the assessment report for Basic Copper Carbonate, it is noted that while there is no claim concerning the efficacy of copper on blue stain it is known and documented.
- **Copper (II) Oxide.** Copper (II) Oxide is approved for use in PT 8 with a renewal in progress. Copper (II) Oxide is currently under assessment for being a candidate for substitution. In the assessment report for Copper (II) Oxide, it is noted that while there is no claim concerning the efficacy of copper on blue stain it is known and documented.
- **Alkyl (C12-16) dimethylbenzyl ammonium chloride (ADBAC/BKC (C12-16)).** ADBAC/BKC is approved for use in PT 8, with an intended use against wood destroying fungi, wood staining molds and wood boring insects. It is currently under assessment for being a candidate for substitution. A renewal of the approval is currently in progress.
- **Didecyldimethylammonium chloride (DDAC)** DDAC is approved for use in PT 8, with a renewal currently in progress. This substance is furthermore currently under assessment for being a candidate for substitution. DDAC is intended for use against wood destroying basidiomycetes, wood boring insects and the following wood staining moulds: *Aureobasidium pullulans*, *Sclerophoma pityopila*, *Ophistostoma piliferum*, *Aspergillus niger*, *Aspergillus terreus*, *Chaetomium globosum*, *Paecilomyces variotii*, *Penicillium funiculosum* and *Trichoderma viridae*, according to the assessment report for the substance.

5 Results – Product alternatives

In the following section the found alternative products not containing IPBC, meeting the requirements specified in the scope are presented and compared with the specified use cases from Table 2.

Below in Table 4, an overview of the results found in the study are presented. The table includes the number of identified alternatives which meet all the criteria specified in Section 2 and 3. A further elaboration for each country-specific search is further included in Sections 5.3 to 5.30. The identified alternative products are summarized in Section 5.1. The specifications of the identified product alternatives and the evaluation thereof can be found in Section 5.2.

Table 4: Number of authorised alternative biocidal products not containing IPBC per country.

The alternative biocidal products which meet the requirements in Section 3 are included.

Countries in search	No. Alternatives
Austria	0
Belgium	1
Bulgaria	0
Croatia	0
Republic of Cyprus	0
Czech Republic	0
Denmark	0
Estonia	0
Finland	1
France	0
Germany	1
Greece	0
Hungary	0
Ireland	0
Italy	0
Latvia	1
Lithuania	1
Luxembourg	0
Malta	0
Netherlands	0
Norway	0
Poland	1
Portugal	1
Romania	0
Slovakia	0
Slovenia	0
Spain	1
Sweden	1

5.1 Summary – Product alternatives

The following products were identified to fulfil the criteria in Section 2 and 3.

Table 5: Overview of identified product alternatives not containing IPBC.

Trade name	Countries authorised within	Active substance(s)	Relevant Use cases
AXIL 2000 AB-B	Belgium; Finland; Latvia; Lithuania; Poland; Sweden	Alkyl (C12-16) dimethylbenzyl ammonium chloride (ADBAC/BKC (C12-16))	Alternative within Use Case 8.
Sinesto XT	Germany	Coco alkyltrimethylammonium chloride (ATMAC/TMAC) K-HDO	Alternative within Use Case 8.
FKR-ANTISAPSTAIN FKR - ACQ EXTRA FKR PLUS 3	Portugal; Spain	Copper hydroxide Didecyltrimethylammonium chloride(DDAC)	Alternative within Use Case 8.

5.2 Evaluation of product alternatives

In the following section detailed product information on the three identified alternatives is presented along with the comparison with the use cases.

5.2.1 AXIL 2000 AB-B

AXIL 2000 AB-B was identified as a product meeting all the requirements in Section 3. The product is authorised in Belgium, Finland, Latvia, Lithuania, Poland and Sweden, with national authorisations. The SPCs from the different countries were compared, but minimal differences between the authorisations were found. In Table 6, an overview of the information from the SPCs and the assessment report is presented. The product contains the substance ADBAC/BKC which is under assessment for being a candidate for substitution. ECHA has been contacted regarding the status of this assessment on the 13th of August 2024, and DHI are at the date of the report awaiting their reply.

Table 6: Information on product AXIL 2000 AB-B

Product information has been obtained from the Belgian SPC (en) and the Finish SPC.

Tradename	AXIL 2000 AB-B
Active substances	Alkyl (C12-16) dimethylbenzyl ammonium chloride (ADBAC/BKC (C12-16)) CAS: 68424-85-1
Non- active substances	None specified

Contains substances of concern	No
Field of use	Indoor; Freshly sawn timber (according to CEN/TS 15082:2005) It acts against sapstain and moulds on fresh-cut wood.
User	Industrial; Professional (Finland only) *
Use class	1; 2;
Target organisms	Scientific name: <i>Aspergillus versicolor</i> Common name: Mould fungi Development stage: Spores and spore producing structures. Scientific name: <i>Ceratocystis spp.</i> Common name: Sapstain fungi Development stage: Spores and spore producing structures
Application Method	Open system: dip treatment
Authorised use	Wood preservative intended to preventive treatment of fresh-cut wood against sapstain and moulds. Wood treated with product can be used in UC 1, UC 2 (e.g. furniture and wood panelling) and on the pallets only. The product is authorised for the treatment of wood intended to come into indirect contact with food and/or feeding stuff. **
Corrosive	No
Type of formulation	Emulsifiable Concentrate
Solvent	Uncertain ***
Other	Active substance is under assessment for being a candidate for substitution.

*According to the Finnish SPC, the product is authorised both for professional and industrial use.

**Latvian and Polish SPC does not specify authorisation for contact with food.

*** There is some uncertainty regarding the solvent type, as the formulation type is emulsifiable concentrate but the SPC for the product specifies a dilution.

The product specifications for AXIL 2000 AB-B, was compared with the provided use cases by EuroWindoor presented in Table 2. Only the specified Use Case 8 is for fresh-cut timber the remaining use cases are concerning pre-treated wood. As AXIL 2000 AB-B is approved for treatment of fresh cut timber, it is only a suitable alternative for this use case. The product fits with all the specified requirements for Use Case 8, except for solvent type which we were unsure about. It should be noted that the product is applied by dipping and does therefore only meet one of the application methods specified in Use Case 8. The individual evaluation for each specific use case is seen in the table below.

Table 7: Evaluation of product AXIL 2000 AB-B

Use Case	Suitability	Note
1	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
2	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
3	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
4	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
5	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
6	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
7	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
8	Alternative	Fits all specified requirements. Deviation: Applied with dipping (use case defines dipping and spraying). Uncertain whether solvents are the same.
9	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
10	Not suitable alternative	The product is intended for fresh wood, the use case defines it for cross-laminated-timber.

5.2.2 Sinesto XT

Sinesto XT was identified as a product meeting all the requirements in Section 3. The product is authorised in Germany. It should be noted that the product Sinesto XT, is not registered in the ECHA database with a tradename and does therefore not appear in search on the product name. The trade name has been obtained from the product assessment report of the product.

Sinesto XT is approved for two different uses, with all the same authorisations except the application method which is either fully automated dipping or spraying. The comparison with the use cases is therefore combined for the two approved uses. An overview of the information given in the SPC can be found below in Table 8.

Table 8: Information on product Sinesto XT.

Based on SPC and assessment report of the product

Tradename	Sinesto XT Korasit AS-O
Active substance	Coco alkyltrimethylammonium chloride (ATMAC/TMAC) CAS: 61789-18-2 K-HDO CAS: 66603-10-9
Non-active substance	2-Ethylhexanoic acid Potassium hydroxide
Contains substances of concern	Yes: 2-Ethylhexanoic acid Potassium hydroxide
Field of use	Indoor For temporary, preventative protection of fresh sawn timber and wooden pallets against blue stain fungi and wood discoloring fungi during drying, storage or transport.
User	Industrial /professional
Use class	1; 2*
Target organisms	Scientific name: wood discolouring fungi Common name: blue stain fungi, mold fungi Development stage: No information
Application Method	Fully automated dipping or spraying
Authorised use	Preventive, temporary protection of freshly sawn timber and wooden pallets
Corrosive	No
Formulation	SL
Type of solvent	Water-based

*From assessment report. The SPC does not mention use class or exposure to weathering.

The product specifications for Sinesto XT, was compared with the provided use cases by EuroWindow presented in Table 2 . Only the specified Use Case 8 is for fresh-cut timber the remaining use cases are concerning pre-treated wood. As Sinesto XT is approved for treatment of fresh cut timber and wooden pallets, it is only a suitable alternative for this use case. The product fits with all the specified requirements for Use Case 8. The individual evaluation for each specific use case is seen below in Table 9.

Table 9: Evaluation of product Sinesto XT.

Use Case	Suitability	Reason
1	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
2	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
3	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
4	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
5	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
6	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
7	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
8	Alternative	Fits all specified requirements.
9	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
10	Not suitable alternative	The product is intended for fresh wood, the use case defines it for cross-laminated-timber.

5.2.3 FKR-ACQ EXTRA

FKR-ACQ EXTRA is approved for multiple uses. Only the use wherein blue stain is the target has been included here. The product is authorised in Portugal and Spain, with national authorisations. Both SPCs were investigated and found to only have minor differences. The product contains the substances DDAC and Copper hydroxide which are both under assessment for being a candidate for substitution. ECHA has been contacted regarding the status of these assessments on the 13th of August 2024, and DHI are at the date of the report awaiting their reply.

Table 10: Information on product FKR-ACQ EXTRA.

Based on SPC for Portugal and Spain, and the assessment report.

Tradename	FKR- ANTISAPSTAIN FKR - ACQ EXTRA FKR PLUS 3
Active substance	Copper hydroxide CAS: 20427-59-2 Didecyldimethylammonium chloride (DDAC)

	CAS: 7173-51-5
Non-active substances	2-aminoethanol propan-2-ol
Contains substances of concern	Yes: Propan-2-ol 2-aminoethanol
Field of use	Indoor, Outdoor - Green timber
User	Industrial and trained professional (only in Spain*)
Use class	Not specified (see mitigation measures)
Target organisms	Scientific name: Blue stain fungi Common name: Blue stain fungi Development stage: Mould fungi
Application Method	Open system: dip treatment
Authorised use	Temporary preventive wood preservative for green timber. Protection of freshly felled lumber against colonization by blue stain and sapstains.
Corrosive?	No
Type of formulation	SL- Soluble Concentrate
Solvent	Water based**
Other requirements/instructions	The product must not be mixed with other products simultaneously Do not apply the product to timber that, once installed, may affect soil or groundwater. The product may only be applied to wood, which will be protected from weather and not to be used above or close to surface water or in direct contact with soil.
Appearance	Dark-blue opaque liquid.
Other	Both active substances are under assessment for being a candidate for substitution.

*Portuguese SPC only mentions authorisation for industrial use, whereas the Spanish SPC specifies authorisation for both industrial and trained professional users.

**The assessment report notes that the product is water based and the SPC specifies a required dilution. However, 2-aminoethanol is in the assessment report noted as a solvent. It is assumed the product is water-based.

The product specifications for FKR-ACQ EXTRA, was compared with the provided use cases by EuroWindow presented in Table 2. Only the specified Use Case 8 is for fresh-cut timber. The remaining use cases are concerning pre-treated wood. As FKR-ACQ EXTRA is approved for treatment of fresh cut timber, it is only a suitable alternative for this use case. The product fits with all the specified requirements for Use Case 8. It should be noted that the product is applied by dipping and does therefore only meet one of the application methods specified in Use Case 8.

The individual evaluation for each specific use case is seen in the table below:

Table 11: Evaluation of product FKR-ACQ EXTRA.

Use Case	Suitability	Note
1	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
2	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
3	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
4	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
5	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
6	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
7	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
8	Alternative	Fits all specified requirements. Deviation: Applied with dipping (use case defines dipping and spraying).
9	Not suitable alternative	Product is for fresh wood, use case is for pre-processed wood.
10	Not suitable alternative	The product is intended for fresh wood, the use case defines it for cross-laminated-timber.

5.3 Austria

55 authorised biocidal products not containing IPBC was found in the initial search for Austria, further reducing the results using the criteria specified in Section 3, resulted in the following four biocidal products:

Table 12: Filtered list of products authorised in Austria.

Trade name	Active substance
Tanasote S40	Copper hydroxide DDACarbonate Penflufen
Wolmanit CX-8M Wolmanit CX-8WB	Basic Copper carbonate Cu-HDO
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO
Korasit MS KULBASAL MS	Bardap 26

Wolmanit CX-8M | Wolmanit CX-8WB and Wolmanit CX-8F are in the product assessment report noted not to be effective against blue stain fungi, and their SPCs also do not specify blue stain as a target organism. The SPCs for the remaining two products do not specify blue stain fungi as a target organism either but are, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi.

5.3.1 Conclusion

There are no available alternative biocidal products within the specified requirements authorised in Austria, which are marketed to target blue stain fungi.

5.4 Belgium

49 authorised biocidal products not containing IPBC was found in the initial search for Belgium, further reducing the results using the criteria specified in Section 3, resulted in the following 8 biocidal products:

Table 13: Filtered list of products authorised in Belgium.

Trade name	Active substance
Tanasote S40	Copper hydroxide DDACarbonate Penflufen
18V33CP-PE TX203 TRAITEMENT UNIVERSEL BOIS	Cypermethrin Penflufen
Wolmanit CX-8M Wolmanit CX-8WB	Basic Copper carbonate Cu-HDO
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO
Kemwood ACQ 2302 Korasit KS2 Korasit KSM	Basic Copper carbonate Bardap 26
AXIL 2000 AB-B	ADBAC/BKC (C12-16)
Kemwood ACQ21	Basic Copper carbonate DDAC
Hydrokoat 16 Hydrokoat 6 TECHNIWOOD 8	Cypermethrin ADBAC/BKC (C12-16) DDAC

Wolmanit CX-8M | Wolmanit CX-8WB and Wolmanit CX-8F are in the product assessment report noted not to be effective against blue stain fungi, and their SPCs also do not specify blue stain as a target organism. The SPCs for the

products Tanasote S40, 18V33CP-PE, Kemwood ACQ2302, Kemwood ACQ21 and Hydrokoat 16, do not specify blue stain fungi as a target organism either but they are, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi. Hydrokoat and Kemwood ACQ21 are furthermore reported to be corrosive to metals.

The product AXIL 2000 AB-B is the only product from the list which by investigation of SPC, is marketed for use against blue stain fungi. Further specifications on the product, evaluation and comparison with use cases can be found in Section 5.2.1, where the product is concluded to be an alternative for Use Case 8, but not a suitable alternative for the other use cases.

5.4.1 Conclusion

There is one suitable alternative biocidal product within the specified requirements authorised in Belgium: AXIL 2000 AB-B. The product is an alternative to products containing IPBC for Use Case 8. The product does not meet the required specifications and/or properties to be used for the other use cases. The product does not contain substances of concern. It should furthermore be noted that the product contains the substance ADBAC/BKC which is under assessment for being a candidate for substitution.

Table 14: Identified alternative products authorised in Belgium

Trade name	Active substance	Authorisation No.	Use Case applicable	Authorisation End date
AXIL 2000 AB-B	ADBAC/BKC (C12-16)	BE2019-0051 (National)	8	05/12/2029

5.5 Bulgaria

Six authorised biocidal products not containing IPBC was found in the initial search for Bulgaria. Further filtering according to requirements presented in Section 3, resulted in no remaining products.

5.5.1 Conclusion

There are no available alternative biocidal products within the specified requirements authorised in Bulgaria.

5.6 Croatia

Nine authorised biocidal products not containing IPBC was found in the initial search for Croatia, further reducing the results using the criteria in Section 3, resulted in one biocidal product:

Table 15: Filtered list of products authorised in Croatia.

Trade name	Active substance
Tanasote S40	Copper hydroxide DDACarbonate Penflufen

The SPC of this product does not mention targeting blue stain fungi. It is, however, based on the active substance DDACarbonate which is known to be effective against it (see Section 4).

5.6.1 Conclusion

There are no available alternative biocidal products within the specified requirements authorised in Croatia, which are marketed to target blue stain fungi.

5.7 Republic of Cyprus

Three authorised biocidal products not containing IPBC was found in the initial search for the Republic of Cyprus. None of these products met the specified requirements presented in Section 3.

5.7.1 Conclusion

There are no available alternative biocidal products within the specified requirements authorised in the Republic of Cyprus.

5.8 Czech Republic

58 authorised biocidal products not containing IPBC was found in the initial search for Czech Republic, further reducing the results using the criteria in Section 3, resulted in four biocidal products:

Table 16: Filtered list of products authorised in Czech Republic

Trade name	Active substance
Tanasote S40	Copper hydroxide DDACarbonate Penflufen
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO
Wolmanit CX-8M Wolmanit CX-8WB	Basic Copper carbonate Cu-HDO
Korasit KS2 Korasit KSM	Basic Copper carbonate Bardap 26

Wolmanit CX-8M | Wolmanit CX-8WB and Wolmanit CX-8F are in the product assessment report noted not to be effective against blue stain fungi, and their SPCs also do not specify blue stain as a target organism. The SPCs for the remaining two products do not specify blue stain fungi as a target organism either but they are based on active substances identified in Section 4, which are known to be effective against blue stain fungi.

5.8.1 Conclusion

There are no available alternative biocidal products within the specified requirements authorised in the Czech Republic, which are marketed to target blue stain fungi.

5.9 Denmark

13 authorised biocidal products not containing IPBC was found in the initial search for Denmark, further reducing the results using the criteria in Section 3, resulted in three biocidal products:

Table 17: Filtered list of products authorised in Denmark.

Trade name	Active substance
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Wolmanit CX-8M Wolmanit CX-8WB	Basic Copper carbonate Cu-HDO
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO
SC400	Penflufen

The two products Wolmanit CX-8M | Wolmanit CX-8WB and Wolmanit CX-8F, are in their assessment report reported to not be effective against blue stain fungi, and this is not included as a target organism in the SPC. The SPC for SC400, only mentions brown rot fungi as the target organism, and this is therefore also not a suitable alternative.

5.9.1 Conclusion

There are no available alternative biocidal products within the specified requirements authorised in Denmark, which are marketed for the use against blue stain fungi.

5.10 Estonia

37 authorised biocidal products not containing IPBC was found in the initial search for Estonia. Further reducing the results using the criteria in Section 3, resulted in seven remaining biocidal products which can be seen in the table below:

Table 18: Filtered list of products authorised in Estonia.

Trade name	Active substance
Tanasote S40	Copper hydroxide DDACarbonate Penflufen
Celcure M65	Basic Copper carbonate DDACarbonate DDAC
Celcure C65	Basic Copper carbonate DDACarbonate DDAC
Wolmanit CX-8M Wolmanit CX-8WB	Basic Copper carbonate Cu-HDO
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO
Kemwood ACQ 2302 Korasit KS2 Korasit KSM	Basic Copper carbonate Bardap 26
HYDROKOAT 16 HYDROKOAT 6	Cypermethrin ADBAC/BKC (C12-16) DDAC

Wolmanit CX-8M | Wolmanit CX-8WB and Wolmanit CX-8F are in the product assessment report noted not to be effective against blue stain fungi, and their SPCs also do not specify blue stain as a target organism. The SPCs for the remaining products do not specify blue stain fungi as a target organism either but are, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi. Hydrokoat and Kemwood ACQ21 are furthermore reported to be corrosive to metals.

5.10.1 Conclusion

There are no available alternative biocidal products within the specified requirements authorised in Estonia, which are marketed for the use against blue stain fungi.

5.11 Finland

25 authorised biocidal products not containing IPBC was found in the initial search for Finland. Further reducing the results using the criteria in Section 3, resulted in seven remaining alternatives seen in the table below.

Table 19: Filtered list of products authorised in Finland

Trade name	Active substance
Tanasote S40	Copper hydroxide DDACarbonate Penflufen
Celcure M65	Basic Copper carbonate DDACarbonate DDAC
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO
Wolmanit CX-8M Wolmanit CX-8WB	Basic Copper carbonate Cu-HDO
Korasit KS2 Korasit KSM	Basic Copper carbonate Bardap 26
AXIL 2000 AB-B	ADBAC/BKC (C12-16)
Celcure C65	Basic Copper carbonate DDACarbonate DDAC

Wolmanit CX-8M | Wolmanit CX-8WB and Wolmanit CX-8F are in the product assessment report noted not to be effective against blue stain fungi, and their SPCs also do not specify blue stain as a target organism. The SPCs for the products Tanasote S40, Celcure M65, Celcure C65 and Korasit KS2, do not specify blue stain fungi as a target organism either but they are, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi.

The product AXIL 2000 AB-B is the only product from the list which by investigation of SPC, is marketed for use against blue stain fungi. Further specifications on the product, evaluation and comparison with use cases can be found in Section 5.2.1, where the product is concluded to be an alternative for Use Case 8, but not a suitable alternative for the other use cases.

5.11.1 Conclusion

There is one suitable alternative biocidal product within the specified requirements authorised in Finland: AXIL 2000 AB-B. The product is an alternative to products containing IPBC for Use Case 8. The product does not meet the required specifications and/or properties to be used for the other use cases. The product does not contain substances of concern. It should furthermore be noted that the product contains the substance ADBAC/BKC which is under assessment for being a candidate for substitution.

Table 20: Identified alternative products authorised in Finland

Trade name	Active substance	Authorisation No.	Use Case applicable	Authorisation End date
AXIL 2000 AB-B	ADBAC/BKC (C12-16)	FI-2023-0001 (National)	8	05/12/2029

5.12 France

111 authorised biocidal products not containing IPBC was found in the initial search for France. Further reducing the results using the criteria in Section 3, resulted in seven remaining alternatives, seen in the table below.

Table 21: Filtered list of products authorised in France.

Trade name	Active substance
Tanasote S40	Copper hydroxide DDACarbonate Penflufen
Celcure C65	Basic Copper carbonate DDACarbonate DDAC
18V33CP-PE AXTON TRAITEMENT BOIS UNIVERSEL (and more)	Cypermethrin Penflufen
Wolmanit CX-8M Wolmanit CX-8WB	Basic Copper carbonate Cu-HDO
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO
Korasit KS2 Korasit KSM	Basic Copper carbonate Bardap 26
HYDROKOAT 16 HYDROKOAT 6	Cypermethrin ADBAC/BKC (C12-16) DDAC

Wolmanit CX-8M | Wolmanit CX-8WB and Wolmanit CX-8F are in the product assessment report noted not to be effective against blue stain fungi, and their SPCs also do not specify blue stain as a target organism. The SPCs for the remaining products, do not specify blue stain fungi as a target organism either but the products are, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi. Hydrokoat 16 is furthermore reported to be corrosive to metals.

5.12.1 Conclusion

There are no available alternative biocidal products not containing IPBC within the specified requirements authorised in France, which are marketed to target blue stain fungi.

5.13 Germany

85 authorised biocidal products not containing IPBC was found in the initial search for Germany. Further reducing the results using the criteria in Section 3, resulted in seven remaining alternatives, seen in the table below.

Table 22: Filtered list of products authorised in Germany.

Trade name	Active substance
Tanasote S40	Copper hydroxide DDACarbonate Penflufen
Sinesto XT Korasit AS-O	ATMAC/TMAC K-HDO
Wolmanit CX-8M Wolmanit CX-8WB	Basic Copper carbonate Cu-HDO
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO
Kemwood ACQ 2302 Korasit KS2 Korasit KSM	Basic Copper carbonate Bardap 26
BKM HSB Korasit MS KULBASAL MS	Bardap 26
Kemwood ACQ21	Basic Copper carbonate DDAC

Wolmanit CX-8M | Wolmanit CX-8WB and Wolmanit CX-8F are in the product assessment report noted not to be effective against blue stain fungi, and their SPCs also do not specify blue stain as a target organism. The SPCs for the products Tanasote S40, Kemwood ACQ2302, Kemwood ACQ21 and BKM HSB do not specify blue stain fungi as a target organism either but the products are, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi. Kemwood ACQ21 is furthermore reported to be corrosive to metals.

The product Sinesto XT Korasit AS-O is the only product from the list which by investigation of SPC, is marketed for use against blue stain fungi. Further specifications on the product, evaluation and comparison with use cases can be found in Section 5.2.2, where the product is concluded to be an alternative for Use Case 8, but not a suitable alternative for the other use cases.

5.13.1 Conclusion

There is one suitable alternative biocidal product within the specified requirements authorised in Germany: *Sinesto XT Korasit AS-O*. The product is an alternative to products containing IPBC for Use Case 8. The product does not meet the required specifications and/or properties to be used for the other use cases. The product contains the substances of concern: 2-Ethylhexanoic acid and Potassium hydroxide.

Table 23: Identified alternative products authorised in Germany

Trade name	Active substance	Authorisation No.	Use Case applicable	Authorisation End date
Sinesto XT	ATMAC/TMAC K-HDO	DE-0027893-08 (National)	8	11/12/2033

5.14 Greece

22 authorised biocidal products not containing IPBC was found in the initial search for Greece. Further reducing the results using the criteria in Section 3, resulted in two remaining alternatives.

Table 24: Filtered list of products authorised in Greece.

Trade name	Active substance
Tanasote S40	Copper hydroxide DDACarbonate Penflufen
Celcure C65	Basic Copper carbonate DDACarbonate DDAC

The SPCs for both products do not specify blue stain fungi as a target organism but the products are, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi.

5.14.1 Conclusion

There are no available alternative biocidal products within the specified requirements authorised in Greece, which are marketed to target blue stain fungi.

5.15 Hungary

32 authorised biocidal products not containing IPBC was found in the initial search for Hungary. Further reducing the results using the criteria in Section 3, resulted in three remaining alternatives.

Table 25: Filtered list of products authorised in Hungary

Trade name	Active substance
Tanasote S40	Copper hydroxide DDACarbonate Penflufen
Kemwood ACQ 21	Basic Copper carbonate DDAC
Kemwood ACQ 2302 Korasit KS2 Korasit KSM	Basic Copper carbonate Bardap 26

The SPCs for the three products do not specify blue stain fungi as a target organism, but the products are, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi. Kemwood ACQ21 is furthermore reported to be corrosive to metals.

5.15.1 Conclusion

There are no available alternative biocidal products within the specified requirements authorised in Hungary, marketed for the use against blue stain fungi.

5.16 Ireland

42 authorised biocidal products not containing IPBC was found in the initial search for Ireland. Further reducing the results using the criteria in Section 3, resulted in five remaining alternatives.

Table 26: Filtered list of products authorised in Ireland

Trade name	Active substance
Tanasote S40	Copper hydroxide DDACarbonate Penflufen

Celcure M65	Basic Copper carbonate DDACarbonate DDAC
Celcure C65	Basic Copper carbonate DDACarbonate DDAC
Wolmanit CX-8M Wolmanit CX-8WB	Basic Copper carbonate Cu-HDO
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO

Wolmanit CX-8M | Wolmanit CX-8WB and Wolmanit CX-8F are in the product assessment report noted not to be effective against blue stain fungi, and their SPCs also do not specify blue stain as a target organism. The SPCs for the remaining products do not specify blue stain fungi as a target organism either but the products are, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi.

5.16.1 Conclusion

There are no available alternative biocidal products within the specified requirements authorised in Ireland marketed for the use against blue stain fungi.

5.17 Italy

39 authorised biocidal products not containing IPBC was found in the initial search for Italy. Further reducing the results using the criteria in Section 3, resulted in five remaining alternatives.

Table 27: Filtered list of products authorised in Italy

Trade name	Active substance
Tanasote S40	Copper hydroxide DDACarbonate Penflufen
Celcure C65	Basic Copper carbonate DDACarbonate DDAC
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO
Wolmanit CX-8M Wolmanit CX-8WB	Basic Copper carbonate Cu-HDO
18V33CP-PE	Cypermethrin Penflufen

Wolmanit CX-8M | Wolmanit CX-8WB and Wolmanit CX-8F are in the product assessment report noted not to be effective against blue stain fungi, and their SPCs also do not specify blue stain as a target organism. The SPCs for the remaining products do not specify blue stain fungi as a target organism either but the products are, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi.

5.17.1 Conclusion

There are no available alternative biocidal products within the specified requirements authorised in Italy.

5.18 Latvia

56 authorised biocidal products not containing IPBC was found in the initial search for Latvia. Further reducing the results using the criteria in Section 3, resulted in seven remaining alternatives

Table 28: Filtered list of products authorised in Latvia

Trade name	Active substance
Tanasote S40	Copper hydroxide DDACarbonate Penflufen
Celcure M65	Basic Copper carbonate DDACarbonate DDAC
Celcure C65	Basic Copper carbonate DDACarbonate DDAC
Wolmanit CX-8M Wolmanit CX-8WB	Basic Copper carbonate Cu-HDO
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO
Kemwood ACQ 2302 Korasit KS2 Korasit KSM	Basic Copper carbonate Bardap 26
AXIL 2000 AB-B	ADBAC/BKC (C12-16)

Wolmanit CX-8M | Wolmanit CX-8WB and Wolmanit CX-8F are in the product assessment report noted not to be effective against blue stain fungi, and their SPCs do also not specify blue stain as a target organism. The SPCs for the products Tanasote S40, Celcure M65, Celcure C65 and Kemwood ACQ2302 do not specify blue stain fungi as a target organism either but the products are, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi.

The product AXIL 2000 AB-B is the only product from the list which by investigation of SPC, is marketed for use against blue stain fungi. Further specifications on the product, evaluation and comparison with use cases can be found in Section 5.2.1, where the product is concluded to be an alternative for Use Case 8, but not a suitable alternative for the other use cases.

5.18.1 Conclusion

There is one suitable alternative biocidal product within the specified requirements authorised in Latvia: AXIL 2000 AB-B. The product is an alternative to products containing IPBC for Use Case 8. The product does not meet the required specifications and/or properties to be used for the other use cases. The product does not contain substances of concern. It should furthermore be noted that the product contains the substance ADBAC/BKC which is under assessment for being a candidate for substitution.

Table 29: Identified alternative products authorised in Latvia

Trade name	Active substance	Authorisation No.	Use Case applicable	Authorisation End date
AXIL 2000 AB-B	ADBAC/BKC (C12-16)	LV/2020/MR/002 (National)	8	05/12/2029

5.19 Lithuania

11 authorised biocidal products not containing IPBC was found in the initial search for Lithuania. Further reducing the results using the criteria in Section 3, resulted in five remaining alternatives, seen below:

Table 30: Filtered list of products authorised in Lithuania

Trade name	Active substance
Celcure M65	Basic Copper carbonate DDACarbonate DDAC
Celcure C65	Basic Copper carbonate DDACarbonate DDAC
Wolmanit CX-8M Wolmanit CX-8WB	Basic Copper carbonate Cu-HDO
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO
AXIL 2000 AB-B	ADBAC/BKC (C12-16)

Wolmanit CX-8M | Wolmanit CX-8WB and Wolmanit CX-8F are in the product assessment report noted not to be effective against blue stain fungi, and their SPCs do also not specify blue stain as a target organism. The SPCs for the products Celcure M65 and Celcure C65 do not specify blue stain fungi as a target organism either but the products are, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi.

The product AXIL 2000 AB-B is the only product from the list which by investigation of SPC, is marketed for use against blue stain fungi. Further specifications on the product, evaluation and comparison with use cases can be found in Section 5.2.1, where the product is concluded to be an alternative for Use Case 8, but not a suitable alternative for the other use cases.

5.19.1 Conclusion

There is one suitable alternative biocidal product within the specified requirements authorised in Lithuania: AXIL 2000 AB-B. The product is an alternative to products containing IPBC for Use Case 8. The product does not meet the required specifications and/or properties to be used for the other use cases. The product does not contain substances of concern. It should furthermore be noted that the product contains the substance ADBAC/BKC which is under assessment for being a candidate for substitution.

Table 31: Identified alternative products authorised in Lithuania

Trade name	Active substance	Authorisation No.	Use Case applicable	Authorisation End date
AXIL 2000 AB-B	ADBAC/BKC (C12-16)	PAP4464 (National)	8	05/12/2029

5.20 Luxembourg

21 authorised biocidal products not containing IPBC was found in the initial search for Luxembourg. Further reducing the results using the criteria in Section 3, resulted in one remaining alternative.

Table 32: Filtered list of products authorised in Luxembourg

Trade name	Active substance
Korasit MS	Bardap 26

The SPC for the product does not specify blue stain fungi as a target organism but the product is, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi.

5.20.1 Conclusion

There are no available alternative biocidal products within the specified requirements authorised in Luxembourg.

5.21 Malta

Two authorised biocidal products not containing IPBC was found in the initial search for Malta. Further reducing the results using the criteria in Section 3, resulted in no remaining alternatives.

5.21.1 Conclusion

There are no available alternative biocidal products within the specified requirements authorised in Malta.

5.22 Netherlands

51 authorised biocidal products not containing IPBC was found in the initial search for the Netherlands. Further reducing the results using the criteria in Section 3, resulted in seven remaining alternatives.

Table 33: Filtered list of products authorised in the Netherlands

Trade name	Active substance
Tanasote S40	Copper hydroxide DDACarbonate Penflufen
Wolmanit CX-8M	Basic Copper carbonate Cu-HDO
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO
Kemwood ACQ 2302 Korasit KS2 Korasit KSM	Basic Copper carbonate Bardap 26
Korasit MS	Bardap 26
Kemwood ACQ 21	Basic Copper carbonate DDAC
impralit-ACQ 1950 impralit-ACQ 2100	Copper (II) oxide DDAC

Wolmanit CX-8M | Wolmanit CX-8WB and Wolmanit CX-8F are in the product assessment report noted not to be effective against blue stain fungi, and their SPCs do also not specify blue stain as a target organism. The SPCs for the remaining products do not specify blue stain fungi as a target organism either

but the products are, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi. Impralit-ACQ and Kemwood ACQ21 are furthermore reported to be corrosive to metals.

5.22.1 Conclusion

There are no available alternative biocidal products within the specified requirements authorised in the Netherlands.

5.23 Norway

33 authorised biocidal products not containing IPBC was found in the initial search for Norway. Further reducing the results using the criteria Section 3, resulted in five remaining alternatives.

Table 34: Filtered list of products authorised in Norway

Trade name	Active substance
Tanasote S40	Copper hydroxide DDACarbonate Penflufen
Celcure M65	Basic Copper carbonate DDACarbonate DDAC
Celcure C65	Basic Copper carbonate DDACarbonate DDAC
Wolmanit CX-8M Wolmanit CX-8WB	Basic Copper carbonate Cu-HDO
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO

Wolmanit CX-8M | Wolmanit CX-8WB and Wolmanit CX-8F are in the product assessment report noted not to be effective against blue stain fungi, and their SPCs do also not specify blue stain as a target organism. The SPCs for the remaining products do not specify blue stain fungi as a target organism either but the products are, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi.

5.23.1 Conclusion

There are no available alternative biocidal products within the specified requirements authorised in Norway.

5.24 Poland

81 authorised biocidal products not containing IPBC was found in the initial search for Poland. Further reducing the results using the criteria in Section 3, resulted in five remaining alternatives.

Table 35: Filtered list of products authorised in Poland

Trade name	Active substance
Celcure C65	Basic Copper carbonate DDACarbonate DDAC
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO
Wolmanit CX-8WB	Basic Copper carbonate Cu-HDO
18V33CP-PE	Cypermethrin Penflufen

AXIL 2000 AB-B	ADBAC/BKC (C12-16)
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Wolmanit CX-8M | Wolmanit CX-8WB and Wolmanit CX-8F are in the product assessment report noted not to be effective against blue stain fungi, and their SPCs do also not specify blue stain as a target organism. The SPCs for the products Celcure C65 and 18V33CP-PE do not specify blue stain fungi as a target organism either, but the products are, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi.

The product AXIL 2000 AB-B is the only product from the list which by investigation of SPC, is marketed for use against blue stain fungi. Further specifications on the product, evaluation and comparison with use cases can be found in Section 5.2.1, where the product is concluded to be an alternative for Use Case 8, but not a suitable alternative for the other use cases.

5.24.1 Conclusion

There is one suitable alternative biocidal product within the specified requirements authorised in Poland: AXIL 2000 AB-B. The product is an alternative to products containing IPBC for Use Case 8. The product does not meet the required specifications and/or properties to be used for the other use cases. The product does not contain substances of concern. It should furthermore be noted that the product contains the substance ADBAC/BKC which is under assessment for being a candidate for substitution.

Table 36: Identified alternative products authorised in Poland

Trade name	Active substance	Authorisation No.	Use Case applicable	Authorisation End date
AXIL 2000 AB-B	ADBAC/BKC (C12-16)	PL/2019/0412 (National)	8	05/12/2029

5.25 Portugal

31 authorised biocidal products not containing IPBC was found in the initial search for Portugal. Further reducing the results using the criteria in Section 3 in eight remaining alternatives.

Table 37: Filtered list of products authorised in Portugal

Trade name	Active substance
Tanasote S40	Copper hydroxide DDACarbonate Penflufen
Celcure C65	Basic Copper carbonate DDACarbonate DDAC
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO
Wolmanit CX-8M Wolmanit CX-8WB	Basic Copper carbonate Cu-HDO
AXTON TRATAMENTO UNIVERSAL PLUS MADEIRA INTERIOR E EXTERIOR V33 FUNDO UNIVERSAL MADEIRAS	Cypermethrin Penflufen
Korasit KS2 Korasit KSM	Basic Copper carbonate Bardap 26

FKR-ANTISAPSTAIN FKR - ACQ EXTRA FKR PLUS 3	Copper hydroxide DDAC
HYDROKOAT 16 HYDROKOAT 6	Cypermethrin ADBAC/BKC (C12-16) DDAC

Wolmanit CX-8M | Wolmanit CX-8WB and Wolmanit CX-8F are in the product assessment report noted not to be effective against blue stain fungi, and their SPCs also do not specify blue stain as a target organism. AXTON TRATAMENTO UNIVERSAL PLUS MADEIRA INTERIOR E EXTERIOR is the same product as 18V33CP-PE. The SPCs for the products Tanasote S40, Celcure C65, 18V33CP-PE, Korasit KSM and Hydrokoat 16, do not specify blue stain fungi as a target organism either but they are, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi. Hydrokoat is furthermore reported to be corrosive to metals.

The product FKR-ACQ EXTRA is the only product from the list which by investigation of SPC, is marketed for use against blue stain fungi. Further specifications on the product, evaluation and comparison with use cases can be found in Section 5.2.3, where the product is concluded to be an alternative for Use Case 8, but not a suitable alternative for the other use cases.

5.25.1 Conclusion

There is one suitable alternative biocidal product within the specified requirements authorised in Portugal: FKR-ACQ EXTRA. The product is an alternative to products containing IPBC for Use Case 8. The product does not meet the required specifications and/or properties to be used within the other use cases. The product contains the substances of concern: Propan-2-ol and 2-aminoethanol. It should furthermore be noted that the product contains the substances DDAC and Copper hydroxide which are both under assessment for being a candidate for substitution.

Table 38: Identified alternative products authorised in Portugal

Trade name	Active substance	Authorisation No.	Use Case applicable	Authorisation End date
FKR-ACQ EXTRA	Copper hydroxide DDAC	PT/DGAV ARMPB08-39/2021 ; PT/DGAV ARMPB08-55/2021; PT/DGAV ARMPB08-71/2021	8	31/01/2025

5.26 Romania

Four authorised biocidal products not containing IPBC was found in the initial search for Romania. These products all failed to meet the criteria specified in Section 3.

5.26.1 Conclusion

There are no available alternative biocidal products within the specified requirements authorised in Romania.

5.27 Slovakia

44 authorised biocidal products not containing IPBC was found in the initial search for Slovakia. Further reducing the results using the criteria in Section 3 in three remaining alternatives

Table 39: Filtered list of products authorised in Slovakia

Trade name	Active substance
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO
Wolmanit CX-8M Wolmanit CX-8WB	Basic Copper carbonate Cu-HDO
Korasit KS2 Korasit KSM	Basic Copper carbonate Bardap 26

Wolmanit CX-8M | Wolmanit CX-8WB and Wolmanit CX-8F are in the product assessment report noted not to be effective against blue stain fungi, and their SPCs also do not specify blue stain as a target organism. The SPC for Korasit KSM does not specify blue stain fungi as a target organism either but the product is, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi.

5.27.1 Conclusion

There are no available alternative biocidal products within the specified requirements authorised in Slovakia.

5.28 Slovenia

29 authorised biocidal products not containing IPBC was found in the initial search for Slovenia. Further reducing the results using the criteria in Section 3 in three remaining alternatives:

Table 40: Filtered list of products authorised in Slovenia

Trade name	Active substance
Tanasote S40	Copper hydroxide DDACarbonate Penflufen
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO
Wolmanit CX-8M Wolmanit CX-8WB	Basic Copper carbonate Cu-HDO

Wolmanit CX-8M | Wolmanit CX-8WB and Wolmanit CX-8F are in the product assessment report noted not to be effective against blue stain fungi, and their SPCs also do not specify blue stain as a target organism. The SPC for Tanasote S40 does not specify blue stain fungi as a target organism either but the product is, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi.

5.28.1 Conclusion

There are no available alternative biocidal products within the specified requirements authorised in Slovenia.

5.29 Spain

38 authorised biocidal products not containing IPBC was found in the initial search for Spain. Further reducing the results using the criteria in Section 3 in seven remaining alternatives:

Table 41: Filtered list of products authorised in Spain

Trade name	Active substance
Tanasote S40	Copper hydroxide DDACarbonate Penflufen
Celcure C65	Basic Copper carbonate DDACarbonate DDAC
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO
Wolmanit CX-8M Wolmanit CX-8WB	Basic Copper carbonate Cu-HDO
AXTON TRATAMIENTO MULTIUSO CECIL PROFESSIONNEL TX203 TRATAMIENTO MULTIUSO V33 TRATAMIENTO MULTIUSO	Cypermethrin Penflufen
Kemwood ACQ 2302	Basic Copper carbonate Bardap 26
FKR - ANTISAPSTAIN FKR – PLUS 3 FKR-ACQ EXTRA	Copper hydroxide DDAC

Wolmanit CX-8M | Wolmanit CX-8WB and Wolmanit CX-8F are in the product assessment report noted not to be effective against blue stain fungi, and their SPCs also do not specify blue stain as a target organism. AXTON TRATAMIENTO UNIVERSAL PLUS MADEIRA INTERIOR E EXTERIOR is the same product as 18V33CP-PE. The SPCs for the products Tanasote S40, Celcure C65, 18V33CP-PE and Kemwood ACQ2302, do not specify blue stain fungi as a target organism either but they are, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi.

The product FKR-ACQ EXTRA is the only product from the list which by investigation of the SPC, is found to be marketed for use against blue stain fungi. Further specifications on the product, evaluation and comparison with use cases can be found in Section 5.2.3, where the product is concluded to be an alternative for Use Case 8, but not a suitable alternative for the other use cases.

5.29.1 Conclusion

There is one suitable alternative biocidal product within the specified requirements authorised in Spain: FKR-ACQ EXTRA. The product is an alternative to products containing IPBC for Use Case 8. The product does not meet the required specifications and/or properties to be used within the other use cases. The product contains the substances of concern: Propan-2-ol and 2-aminoethanol. It should furthermore be noted that the product contains the substances DDAC and Copper hydroxide which are both under assessment for being a candidate for substitution.

Table 42: Identified alternative products authorised in Spain

Trade name	Active substance	Authorisation No.	Use Case applicable	Authorisation End date
FKR-ACQ EXTRA	Copper hydroxide DDAC	ES/APP(NA)-2021-08-00733 (National)	8	31/01/2025

5.30 Sweden

41 authorised biocidal products not containing IPBC was found in the initial search for Portugal. Further reducing the results using the criteria in Section 3, resulted in eight remaining alternatives:

Table 43: Filtered list of products authorised in Sweden

Trade name	Active substance
Tanasote S40	Copper hydroxide DDACarbonate Penflufen
Celcure M65	Basic Copper carbonate DDACarbonate DDAC
Celcure C65	Basic Copper carbonate DDACarbonate DDAC
Wolmanit CX-8M Wolmanit CX-8WB	Basic Copper carbonate Cu-HDO
Wolmanit CX-8F	Basic Copper carbonate Cu-HDO
Korasit KS2 Korasit KSM	Basic Copper carbonate Bardap 26
AXIL 2000 AB-B	ADBAC/BKC (C12-16)
impralit-ACQ 1950 impralit-ACQ 2100 impralit-ACQ 2100 BPR impralit-ACQ 2100 PLUS impralit-ACQ 2100 X impralit-ACQ 2150 impralit-ACQ 2250 impralit-KDS 20	Copper (II) oxide DDAC

Wolmanit CX-8M and Wolmanit CX-8F are in the product assessment report noted not to be effective against blue stain fungi, and their SPCs also do not specify blue stain as a target organism. The SPCs for the products Tanasote S40, Celcure M65, Celcure C65, Korasit KS2 and impralit-ACQ 1950 do not specify blue stain fungi as a target organism either but they are, however, based on active substances identified in Section 4, which are known to be effective against blue stain fungi. Impralit-ACQ is furthermore reported to be corrosive to metals.

The product AXIL 2000 AB-B is the only product from the list which by investigation of SPC, is marketed for use against blue stain fungi. Further specifications on the product, evaluation and comparison with use cases can be found in Section 5.2.1, where the product is concluded to be an alternative for Use Case 8, but not a suitable alternative for the other use cases.

5.30.1 Conclusion

There is one suitable alternative biocidal product within the specified requirements authorised in Sweden: AXIL 2000 AB-B. The product is an alternative to products containing IPBC for Use Case 8. The product does not meet the required specifications and/or properties to be used for the other use cases. The product does not contain substances of concern. It should furthermore be noted that the product contains the substance ADBAC/BKC which is under assessment for being a candidate for substitution.

Table 44: Identified alternative products authorised in Sweden

Trade name	Active substance	Authorisation No.	Use Case applicable	Authorisation End date
AXIL 2000 AB-B	ADBAC/BKC (C12-16)	5931	8	05/12/2029

6 Conclusion

Three biocidal product alternatives to products containing IPBC were identified, to fulfil the requirements within the scope, and partly meet the defined use cases by EuroWindoor: AXIL 2000 AB-B, Sinesto XT and FKR- ACQ EXTRA. They are authorised in one or more of the countries within the scope under the Biocidal Products Regulation (BPR). All three products are authorised with a national authorisation and are only authorised in some of the defined countries.

The three product alternatives are only applicable in Use Case 8, defined by EuroWindoor. The products do not meet the requirements for the remaining use cases.

Two of these products (AXIL 2000 AB-B and FKR- ACQ EXTRA) are based on substances which are under assessment for being a candidate for substitution, under the Biocidal Products Regulation (BPR).

Sinesto XT and FKR – ACQ EXTRA furthermore contains substances of concern.

Table 45: Overview of identified alternative products not containing IPBC

Trade name	Countries authorised within	Active substance(s)	Relevant Use Cases	Note
AXIL 2000 AB-B	Belgium; Finland; Latvia; Lithuania; Poland; Sweden	Alkyl (C12-16) dimethylbenzyl ammonium chloride (ADBAC/BKC (C12-16))	Alternative within Use Case 8.	Active substance is under assessment for being a candidate for substitution
Sinesto XT	Germany	Coco alkyltrimethyl ammonium chloride (ATMAC/TMAC) K-HDO	Alternative within Use Case 8.	Contains substance(s) of concern: 2-Ethylhexanoic acid and Potassium hydroxide
FKR - ACQ EXTRA	Portugal; Spain	Copper hydroxide Didecyldimethyl ammonium chloride (DDAC)	Alternative within Use Case 8.	Active substances are under assessment for being a candidate for substitution Contains substance(s) of concern: Propan-2-ol 2-aminoethanol

Appendix A Extracted and filtered data

Appendix A.1 Spreadsheet of extracted data filtered for products not containing IPBC

See attached spreadsheet Appendix A_1_Data_initial_filtering. The spreadsheet includes the extracted data with filled out lacking data gaps and filtered to only contain authorised products not containing IPBC.

Appendix A.2 Spreadsheet of filtered products

See attached spreadsheet Appendix A_2_Data_filtered_products. The spreadsheet includes the extracted data with filled out lacking data gaps and filtered as described in Section 3.

Appendix A.3 Spreadsheet of extracted data on active substances

See attached spreadsheet Appendix A_3_Data_filtered_substances. The spreadsheet includes the extracted data on active substances with filled out lacking data gaps as described in Section 3, along with added columns for target organism added from the assessment reports.