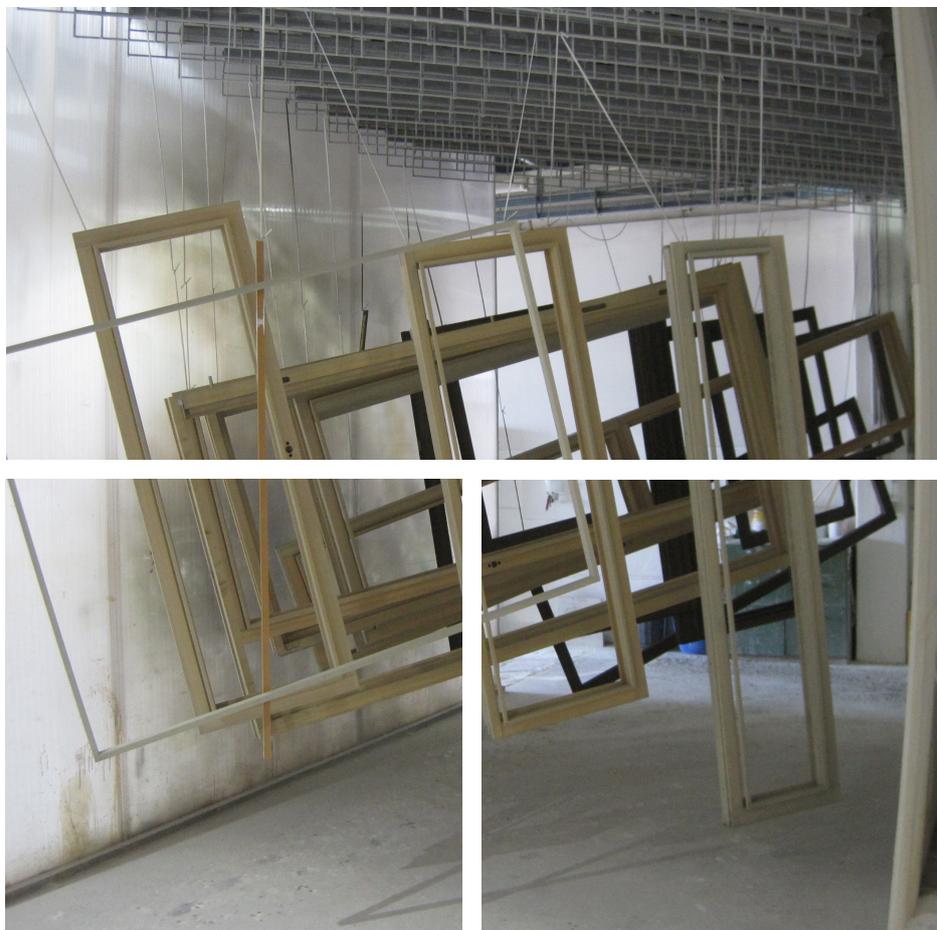




STUDY ON AUTHORISED WOOD PRESERVATIVES FOR INDUSTRIAL USE AS PRIMERS TO MANUFACTURE WOODEN WINDOWS

Market area Austria and Germany



**Study on authorised wood preservatives for
industrial use as primers to manufacture
wooden windows**

Market area Austria and Germany

Ordered by:

VELUX A/S
VELUX Global Group Functions
Ådalsvej 99
2970 Hørsholm
Denmark

HFA-A.Nr.: 2635/2020/1-HO

Authors

Gerhard Gröll, Michael Truskaller, Notburga Pfabigan,
Roland Gründlinger, Magdalena Senoner

March 2021

Legal Disclaimer

To the extent feasible, all information provided in this study is carefully researched, compiled and checked. The results and statements given in this document relate only to publicly available information and other sources believed to be true. Neither Holzforschung Austria nor any of its employees can accept any liability for the accuracy, completeness and validity of these statements and information. Publication in excerpts is only permitted with the written approval of Holzforschung Austria.

CONTENT

1	INTRODUCTION	4
2	REQUIREMENTS OF INDUSTRIAL WINDOW MANUFACTURER	6
3	REQUIREMENTS FOR WOOD PRESERVATIVES FOR WINDOWS IN AUSTRIA AND GERMANY	7
4	INQUIRY ON WOOD PRESERVATIVES FOR WINDOW FRAMINGS.....	9
5	ADDITIONAL QUESTIONS.....FEHLER! TEXTMARKE NICHT DEFINIERT.	
6	CONCLUSIONS	21
7	REFERENCES	23

Executive summary

The aim of this study was to look for alternatives for the active substances *Propiconazole*, *Tebuconazole* and *IPBC* used in wood preservatives, since the end of approval in the EU is expected on September 30th 2022 for Tebuconazole and December 31st, 2022 for Propiconazole and IPBC. The European Chemical Agency (ECHA) keeps a database, where wood preservatives authorized in the EU are listed.

653 datasets on wood preservatives that are authorised or notified in Austria and Germany were retrieved from the relevant databases (ECHA, ARGE-HSM, BAUA, ÖBPV) and extended to include further product characteristics. Datasets were sorted out further to contain only products which are waterborne, suitable for flow application and show efficacy against blue stain (B) and wood destroying fungi (P). Altogether, 14 wood preservatives suitable for window framings were found for Austria (10 wood preservatives) or Germany (10 wood preservatives). All wood preservatives contained IPBC. Only one wood preservative contained no Propiconazole but contained Tebuconazole. Therefore, it can be said that an expiry of the approval of Propiconazole and Tebuconazole will have tremendous impact on the market of wooden windows and exterior doors, especially because bringing new products on the market might take as long as seven to ten years (Leithoff 2015). Manufacturers will no longer be able to use well known products that fit the properties profile needed to operate an efficient industrial coating process. With possible restrictions of Propiconazole and Tebuconazole in wood preservatives there will be no more wood preservatives left to manufacture durable wooden windows and exterior doors and they cannot be made according to the standards in Europe, Germany and Austria. These restrictions on wood preservatives will be a drawback for the sustainable material wood in window framework and would lead to displacing wood as one of the major materials for windows and doors in Europe, thereby removing a sustainable option for manufacturers and consumers.

1 Introduction

In the production of windows and exterior doors with wood as frame material it is state of the art and required in standards and guidelines (ÖNORM B 3803, VFF-Merkblatt HO.11) to use wood preservatives to prevent degradation by wood decay fungi and disfigurement by wood discolouring fungi (blue stain fungi). In industrial manufacturing of wooden window framings and exterior doors wood preservatives are usually applied in a flow coat process as a first layer as part of a coating system followed by an intermediate coat and top coat to build a film forming coating. In the EU wood preservatives are classified as biocidal products and regulated by the Biocidal Products Regulation (BPR, REGULATION (EU) No 528/2012) in **product-type 08: Wood preservatives**. (Description of product-type 08: Wood preservatives, according to BPR No 528/2012, Annex V: *Products used for the preservation of wood, from and including the saw-mill stage, or wood products by the control of wood-destroying or wood-disfiguring organisms, including insects. This product-type includes both preventive and curative products.*).

Propiconazole is a widely used active substance in wood preservatives for timber doors and windows. Ahead of the upcoming approval expiry date of Propiconazole the company VELUX A/S, VELUX Global Group Functions, 2970 Hørsholm, Denmark, ordered Holzforschung Austria to create a study on authorised/notified wood preservatives for industrial use as primers for wooden windows focusing on the market area of Germany and Austria.

When this analysis was started, the expiry date of approval for Propiconazole for use in biocidal products of product-type 8 was March 31st 2021, but while this work was conducted this date was postponed until December 31st 2022 (COMMISSION IMPLEMENTING DECISION (EU) 2021/354 of 25 February 2021).

The expiry date of Propiconazole is now the same as for IPBC (December 31st 2022), and close to the expiry date of Tebuconazole (September 30th 2022).

The study shall give an overview of currently authorised wood preservatives (PT08) of alternative products without Propiconazole or Tebuconazole, which meet the requirements of VELUX for the production of wooden windows focusing on the market area of Germany and Austria.

2 Requirements of industrial window manufacturer

VELUX stated the following requirements for wood preservatives which must be met in order to be suitable for the production processes at the manufacturing facilities of VELUX:

- Market Area: Austria and Germany
- Authorised (or notified) as wood preservative (Biocidal product-type 08)
- Contains no substances of concern
- Suitable for industrial process
- Suitable for flow coat application (products for pressure impregnation or dipping are not suitable)
- Waterborne
- Efficacy against wood decay fungi and blue stain

Velux kindly asked to answer the following questions:

- What is necessary to get a Biocidal Product Authorization for Use Class 3 under BPR?
- What are the consequences of having a product only registered for indoor use: does this mean that it cannot be used for outdoor products like windows?
- Regarding the intended use: if a product is only registered for professional use, does that mean that it is not suitable for industrial use?
- What are the timeline and criteria for new biocidal products to get on the Österreichisches Holzschutzmittelverzeichnis list?

3 Requirements for wood preservatives for windows in Austria and Germany

3.1 Austrian market area

In Austria, the abbreviations for the efficacy from ÖNORM B 3802-3 are stated in Table 1:

Table 1: Abbreviations of preventively efficient wood preservatives according to their efficacy according to ÖNORM B 3802-3

Abbreviations	Efficacy
B	Preventative efficient against Blue stain
BS	Preventative efficient against discolouring fungi on freshly sawn timber during transport and stocking
P	Preventative efficient against wood destroying fungi, but not against mould rot
Iv	Preventative efficient against Insects
W	Durable against weathering and high humidity (leaching)
E	Wood in contact with ground and or water; preventative efficient against wood destroying fungi and mould rot

In Austria, ÖNORM B 3803 describes the minimum requirements for coatings on dimensionally stable wooden outdoor building components (like window framings and doors). For window framings exposed to direct weathering, the primer is required to be suited as preventive treatment against blue stain (B) and stable against leaching (W). By using wood species with durability 1 and 2 according to EN 350, it can be abstained from wood preservatives. By using pine sapwood, a preventive treatment against wood destroying fungi (P) is recommended. For weather protected window constructions (such as wood/aluminium windows) it can be abstained from wood preservatives. Very few European species are durable (Oak or Robinia), they are used rarely for window framings in Austria. Most common wood species in Austria is Spruce. Depending on the installation conditions (e.g. roof windows), protection against wood-destroying fungi might be required and necessary (even for weather protected installations).

3.2 German market area

In Germany, requirements for wood preservation are stated in VFF Merkblatt HO.11 (September 2020) “Holzschutz bei Holz- und Holz-Metall-Fenstern, -Haustüren, -Fassaden und -Wintergärten”. The assignment of dimensionally stable wooden outdoor building components in VFF Merkblatt HO.11, Pt. 3., to use classes according to EN 335 up to use class 3.1 is possible and examples are shown. More severe use classes are not allowed (use class 3.2) or not relevant (use class 4 and 5) for dimensionally stable wooden outdoor building components. According to VFF HO.11, Pt. 4.1, the manufacturer of dimensionally stable wooden outdoor building components may choose between different wood preserving methods. Thereby the basic structural measures (protection against direct weathering; draining off water and drying back to normal wood moisture content level of related wooden constructions) shall always be considered, and the basic design measures shall be considered in normal cases. Additional preventative chemical wood preservation may be necessary depending on the safety level and the exposure level. According to VFF HO.11, Pt. 4.2, a waiving of preventative chemical wood preservation against wood destroying fungi must be agreed by contract. It requires the use of sufficient durable wood species according to the use class considering the safety level and the exposure level. When using wood preservatives, efficacy against wood destroying insects is not necessary in most cases. The necessity of efficacy against wood destroying fungi must be evaluated according to DIN 68800-3:2020, Annex C, considering the chosen wood species and intended use class. The efficacy against disfigurement by wood discolouring fungi is necessary for blue stain sensible wood species, especially when using clear and semi-transparent coating systems.

According to VFF Merkblatt HO.11 the use of BAUA notified wood preservatives (BAUA-Registrierungsnummer N-XXX) or authorised wood preservatives (with authorisation number DE-XXX XXX) is permitted. In Pt. 4.3.6 the VFF refers to the re-evaluation procedure for Propiconazole, IPBC and Tebuconazole ahead of the approval period for wood preservatives is up for renewal. It is recommended that the approval period shall not end before concluding a comprehensive re-evaluation.

The requirements described above are very similar to those used in many other countries of the European Union. Independently from any national requirements this study contains an inquiry on wood preservatives preventive efficient against blue stain and wood destroying fungi (B and P).

4 Inquiry on wood preservatives for window framings

4.1 Methods

Datasets on wood preservatives that are authorised in Austria and Germany were retrieved from the ECHA database. However, not all products which can be used in Austria and Germany are listed in ECHA database. Therefore, products listed in other databases were included as well, resulting in the following databases being used:

- ECHA (European Chemicals Agency)
 - database of authorised biocidal products on the EU/EEA market
 - <https://echa.europa.eu/de/information-on-chemicals/biocidal-products>

- BAUA (Bundesanstalt für Arbeitsschutz und Arbeitsmedizin)
 - database of authorised biocidal products in Germany
 - https://www.baua.de/DE/Themen/Anwendungssichere-Chemikalien-und-Produkte/Chemikalienrecht/Biozide/Datenbank-Biozide/Biozide_form.html?resourceId=8684648&input=8684642&pageLocale=de&searchEngineQueryString=&prodart=08+%28Holzschutzmittel%29&prodart.GROUP=1&wirkstoff=&wirkstoff.GROUP=1&submit=Suchen
 - database of notified (“gemeldete”) biocidal products in Germany
 - <https://www.baua.de/DE/Biozid-Meldeverordnung/Offen/offen.html>

- ÖBPV (Umweltbundesamt – Österreichisches Biozidprodukteverzeichnis)
 - database of authorised biocidal products in Austria
 - <https://www.biozide.at/bp/bpvz>

- ARGE-HSM (ARGE Holzschutzmittel - Österreichisches Holzschutzmittelverzeichnis 2020 ¹)
 - <https://www.holzschutzmittel.at/media/13542/hmv2020.pdf>

¹ The Österreichisches Holzschutzmittelverzeichnis is compiled on a voluntary basis. The ARGE-HSM has made the responsible use of wood preservatives its business long before the BPR was in force. Only wood preservatives positively assessed according to the principles of the ARGE’s rules and regulations, as well as those being authorised biocidal products are able to get an “Anerkennungszertifikat” and are listed in the Österreichisches Holzschutzmittelverzeichnis.

The ECHA data was downloaded as csv file and transferred into a table. The BAUA list was copied manually from the homepage and transferred into a table. The List of ÖBPV was downloaded as excel file. The data of ARGE-HSM was copied manually from pdf and transferred into a table.

First, products were filtered according to their active substances. Products with active substances not suited for application on window framings were sorted out.

After merging the data of ECHA, BAUA, ÖBPV and ARGE-HSM and sorting out duplicates, a list of 653 datasets was extracted and extended to include technical information retrieved from technical data sheets. The next step involved sorting out datasets according to the requirements of Velux (waterborne, suitable for flow application, proven efficacy against blue stain and decay) and discarding products not suitable for some other reasons (e.g. containing substances of concerns).

After that, data was manually referred to 17 different product families.

4.2 Results

To search for approved biocidal products, the ECHA database is one of the most comprehensive sources available. The European Chemicals Agency (ECHA) has the mission to work for the safe use of chemicals and the vision to be the centre of knowledge on the sustainable management of chemicals, serving a wide range of EU policies and global initiatives, for the benefit of citizens and the environment. The ECHA's Biocidal Products Committee (BPC) prepares the opinions of ECHA related to several BPR processes. The final decisions are taken by the European Commission. ECHA's webpages are a unique source of information on the chemicals manufactured and imported in Europe. It covers their hazardous properties, classification and labelling, and information on how to use them safely.

However, not all products which can be used in Austria and Germany are listed in ECHA database. Therefore, products listed in databases kept by *Bundesanstalt für Arbeitsschutz und Arbeitsmedizin* (BAUA), *Umweltbundesamt – Österreichisches Biozidprodukteverzeichnis* (ÖBPV) and *ARGE Holzschutzmittel - Österreichisches Holzschutzmittelverzeichnis 2020* (ARGE-HSM) were included together with the ECHA database as source for the present inquiry.

According to *Bundesanstalt für Arbeitsschutz und Arbeitsmedizin – Federal Institute for Occupational Safety and Health* (BAUA), there are wood preservatives with active

substances to which the transitional measures apply, and which are marketable without authorisation. In Germany, these products are covered by BAUA, which maintain a database for authorised products and one for notified products, which were both included in the present inquiry.

In Austria main information about biocidal products is provided by the *Umweltbundesamt - Environment Agency Austria*. It covers products not listed in the ECHA database containing active substances which are listed in the COMMISSION DELEGATED REGULATION (EU) No 1062/2014, Annex II, Part 1. Additionally, the “*Österreichisches Holzschutzmittelverzeichnis 2020*” by the *ARGE Holzschutzmittel* was included in the inquiry.

The first step involved filtering the products according to their active substances. Products with active substances not suited for application on window framings were sorted out (Column “Filter”: “0”). In Table 2 the active substances of ECHA, in Table 3 the active substances of BAUA and in Table 4 the active substances of ÖPBV are listed.

Table 2: List of active substances combinations ECHA database (PT08), industrial, nSOC, all market area and ECHA all Field of uses (substance name without chemical formulation of ECHA database)

Active substances	Filter 1: included 0: excluded
(IPBC) Tebuconazole	1
(Propiconazole) (IPBC) Tebuconazole	1
(IPBC)	1
(Propiconazole) (IPBC)	1
(Cypermethrin) (Propiconazole) (IPBC)	1
(Propiconazole) (IPBC) Permethrin	1
(Cypermethrin) (Propiconazole) Tebuconazole	1
Tebuconazole	1
Boric acid Disodium tetraborate pentahydrate	0
Boric acid Disodium tetraborate	0
Boric acid	0
(ADBAC/BKC (C12-16))	0
(Propiconazole) Boric acid Fenpropimorph	0
Creosote	0
Permethrin	0

Table 3: List of active substances combinations BAUA database (PT08) of authorised biocidal products in Germany (substance name of BAUA – German language)

Active substances	Filter 1: included 0: excluded
IPBC	1
IPBC, Propiconazol, Tebuconazol	1
IPBC, Propiconazol	1
IPBC, Tebuconazol	1
IPBC, Permethrin, Propiconazol, Tebuconazol	1
Cypermethrin, IPBC, Tebuconazol	1
Cypermethrin, IPBC, Propiconazol	1
IPBC, Permethrin, Propiconazol	1
Tebuconazol	1
Propiconazol	1
Fenpropimorph, Propiconazol	0
Dazomet	0
Cypermethrin	0
Sulfuryldifluorid	0
K-HDO	0
Hydrogencyanid	0
Dinatriumoctaborat Tetrahydrat	0
ADBAC, Borsäure	0
Borsäure, Dinatriumtetra borat Decahydrat	0
Permethrin	0
Borsäure, DDAC, Dinatriumtetra borat	0
Basisches Kupfercarbonat, Tebuconazol	0
Kreosot	0
Borsäure, Dinatriumtetra borat Pentahydrat	0
Kupfer (granuliert), Propiconazol, Tebuconazol	0
Borsäure	0
Borsäure, Fenpropimorph, Propiconazol	0
Borsäure, Fenoxycarb, Fenpropimorph, Propiconazol	0
Basisches Kupfercarbonat, Propiconazol, Tebuconazol	0

Table 4: List of active substances combinations ÖPBV database (PT08) of authorised biocidal products in Austria (substance name of ÖPBV – German language)

Active substances	Filter 1: included 0: excluded
Propiconazol Permethrin IPBC -	1
IPBC Tebuconazol	1
IPBC Propiconazol - -	1
IPBC Propiconazol -	1
Propiconazol IPBC	1
Propiconazol Tebuconazol IPBC	1
Propiconazol Tebuconazol IPBC -	1
IPBC - -	1
IPBC Propiconazol Tebuconazol	1
IPBC Propiconazol Tebuconazol -	1
IPBC - - -	1
Cypermethrin IPBC Propiconazol	1
Fenpropimorph Propiconazol -	0
Kreosot Grad B (gemäß der Europäischen Norm EN 13991:2003) - -	0
Kreosot Grad C (gemäß der Europäischen Norm EN 13991:2003) - -	0
ADBAC/BKC (C12-16) Borsäure -	0
Fenpropimorph Borsäure Propiconazol	0
Cu-HDO Basisches Kupfercarbonat Fenpropimorph	0
K-HDO - -	0

After merging the data of ECHA, BAUA, ÖPBV and ARGE-HSM and sorting out duplicates, a list of 653 datasets was extracted to be explored in detail. Next, the technical data sheets of the filtered products were collected from coating manufacturer's webpages and direct contacts with representatives to determine further product characteristics (waterborne, suitable for flow application, efficacy and other). The relevant information was added to the related dataset.

After sorting out the data according to the requirements of Velux (waterborne, suitable for flow application, efficacy against blue stain and decay) and discarding products not suitable for some other reasons (e.g. containing substances of concerns), a list of 35 datasets for Austria and 37 datasets for Germany was created. The active substances of the merged and filtered datasets are listed in Table 5. All wood preservatives contained IPBC. Only one wood preservative contained no Propiconazole, the active substances listed for this product were IPBC and Tebuconazole.

The list of *Umweltbundesamt* (ÖPBV) contained no additional wood preservatives meeting the required criteria.

Table 5: List of active substances combinations of merged data of ECHA, BAUA, ÖPBV and ARGE-HSM – suitable for windows (active substance names mixed in English and German)

Data source	active substances	Austria dataset counts	Germany dataset counts
BAUA	IPBC Permethrin Propiconazol Tebuconazol		1
BAUA	IPBC Tebuconazole		1
BAUA	Propiconazole IPBC		11
BAUA	Cypermethrin Propiconazole IPBC		2
BAUA	IPBC Permethrin Propiconazol		1
BAUA sum			16
ECHA	IPBC Tebuconazole	13	14
ECHA	Propiconazole IPBC	14	4
ECHA	Propiconazole IPBC Tebuconazole	3	2
ECHA	Cypermethrin Propiconazole IPBC	1	1
ECHA sum		31	21
ARGE-HSM	Propiconazole IPBC Permethrin	2	
ARGE-HSM	IPBC propiconazole permethrin	1	
ARGE-HSM	Propiconazole IPBC	1	
ARGE sum		4	
Total sum		35	37

Some of the listed datasets differed only in colour. Table 6 shows the wood preservatives of different manufacturers (authorisation holder), the containing active substances and trade names. The single datasets were manually referred to product families and 17 different product families were found. In this list of 17 product families one product needed pressure impregnation for use class 3, one product was not classified for industrial use and one product was a combination of wood preservative and care oil. The remaining list counts 14 wood preservatives suited for window framings in Austria or Germany.

Table 6: Biocidal Products, waterborne, suitable for flow application, efficacy B and P and basically suitable for window framings

Authorisation holder / active substances / trade name of wood preservative	Market area – sum of counts		Product family
	Austria	Germany	
ADLER-Werk Lackfabrik Johann Berghofer GmbH & Co KG – sum of counts	13	15	
IPBC Tebuconazole	13	15	
Aquawood Ligno+ Base	1	1	1
Aquawood Ligno+ Base Eiche Natur Aquawood Primo A3	1	1	1
Aquawood Primo A1	1	1	1
Aquawood Primo A2	1	1	1
Aquawood Primo A4	1	1	1
Aquawood Primo A5 Aquawood TIG HighRes Castagno	1	1	1
Aquawood Primo A6	1	1	1
Aquawood Primo TIM	1	1	1
Aquawood TIG E Kastanie	1	1	1
Aquawood TIG E Kastanie; Aquawood Ligno+		1	1
Aquawood TIG E1	1	1	1
Aquawood TIG E3	1	1	1
Aquawood TIG E4	1	1	1
Aquawood TIG E5	1	1	1
Aquawood TIG mid brown		1	1
Akzo Nobel Coatings GmbH	1		
Propiconazole IPBC Permethrin	1		
Xyladecor Xylamon Holzschutz + Grundierung HS <i>(Note: According to Österreichisches Holzschutzmittelverzeichnis 2020)</i>	1		2
Akzo Nobel Industrial Coatings AB	2	1	
Propiconazole IPBC Tebuconazole	2	1	
Sikkens Cetol WP 567 (BPF) Eiche Dunkel Klassik	1		3
Sikkens Cetol WP 567BPD Sikkens Cetol WP 567BPD Eiche Dunkel Klassik		1	3
Sikkens Cetol WV 885BPD + Farblos 003 Base TC	1		3
BERKEM DEVELOPPEMENT		1	
IPBC Permethrin Propiconazol Tebuconazol		1	
AXIL 3000 P; RESISTOL 6218; SARPALO 910; SARPECO 910 <i>(Note: Pressure impregnation required for use class 3)</i>		1	4
einza Lackfabrik GmbH	1		
IPBC propiconazole permethrin	1		
einza Bläueschutz W	1		5

Table 6 (continued): Biocidal Products, waterborne, suitable for flow application, efficacy B and P and basically suitable for window framings

Authorisation holder / active substances / trade name of wood preservative	Market area – sum of counts		Product family
J.F. Amonn Srl/GmbH		1	
Propiconazole IPBC		1	
HYDROGRUND PLUS <i>(Note: Not specific for industrial use)</i>		1	6
Kurt Obermeier GmbH & Co. KG	2		
Propiconazole IPBC	1		
Koralan Holzöl Spezial Goldkiefer <i>(Note: Wood preservative and care oil product)</i>	1		7
Propiconazole IPBC	1		
DANSKE Holzschutzgrund	1		8
Remmers Baustofftechnik Ges. mbH	1		
Propiconazole IPBC	1		
Induline SW-900	1		9
Remmers GmbH	1	2	
Propiconazole IPBC		1	
Induline SW-900		1	9
Cypermethrin Propiconazole IPBC	1	1	
Aqua IG-15-Imprägniergrund IT Induline SW-900 IT	1	1	9
Teknos A/S	2	4	
Propiconazole IPBC	1	2	
AQUA PRIMER 2907-02		1	10
TEKNOL AQUA 1410-01	1	1	11
Propiconazole IPBC Tebuconazole	1	1	
GORI 356	1		12
TEKNOL AQUA 1412-01		1	13
IPBC, Permethrin, Propiconazol		1	
TEKNOL AQUA 1415-01		1	14

Table 6 (continued): Biocidal Products, waterborne, suitable for flow application, efficacy B and P and basically suitable for window framings

Authorisation holder / active substances / trade name of wood preservative	Market area – sum of counts		Product family
Teknos Deutschland GmbH	12		
Propiconazole IPBC Permethrin	1		
Teknol Aqua 1415-01	1		14
Propiconazole IPBC	11		
AQUA PRIMER 2907-02 Creme-Weiß 9002	1		15
AQUA PRIMER 2907-02 Eiche 9009	1		15
AQUA PRIMER 2907-02 Farblos	1		15
AQUA PRIMER 2907-02 Fichte 9002	1		15
AQUA PRIMER 2907-02 Laugenweiß	1		15
AQUA PRIMER 2907-02 Leeb 006 Neu-Pinie	1		15
AQUA PRIMER 2907-02 Leeb 009 Neu-Teak	1		15
AQUA PRIMER 2907-02 Mahogany 9012	1		15
AQUA PRIMER 2907-02 Nuss 9015	1		15
AQUA PRIMER 2907-02 Palisander 9016	1		15
AQUA PRIMER 2907-02 Zypresse 9005	1		15
Teknos Deutschland GmbH		11	
Propiconazole IPBC		11	
AQUA PRIMER 2907-02 colourless		1	15
AQUA PRIMER 2907-02 Creme-weiss/ Cream		1	15
AQUA PRIMER 2907-02 Cypress 9005		1	15
AQUA PRIMER 2907-02 Leeb 006 Neu/Pine		1	15
AQUA PRIMER 2907-02 Leeb 009 Neu/Teak		1	15
AQUA PRIMER 2907-02 Lye White		1	15
AQUA PRIMER 2907-02 Mahogany 9012		1	15
AQUA PRIMER 2907-02 Nut 9015		1	15
AQUA PRIMER 2907-02 Oak 9009		1	15
AQUA PRIMER 2907-02 Palisander 9016		1	15
AQUA PRIMER 2907-02 Spruce 9002		1	15

Table 6 (continued): Biocidal Products, waterborne, suitable for flow application, efficacy B and P and basically suitable for window framings

Authorisation holder / active substances / trade name of wood preservative	Market area – sum of counts		Product family
Troy Chemical Company BV		1	
Cypermethrin Propiconazole IPBC		1	
TWP 092i; XYLOPREPAR; PRIMOBOIS; XYLAQUA; OWATROL TMU92i; TRAIT' PLUS MULTI HOLZVORBEHANDLUNG; TRAIT' SCHNITT HOLZVORBEHANDLUNG; Holzgrund Klassik WBI; Klarer Holzgrund WBI; Holzschutz WBI; JUBIN Wood impregnation; Protox Kombi Aqua; Unimarc Woody; W2368AC000; NF01A Impregnante all'acqua con antitarlo; Holzschutzgrund -W- (W001000); Fr 6409 Froxynol 606; WOODMARK WASSER-INSEKTIZID-FONDS; DUROXYL AQUA TOTAL WOOD PROTECTION		1	16
WoodchemEQ Limited		1	
Cypermethrin Propiconazole IPBC		1	
Owatrol SANIXYL (Berufsmäßiger Verwender); Owatrol TMU 84 NG (Berufsmäßiger Verwender); Nuncas Wincent Livas Proteggi Legno (Berufsmäßiger Verwender); Presta Universal Wood Preservative (Berufsmäßiger Verwender); Embalit Combi-RTU (Berufsmäßiger Verwender); Soluguard DP (Berufsmäßiger Verwender); Roxil WP (Berufsmäßiger Verwender); Nope WP (Berufsmäßiger Verwender); Hausbug WP (Berufsmäßiger Verwender); Amonn Protektor (Berufsmäßiger Verwender)		1	17
Total sum	35	37	

By sorting out Propiconazole the following products in Table 7 remained (one product family of the authorisation holder ADLER-Werk Lackfabrik Johann Berghofer GmbH & Co KG).

Table 7: Biocidal Products, waterborne, suitable for flow application, efficacy B and P and basically suitable for windows – containing no Propiconazole

Authorisation holder / Active substances / Biocidal product	Market area – sum of counts		Product family
	Austria	Germany	
ADLER-Werk Lackfabrik Johann Berghofer GmbH & Co KG	13	15	
IPBC Tebuconazole	13	15	
Aquawood Ligno+ Base	1	1	1
Aquawood Ligno+ Base Eiche Natur Aquawood Primo A3	1	1	1
Aquawood Primo A1	1	1	1
Aquawood Primo A2	1	1	1
Aquawood Primo A4	1	1	1
Aquawood Primo A5 Aquawood TIG HighRes Castagno	1	1	1
Aquawood Primo A6	1	1	1
Aquawood Primo TIM	1	1	1
Aquawood TIG E Kastanie	1	1	1
Aquawood TIG E Kastanie; Aquawood Ligno+		1	1
Aquawood TIG E1	1	1	1
Aquawood TIG E3	1	1	1
Aquawood TIG E4	1	1	1
Aquawood TIG E5	1	1	1
Aquawood TIG mid brown		1	1
Total sum	13	15	

By sorting out Propiconazole and Tebuconazole no suitable wood preservatives for window framings matching the requirements of Velux were left.

By sorting out IPBC no suitable wood preservatives for window framings, matching the requirements of Velux were left.

For the wood preservative R4BP asset number “AT-0012579-ff” (“Arbezol Aqualin Pro”, ...) it was found that the authorised product in Austria contained IPBC and Propiconazole, while the same product for Germany contained IPBC only (according to the datasets). By asking the authorisation holder Kurt Obermeier they replied that the change in Austria into “IPBC only” is still in progress.

It must be mentioned that the products above were not sorted out according to the specific requirements of Velux on flow application parameters. On the one hand there was a lack of information about these parameters in the technical data sheets, on the other hand, these

parameters need to be checked on manufacturers site and facilities. An adjustment of the production processing by the supplier of the biocidal product would sometimes be desirable to meet the required application parameters but is often limited by the authorisation or notification regulations.

The BAUA database of notified (*“gemeldete”*) biocidal products in Germany (*“offene Suche”*) contained products with 58 combinations of active substances. Each combination contained at least one active substance which was listed in the COMMISSION DELEGATED REGULATION (EU) No 1062/2014, Annex II, Part 1 and to which the approval process was not decided. It is important to be aware of the fact, that the BPR is a two-step process with approval of active substances first and of biocidal products (containing active substances) as a second step. This means that the approval of a biocidal product can only start after positive conclusion of the application process of all included active substances. If the initial application for the approval of a notified active substance is still in progress (as e.g. for Polymeric Betaine), it is impossible to start the process of authorisation of a biocidal product containing this active substance. Consequently, these biocidal products can only be listed as notified biocidal products.

In case of a positive decision on approval of the active substance the notification holder needs to submit an application for authorisation for the biocidal product. If a decision is reached not to approve at least one of the active substances in the biocidal product, and if the so-called "phase-out date"² has already passed, notifications and authorisations of such products are impossible or notified products lose their marketability respectively.

It is debatable if the majority of these notified biocidal products are suitable for window framing in the long term, because it is unclear which decision will be taken about the approval process of the active substances and when. For this reason, these products are not listed in this report.

After sorting out products containing boric acid, Polymeric Betaine, copper, ADBAC, DDAC, Bardap 26, Esbiothrin and diamine, none of the remaining products met the requested criteria.

² When an authorisation for an active substance or a biocidal product is rejected or has expired there are rules on phase out periods on how long the active substance or biocidal product may be sold, transferred or used.

5 Conclusions

For this inquiry on wood preservatives for window framings in Germany and Austria the data sources of ECHA, BAUA, *Umweltbundesamt – Österreichisches Biozidprodukteverzeichnis (ÖBPV)* and *ARGE Holzschutzmittel - Österreichisches Holzschutzmittelverzeichnis 2020 (ARGE-HSM)* were analysed. The wood preservative should be authorised according to BPR or should be a notified wood preservative, waterborne, suitable for industrial use, containing no substances of concern and be suited as a preventive treatment against blue stain and wood destroying fungi.

The data bases were explored, datasets were merged and filtered for active substances suitable for window framings. Duplicates of different data sources were sorted out. Additional information was gained from manufacturers technical data sheets and added to the corresponding dataset.

Altogether, 14 wood preservatives suitable for window framings were found for Austria (10 wood preservatives) or Germany (10 wood preservatives). All wood preservatives contained IPBC. Only one wood preservative contained no Propiconazole but contained Tebuconazole which is expected to expire on September 30th 2022. From this it may be concluded that an expiry of the approval of Propiconazole and Tebuconazole will have tremendous impact on the market of wooden windows and exterior doors. Manufacturers will no longer be able to use well known products that fit the properties profile needed to operate an efficient industrial coating process. With possible restrictions of Tebuconazole in wood preservatives there will be no more wood preservatives left to manufacture durable wooden windows and exterior doors and they cannot be made according to the standards in Europe, Germany and Austria. These restrictions on wood preservatives will be a drawback for the sustainable material wood in window framework and would lead to withdrawing wood as one of the major materials for windows and doors in Europe, thereby removing a sustainable option for manufacturers and consumers.

The specific requirement for flow application was not explored in detail in the present study, since parameters found on technical data sheets were often superficial and the parameters need to be checked at manufacturer's site. An adjustment of the production processing by the supplier of the biocidal product would sometimes be desirable to meet the required application parameters but is often limited by the authorisation or notification regulations. There may be even more restrictions in the suitability of the few listed products due to their processing parameters.

It is very difficult to specify exact periods for active substance and product development and even more difficult for the approval process itself, especially when considering the extremely long assessment period for active substances like for Polymeric Betaine. According to Hans Leithoff from Janssen Pharmaceutica NV / PMP (Leithoff, 2015) at least seven years elapse from existence of a potential active substance to the sale of a new wood preservative. Assuming realistic processing times and longer operational development and decision-making times, this will easily take more than ten years. Based on experience with approval of active substances, Hans Leithoff estimates the realistic processing time until final availability of active substance approval to three to six years and another two years until finalization of product approval.

It is therefore very doubtful that alternative products for this field of application will be on the market by these dates, as stakeholders will need more time to develop wood preservatives without Propiconazole or Tebuconazole.

6 References

- ÖNORM B 3803:2016, Protection of timber in building and construction – Coatings on dimensionally stable wooden outdoor building components – Minimum requirements and testing
- ÖNORM B 3802-3:2015, Protection of timber used in buildings – Part 3: Chemical protection of timber
- DIN 68800-3:2020, Protection of timber – Part 3: Preventive chemical protection of wood with wood preservatives
- EN 335:2013, Durability of wood and wood-based products – Use classes: definitions, application to solid wood and wood-based products
- EN 350:2016, Durability of wood and wood-based products - Testing and classification of the durability to biological agents of wood and wood-based materials
- VFF-Merkblatt HO.11:2020, Holzschutz bei Holz- und Holz-Metall-Fenstern, -Haustüren, - Fassaden und -Wintergärten
- ECHA (European Chemicals Agency) – database on biocidal products (<https://echa.europa.eu/de/information-on-chemicals/biocidal-products>)
- BAUA (Bundesanstalt für Arbeitsschutz und Arbeitsmedizin – Federal Institute for Occupational Safety and Health) – database of authorised biocidal products in Germany (https://www.baua.de/DE/Themen/Anwendungssichere-Chemikalien-und-Produkte/Chemikalienrecht/Biozide/Datenbank-Biozide/Biozide_form.html?resourceId=8684648&input_ =8684642&pageLocale=de &searchEngineQueryString=&prodart=08+%28Holzschutzmittel%29&prodart.GROUP=1&wirkstoff=&wirkstoff.GROUP=1&submit=Suchen)
- BAUA (Bundesanstalt für Arbeitsschutz und Arbeitsmedizin – Federal Institute for Occupational Safety and Health) – database of notified (gemeldete) biocidal products in Germany (offene Suche) (<https://www.baua.de/DE/Biozid-Meldeverordnung/Offen/offen.html>)
- Umweltbundesamt – Österreichisches Biozidprodukteverzeichnis (ÖBPV) (<https://www.biozide.at/bp/bpvz>)
- REGULATION (EU) No 528/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL, of 22 May 2012, concerning the making available on the market and use of biocidal products (BPR)
- ARGE Holzschutzmittel - Österreichisches Holzschutzmittelverzeichnis 2020 (ARGE-HSM) (<https://www.holzschutzmittel.at/media/13542/hmv2020.pdf>)
- Guidance on the Biocidal Products Regulation: Volume II Efficacy – Assessment and Evaluation (Parts B+C), Version 3.0 April 2018 (https://echa.europa.eu/documents/10162/23036412/bpr_guidance_assessment_evaluation_part_vol_ii_part_bc_en.pdf/950efefa-f2bf-0b4a-a3fd-41c86daae468 (europa.eu))
- Leithoff, H. (2015): Entwicklung von Holzschutzmittelwirkstoffen. Alt bewährtes oder Suche nach Alternativen. Wiener Holzschutztage 2015, 102-115

ANNEX A - Additional Questions

What is necessary to get a Biocidal Product Authorization for Use Class 3 under BPR?

In REGULATION (EU) No 528/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL, of 22 May 2012, concerning the making available on the market and use of biocidal products (BPR), Annex VI the “COMMON PRINCIPLES FOR THE EVALUATION OF DOSSIERS FOR BIOCIDAL PRODUCTS” are stated.

The assessment and conclusions contain

- General principles
- Effects on human and animal health
- Effects on the environment
- Effects on target organisms
- Efficacy
- Summary

with an overall integration of conclusions. Relevant parts in this regulation to answer the question are cited below:

Efficacy

51. Data submitted by the applicant shall be sufficient to substantiate the efficacy claims for the product. Data submitted by the applicant or held by the evaluating body must be able to demonstrate the efficacy of the biocidal product against the target organism when used normally in accordance with the conditions of authorisation.

52. Testing should be carried out according to Union guidelines where these are available and applicable. Where appropriate, other methods from the list below can be used. If relevant acceptable field data exist, these can be used.

- *ISO, CEN or other international standard method*
- *national standard method*
- *industry standard method (if accepted by the evaluating body)*
- *individual producer standard method (if accepted by the evaluating body)*
- *data from the actual development of the biocidal product (if accepted by the evaluating body).*

We limit to the information about the requirements for efficacy (51.). The Guidance on the BPR: Volume II Efficacy – Assessment and Evaluation (Parts B+C), Version 3.0 April 2018

refers to EN 599-1, wherein the required data for Use class 3 are listed in table 3a (for surface treatment) and table 3b (for impregnation process).

What are the consequences of having a product only registered for Indoor use: does this mean that it cannot be used for outdoor products like windows?

According to the competent authority in Austria, the specification "Field of use" in the ECHA-database refers to whether the wood preservative is to be applied/processed "indoor" or "outdoor". This distinction does not refer to the use classes according to wood preservation standards (EN 335) where the final product is used (use class 2, 3).

We want to point out, that this contrasts with Guidance on the BPR: Volume II Efficacy – Assessment and Evaluation (Parts B+C), Version 3.0 April 2018. In this Guidance the field of use is defined as the application aim ("What is the product used for?") and referred to the use classes described in EN 335 (Use class 1 – 5). Unfortunately, our request to BAUA did not yield in a response until completion of this study.

Regarding the intended use: if a product is only registered for professional use, does that mean that it is not suitable for Industrial use?

According to the competent authority in Austria and according to the competent authority in Germany, if a product is registered only for "general public" and/or "professional use", it is not approved for "industrial use".

Timeline and criteria for new biocidal products to get on the Österreichisches Holzschutzmittelverzeichnis list?

If the wood preservative is authorised according to BPR or an application for admission has been submitted, a registration at the "Österreichisches Holzschutzmittelverzeichnis" takes about three weeks.