Regulation (EU) No 528/2012 concerning the making available on the market and use of biocidal products

**PRODUCT ASSESSMENT REPORT OF A BIOCIDAL PRODUCT FOR NATIONAL AUTHORISATION APPLICATIONS**

(submitted by the evaluating Competent Authority)



TX201 TRAITEMENT MEUBLES PARQUETS - SPRAY

 Product type 8

Permethrin

Case Number in R4BP: BC-FS022938-16

Evaluating Competent Authority: FR

Date: May 2018

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# CONCLUSION

**Conclusion for Physico-chemistry:**

The product TX 201 TRAITEMENT MEUBLES PARQUETS SPRAY is a translucent colourless solvent based formulation. The surface tension is 25.31mN/m. The product is classified H304 Cat 1 Mention Danger and H222/H229 according to CLP criteria.

The product is stable after storage 7 days at 0°C, 8 weeks at 40°C and 24 months at 20°C. Compatibility with metallic sprays without varnish has been demonstrated with storage stability studies. The product (spray version) should not be stored at a temperature higher than 40°C.

An analytical method for the determination of the active substance in the biocidal product has been provided and is validated.

**Conclusion for Efficacy:**

French competent authorities (FR CA) assessed that the product 11LBCEOL03 (identical to the TX201 TRAITEMENT MEUBLES PARQUETS – SPRAY without gaz propellant) has shown a sufficient efficacy for the preservation of wood in service used:

* for the preventive control of wood boring beetles (*Hylotrupes bajulus, Anobium punctatum* and *Lyctus brunneus*) and termites (*Reticulitermes spp*., *Coptotermes spp.* and *Heterotermes spp*.), in use class 1 by superficial application;
* for the curative control of wood in service against wood boring beetles (*Hylotrupes bajulus, Anobium punctatum* and *Lyctus brunneus*) and termites (*Reticulitermes spp., Coptotermes spp.* and *Heterotermes spp.*), indoor, by superficial application, completed by injection if need be.

The application rates validated are the following:

* Preventive treatments: superficial application at 200 mL of product 11LBCEOL03 / m² of wood
* Curative treatment: superficial application at 300 mL of product 11LBCEOL03 / m² of wood (injection 150 mL of product 11LBCEOL03 / m² of wood if need be).

**Conclusion for Human health:**

Risk is acceptable for non-professional users (without PPE) and for professional users without PPE for spray application alone and with gloves for spraying combined with injection.

There is no risk identified for general publics.

**Conclusion for Risk for consumers via residues:**

The acute or chronic exposure to residues in food resulting from the intended uses is unlikely to cause a risk to consumers. Regarding consumer health protection, there are no objections against the intended uses. Wood treated with TX201 TRAITEMENT MEUBLES PARQUETS – SPRAY must contain label restrictions against use in contact with livestock, food and feed.

**Conclusion for Ecotoxicology:**

Considering the intended uses of the product TX201 TRAITEMENT MEUBLES PARQUETS – SPRAY, no direct or indirect contamination of the STP, surface water (including sediment) and soil (including groundwater) is expected. Regarding the air compartment, considering the physical and chemical properties of the active substance permethrin and the intended uses (indoor only), the emissions to the atmosphere will be negligible.

Therefore, the risk for all compartments and the risk for primary and secondary poisoning are considered acceptable under the use conditions provided in the SPC.

# ASSESSMENT REPORT

## Summary of the product assessment

### Administrative information

#### Identifier of the product / product family

| **Identifier[[1]](#footnote-1)** | **Country (if relevant)** |
| --- | --- |
| TX201 TRAITEMENT MEUBLES PARQUETS – SPRAY | France |

#### **Other commeciral names :**

* AXTON TRATAMIENTO AEROSOL PLUS MUEBLES Y PARQUES (Spain)
* AXTON TRATAMENTO PLUS MOVEIS E PARQUET AEROSSOL (Portugal)
* V33 IMPREGNAT DO MEBLI I BOAZERII PLUS (Poland)
* V33 TRAITEMENT DU BOIS MEUBLES NEUFS ET ANCIENS/HOLZBEHANDLUNG NEUE UND ANTIKE MŐBEL/TRATTAMENTO MOBILI NOVI E ANTICHI (Switzerland)
* V33 FLOORS FURNITURE (Cyprus)
* V33 FLOORS FURNITURE (Greece)
* AXTON TRATTAMENTO ANTITARLO SPRAY MOBILI INTERNO (Italy)

#### Authorisation holder

|  |  |  |
| --- | --- | --- |
| **Name and address of the authorisation holder** | **Name** | V33 |
| **Address** | La Muyre39 210 DomblansFrance |
| **Authorisation number** | FR-2018-0051 |
| **Date of the authorisation** | 21/08/2018 |
| **Expiry date of the authorisation** | 20/08/2028 |

#### Manufacturer(s) of the products of the family

|  |  |
| --- | --- |
| **Name of manufacturer** | V33 |
| **Address of manufacturer** | La Muyre39 210 Domblans, France |
| **Location of manufacturing sites** | La Muyre39 210 Domblans, France |

#### Manufacturer(s) of the active substance(s)

|  |  |
| --- | --- |
| **Active substance** | Permethrin |
| **Name of manufacturer** | LANXESS Deutschland GmbHMaterial Protection Products |
| **Address of manufacturer** | Kennedyplatz 1, D-50569 Köln, Germany |
| **Location of manufacturing sites** | Bayer Vapi Private LimitedPlot # 306/3 II Phase, GIDC, Vapi – 396 195 Gujarat, India |

|  |  |
| --- | --- |
| **Active substance** | Permethrin |
| **Name of manufacturer** | Caldic Denmark A/S (acting for Tagros Chemicals India Ltd.) |
| **Address of manufacturer** | "Jhaver Centre", Rajah Annamalai Building,IV Floor, 72, Marshalls Road, Egmore, Chennai-600 008, India |
| **Location of manufacturing sites** | A4/1&2 Sipcot Industrial Complex, Kudikadu Cuddalore, Tamil Nadu India |

### Product composition and formulation

NB: the full composition of the product according to Annex III Title 1 should be provided in the confidential annex.

Does the product have the same identity and composition as the product evaluated in connection with the approval for listing of the active substance(s) on the Union list of approved active substances under Regulation No. 528/2012?

Yes [ ]

No [x]

#### Identity of the active substance

|  |
| --- |
| **Main constituent(s)** |
| **ISO name** | Permethrin |
| **IUPAC or EC name** | 3-phenoxybenzyl (1RS,3RS;1RS,3SR)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate |
| **EC number** | 258-067-9 |
| **CAS number** | 52645-53-1 |
| **Index number in Annex VI of CLP** | 613-058-00-2 |
| **Minimum purity / content** | ≥ 93% w/w sum of all isomers |
| **Structural formula** |  |

#### Candidate(s) for substitution

The active substance permethrin is not a candidate for substitution in accordance with Article 10 of the BPR (Regulation (EU) n°. 528/2012).

#### Qualitative and quantitative information on the composition of the biocidal product[[2]](#footnote-2)

| **Common name** | **IUPAC name** | **Function** | **CAS number** | **EC number** | **Content (%)** |
| --- | --- | --- | --- | --- | --- |
| Permethrin | 3-phenoxybenzyl(1RS,3RS;1RS,3SR)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate | Active substance | 52645-53-1 | 258-067-9 | 0.56 |
| ShellSol D60 | Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics | Non-active substance[[3]](#footnote-3) | 64742-48-9 | 918-481-9 | 79.40 |

#### Information on technical equivalence

Not relevant.

#### Information on the substance(s) of concern

Please see the confidential annex for further details.

#### Type of formulation

|  |
| --- |
| AE (aerosol dispenser) |

### Hazard and precautionary statements[[4]](#footnote-4)

**Classification and labelling of the products of the family according to the Regulation (EC) 1272/2008**

*[It should also be stated if some P statements triggered by the criteria in CLP has been excluded due to the risk assessment.]*

| **Classification** |
| --- |
| Hazard category | Flam. Aerosol 1Aquatic Acute 1 Aquatic Chronic 1  |
| Hazard statement | H222: Extremely flammable aerosolH229: pressurised container. May burst if heated.H400, Very toxic to aquatic lifeH410, Very toxic to aquatic life with long lasting effects. |
|  |
| **Labelling** |
| Signal words | Résultat de recherche d'images pour "ghs02"Danger Danger  |
| Hazard statements | H222: Extremely flammable aerosolH229: pressurised container. May burst if heated.H410, Very toxic to aquatic life with long lasting effects. |
| Precautionary statements | P102: Keep out of reach of childrenP103: Read label before useP210, P211, P251 and P410 + P412: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Protect from sunlight. Do not expose to temperatures exceeding 50°C/ 122°F.P273: Avoid release to the environmentP391: Collect spillageP405 Store locked upP501: Dispose of contents/container to hazardous waste |
|  |
| Note | Further labelling statements under Regulation (EC) No 1272/2008:EUH066 : Repeated exposure may cause skin dryness or cracking EUH208 : Contains permethrin. May produce an allergic reaction. |

### Authorised use(s)

#### Use description

Table 1. Use # 1 – Preventive application

|  |  |
| --- | --- |
| Product Type(s) | PT08 – wood preservatives |
| Where relevant, an exact description of the authorised use | Preventive treatment for wood on use class 1 |
| Target organism (including development stage) | Wood boring beetles House longhorn beetle (Hylotrupes bajulus) \_ Larvae Common furniture beetle (Anobium punctatum) \_ Larvae Powder post beetle (Lyctus brunneus) \_ Larvae Subterranean Termites (Reticulitermes spp., Heterotermes spp. and Coptotermes spp.) \_ Workers, soldiers and nymphs |
| Field of use | Indoor use, on softwood and hardwood. |
| Application method(s) | Superficial application / spray |
| Application rate(s) and frequency | The product is ready to use aerosolThe application is performed by sprayingApplication rate is in the analytical zone:UC1: 200 mL (after degassing) /m² |
| Category(ies) of user(s) | Professional and non-professional  |
| Pack sizes and packaging material | 520mL aerosol white tin cans without internal varnish and with polypropylene diffuser |

#### Use-specific instructions for use

|  |
| --- |
|  |

#### Use-specific risk mitigation measures

|  |
| --- |
|  |

#### Where specific to the use, the particulars of likely direct or indirect effects, first aid instructions and emergency measures to protect the environment

|  |
| --- |
|  |

#### Where specific to the use, the instructions for safe disposal of the product and its packaging

|  |
| --- |
|  |

#### Where specific to the use, the conditions of storage and shelf-life of the product under normal conditions of storage

|  |
| --- |
|  |

#### Use description

Table 2. Use # 2 – Curative application

|  |  |
| --- | --- |
| Product Type(s) | PT08 – wood preservatives |
| Where relevant, an exact description of the authorised use | Curative treatment for wood in service |
| Target organism (including development stage) | Wood boring beetles* House longhorn beetle (*Hylotrupes bajulus*)
* Common furniture beetle (*Anobium punctatum*)
* Powder post beetles (*Lyctus brunneus*)

Termites (*Reticulitermes spp. Coptotermes spp. and Heterotermes spp*.) |
| Field of use | Curative treatment for wood in service (indoor) |
| Application method(s) | Superficial application / sprayInjection (combined with a superficial application) |
| Application rate(s) and frequency | The product is ready to use.The application is performed by spraying.The application rate is : * 300 mL of product / m² of wood

When the application is performed by injection (combined with a superficial application), the application rate is : 150 mL (after degassing) of product / m² of wood (+ 300 mL of product / m² of wood for the superficial application) |
| Category(ies) of user(s) | Professionals and non-professionals |
| Pack sizes and packaging material | 520mL aerosol white tin cans without internal varnish and with polypropylene diffuser |

#### Use-specific instructions for use

|  |
| --- |
| * Curative treatments performed by injection must always be combined with curative treatments applied by superficial application.
 |

#### Use-specific risk mitigation measures

|  |
| --- |
| For professionals:- Wear protective chemical resistant gloves (glove material to be specified by the authorisation holder within the product information) during application of the product by spraying. |

#### Where specific to the use, the particulars of likely direct or indirect effects, first aid instructions and emergency measures to protect the environment

|  |
| --- |
|  |

#### Where specific to the use, the instructions for safe disposal of the product and its packaging

|  |
| --- |
|  |

#### Where specific to the use, the conditions of storage and shelf-life of the product under normal conditions of storage

|  |
| --- |
|  |

### General directions for use

#### Instructions for use

|  |
| --- |
| - Always read the label or leaflet before use and follow all the instructions provided. - The users should inform if the treatment is ineffective and report straightforward to the authorisation holder |

#### Risk mitigation measures

|  |
| --- |
| - Do not apply on wood likely to be in contact with food, feed, drinks and livestock- Keep out of reach of the children.- Avoid contact with skin.- Wash hands thoroughly after handling. |

#### Particulars of likely direct or indirect effects, first aid instructions and emergency measures to protect the environment

|  |
| --- |
| - Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical advice immediately if symptoms occur and/or large quantities have been inhaled.- Do not give fluids or induce vomiting in case of impaired consciousness; place in recovery position and seek medical advice immediately.- Ingestion: Wash out mouth with water. Do not drink or induce vomiting. Contact poison treatment specialist. Seek medical advice immediately if symptoms occur and/or large quantities have been ingested.- Skin contact: Remove contaminated clothing and shoes. Wash contaminated skin with soap and water. Contact poison treatment specialist if symptoms occur.- Eye contact: Immediately flush with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses if easy to do. Continue to rinse with tepid water for at least 10 minutes. Get medical attention if irritation or vision impairment occurs.- Keep the container or label available. |

#### Instructions for safe disposal of the product and its packaging

|  |
| --- |
| - Do not discharge unused product on the ground, into water courses, into pipes (sink, toilets, ...) or down the drains.- Dispose of unused product, its packaging and any other waste in accordance with local regulations. |

#### Conditions of storage and shelf-life of the product under normal conditions of storage

|  |
| --- |
| * Shelf life: 24 months
* Do not store at temperature superior to 40°C.
 |

### Other information

|  |
| --- |
| * Treated wood should not be intended for uses involving contact with food, feed or livestock.
 |

### Packaging of the biocidal product

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Type of packaging**  | **Size/volume of the packaging** | **Material of the packaging** | **Type and material of closure(s)** | **Intended user (e.g. professional, non-professional)** | **Compatibility of the product with the proposed packaging materials (Yes/No)** |
| Aerosol tin cans | 520mL | White Tin can without internal varnish | Polypropylene diffuser | Professional and non professional | Yes (see the results of long term stability study) |

### Documentation

#### Data submitted in relation to product application

**Physico-chemistry:**

The product is not the representative product of the CAR. The applicant has provided studies on the formulation TX201 TRAITEMENT MEUBLES ET PARQUETS SPRAY (11LBCEOL03 aerosol).

**Efficacy:**

The product 11LBCEOL03 is identical to the product 11LBCEOL03 aerosol without the propellant gaz. Once the product TX201 TRAITEMENT MEUBLES ET PARQUETS - SPRAY (11LBCEOL03 aerosol) is sprayed or injected, only remain the liquid without the propellant gaz which is identical to the product TX201 TRAITEMENT MEUBLES ET PARQUETS. Then the efficacy studies performed with the product 11LBCEOL03 are also applicable for the product TX201 TRAITEMENT MEUBLES ET PARQUETS - SPRAY (11LBCEOL03 aerosol)

The following efficacy studies were submitted:

* Laboratory efficacy study conducted according to the standard EN 46-1[[5]](#footnote-5), with the product 11LBCEOL03 (0.7 % w/w permethrin), after ageing following EN 73 (evaporating procedure);
* Laboratory efficacy study conducted according to the standard EN 20-1[[6]](#footnote-6), with the product 11LBCEOL03 (0.7 % w/w permethrin), after ageing following EN 73 (evaporating procedure);
* Laboratory efficacy study conducted according to the standard EN 49-1[[7]](#footnote-7), with the product 11LBCEOL03 (0.7 % w/w permethrin), after ageing following EN 73 (evaporating procedure);
* Laboratory efficacy study conducted according to the standard EN 118[[8]](#footnote-8), with the product 11LBCEOL03 (0.7 % w/w permethrin), after ageing following EN 73 (evaporating procedure) against *Reticulitermes grassei*;
* Laboratory efficacy study conducted according to the standard EN 118, with the product 11LBCEOL03 (0.7 % w/w permethrin), after ageing following EN 73 (evaporating procedure) against *Heterotermes tenuis*;
* Laboratory efficacy study conducted according to the standard EN 118, with the product 11LBCEOL03 (0.7 % w/w permethrin), after ageing following EN 73 (evaporating procedure) against *Coptotermes gestroi*;
* Laboratory efficacy study conducted according to the standard EN 370[[9]](#footnote-9), with the product 11LBCEOL03 (0.7 % w/w permethrin) after ageing following EN 73 (evaporating procedure)
* Laboratory efficacy studies conducted according to the standard EN 1390[[10]](#footnote-10), with the product 11LBCEOL03 (0.7 % w/w permethrin).
* Laboratory efficacy study conducted according to the standard EN 48[[11]](#footnote-11), with the product 11LBCEOL03 (0.7 % w/w permethrin).

#### Access to documentation

A letter of access from Lanxess and Tagros to Annex II data of permethrin has been granted to V33.

## Assessment of the biocidal product

### Intended use(s) as applied for by the applicant

Table 3. Intended use # 1 – Preventive application[[12]](#footnote-12)

|  |  |
| --- | --- |
| Product Type(s) | PT08 – wood preservatives |
| Where relevant, an exact description of the authorised use | The product is a ready-to-use solvent-based used for the preventive and curative treatment of interior woods |
| Target organism (including development stage) | Wood boring beetlesHouse longhorn beetleCommon furniture beetlePowder post beetleSubterranean termites (genus *Reticulitermes, Heterotermes and Coptotermes*)All stages of development |
| Field of use | Indoor use |
| Application method(s) | Spraying  |
| Application rate(s) and frequency | 200 mL/m² (or 158 g/m² with a product density of 0.79) |
| Category(ies) of user(s) | Professional and non-professional |
| Pack sizes and packaging material | 520mL aerosol white tin cans without internal varnish and with polypropylene diffuser |

Table 4. Intended use # 2 – Curative application[[13]](#footnote-13)

|  |  |
| --- | --- |
| Product Type(s) | PT08 – wood preservatives |
| Where relevant, an exact description of the authorised use | The product is a ready-to-use solvent-based used for thepreventive and curative treatment of interior woods |
| Target organism (including development stage) | Wood boring beetlesHouse longhorn beetleCommon furniture beetlePowder post beetleSubterranean termites (genus *Reticulitermes, Heterotermes and Coptotermes*)All stages of development |
| Field of use | Indoor use |
| Application method(s) | Spraying and brushingInjection (in combination with a superficial application) |
| Application rate(s) and frequency | Superficial application: 300 mL/m² (or 237 g/m² with a product density of 0.79)Injection: in the holes made by the insects |
| Category(ies) of user(s) | Professional and non-professional |
| Pack sizes and packaging material | 520mL aerosol white tin cans without internal varnish and with polypropylene diffuser |

### Physical, chemical and technical properties

The product 11LBCEOL03 aerosol (TX201 TRAITEMENT MEUBLES ET PARQUETS SPRAY) is a ready-to-use solvent-based wood preservative containing 0.56% w/w permethrin (0.70% w/w permethrin in the liquid formulation without propellant) as active substance.

| **Property** | **Guideline and Method** | **Purity of the test substance (% (w/w)** | **Results** |  | **Reference** |
| --- | --- | --- | --- | --- | --- |
| Physical state at 20 °C and 101.3 kPa | Visualobservation | Product11LBCEOL03aerosolBatch number:000870810Containing 0.56%w/w of permethrin | Translucent colourless liquid at initial time and after 8 weeks at 40 ± 2°C | Acceptable |  |
| Colour at 20 °C and 101.3 kPa | Visualobservation |
| Odour at 20 °C and 101.3 kPa | No guidelinerequired | The product 11LBCEOL03 has a petroleum solvent odour (hydrocarbons). |
| Acidity / alkalinity |  |  | As the product 11LBCEOL03 is a non-aqueous ready-to-use product, it is not intended to be applied as aqueous solutions (see the table of practical use of the product), therefore the determination of pH is not justified | Acceptable. According to Echa guidance for the assessment of biocidal products, pH is only relevant for water based formulations and formulations which are intended to be diluted. In this case, the product is ready to use and is mainly composed of organic solvent. Therefore, pH is not relevant. |  |
| Relative density / bulk density | OECD GuidelineNo.109 (2012)(pycnometermethod) | Product 11LBCEOL03Batch number:240815.03Containing 0.70% w/w ofpermethrin | The mean relative density of the test item 11LBCEOL03 is D (20°C / 4°C) =0.791 ± 0.001. | Acceptable. | Legay S. 2015Study 402/15/1172F/cdef-e |
| Storage stability test – **accelerated storage after 8 weeks at 40 ± 2°C** | CIPAC MT 46.3method (storagestability)Analytical method validated | Product11LBCEOL03aerosolBatch number:000870810Containing 0.56%w/w of permethrin | Packaging test: The test item was in its commercial packaging (metallic sprays without internal varnish and with black caps (nominal content: 400 mL)) and also in inter packaging (glass bottles).

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| Test | At initial time | After 8 weeksat 40 ± 2°C |
| Appearanceof the testitem (in glass bottle) | Clear colourless liquidNo deposit or impurities |
| Permethrincontent (%w/w) (in glass bottle) | 0.734 | 0.690(- 6.0% *vs.* the valueat initial time) |
| Appearanceof thecommercialpackaging containing test item | Metallic sprays without internal varnish and with black caps. No visible sign of corrosion and degradation. |
| Weight of thecommercialpackaging (g)  | 389.80 | 389.63 (- 0.04%) |
| Satisfactory operation ofthe aerosol and sprayvolume | The mean volume ofspray after a 5-s spray was 4.27 mL.The nozzles of the aerosols were checked and no blocking was observed. | The mean volume ofspray after a 5-s spray was 4.13 mL.The nozzles of the aerosols were checked and no blocking was observed. |
| Spray diameter andpattern | The mean spraydiameter was 6-7 cm. The shape of thespray on the wetted patch was circular. | The mean spraydiameter was 6-7 cm.The shape of the spray on the wetted patch was circular. |

 | Content of a.i decreases by more than 5%. However, the variations of active substance content is below 10% after long term storage. Threfore, no further data are necessary regarding degradation product.It should be noticed that the content of a.i is the related to the liquid formulation. If the spray version is taken into account, the content is lower due to the fact that the propellant gases are part of the composition. However, in this study, test was performed with the liquid formulation stored in glass bottle for a.i determination, but also some tests were performed with the commercial packaging for technical properties. | Legay S. 2015402/14/1198F/abcdef-e |
| Storage stability test – **accelerated storage** | CIPAC MT 46.3method (storagestability) | Product 11LBCEOL03Batch number:240815.03Containing 0.70% w/w ofpermethrinAnalytical method validated | The test item in its commercial packaging (metal (tin plate) can without internal varnish) and in inert packaging (glass bottles) are considered to be stable after the accelerated storage procedure (14 days at 54 ± 2°C).

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| Test | At initial time | After 14 daysat 54 ± 2°C |
| Appearanceof the testitem (glass bottles) | Translucent colourless liquidNo deposit or phase partition |
| Permethrincontent (%w/w) (glass bottles) | 0.703 | 0.725(+ 3.1% *vs.* thevalue at initialtime) |
| Appearanceof thecommercialpackaging containing test item | 1L metal (tin plate) can withoutinternal varnish. No sign of corrosion and degradation |
| Weight of thecommercialpackaging (g) | 929.20 | 928.10 (- 0.12%) |

 | Acceptable. The product 11LBCEOL03 (liquid formulation) is stable after storage 14 days at 54°C glass flasks and in metal (tin plate) can without varnish. For the spray version, stability was only demonstrated at 40°C. Therefore, for TX201 TRAITEMENT MEUBLES ET PARQUETS SPRAY, it should be mentioned to store the product below 40°C.  | Legay S. 2016Study 402/15/1172F/abg-e |
| Storage stability test – **long term storage at ambient temperature** | TechnicalMonographNo.17, 2ndedition, CropLifeAnalytical method validated | Product11LBCEOL03aerosolBatch number:000870810Containing 0.56%w/w of permethrin | The test item and its commercial packaging (metallic sprays without internal varnish and with black caps (nominal content: 400 mL)) are considered to be stable after the long term storage procedure (6 months at 20 ± 2°C).

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| Test | At initial time | After 6 monthsat 20 ± 2°C inmetallic spray withoutinternal varnish |
| Appearanceof the testitem  | Clear colourless liquid. No deposit orimpurities | Transparentcolourless liquidNo deposit or phase partition |
| Permethrincontent (%w/w) | 0.734 | 0.701(- 4.5% *vs.* the value at initial time) |
| Appearanceof thecommercialpackaging containing test item | Metallic sprays without internal varnish and with black caps. No visible sign of corrosion and degradation. |
| Weight of thecommercialpackaging (g) | / | - 0.06% |
| Satisfactory operation ofthe aerosol and sprayvolume | The mean volume ofspray after a 5-s spray was 4.27 mL.The nozzles of the aerosols were checked and no blocking | The mean volume ofspray after a 5-s spray was 4.44 mL.The nozzles of the aerosols were checked and no blocking was observed. |
| Spray diameter andpattern | The mean spraydiameter was 6-7 cm. The shape of thespray on the wetted patch was circular. | The mean spraydiameter was 5.5 cm. The shape of thespray on the wetted patch was circular. |

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| **Test** | **After 12 months at 20 ± 2°C in metallic sprays without internal varnish** |
| Appearance of the test item in inert packaging | Transparent colourless liquid No deposit or phase partition |
| Permethrin content (% w/w) | 0.710(- 3.3% *vs.* the value at initial time)  |
| Appearance of the commercialpackaging | No visible sign of corrosion or degradation. |
| Weight of the commercial packaging (g) | - 0.12% |
| Satisfactory operation of the aerosol and spray volume | Mean volume of spray after a 5-s spray: 4.55 mL. No blocking of the nozzles. |
| Spray diameter and pattern | The mean spray diameter: 6.5-7 cm.Shape of the spray : circular |

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| **Test** | **After 18 months at 20 ± 2°C in metallic sprays without internal varnish** | **After 24 months at 20 ± 2°C in metallic sprays without internal varnish** |
| Appearance of the test item in inert packaging | Transparent colourless liquid No deposit or phase partition | Transparent colourless liquid No deposit or phase partition |
| Permethrin content (% w/w) | 0.674(- 8.2% *vs.* the value at initial time)  | 0.672(- 8.5% *vs.* the value at initial time)  |
| Appearance of the commercialpackaging | No visible sign of corrosion or degradation. | No visible sign of corrosion or degradation. |
| Weight of the commercial packaging (g) | - 0.17% | - 0.23% |
| Satisfactory operation of the aerosol and spray volume | Mean volume of spray after a 5-s spray: 4.06 mL. No blocking of the nozzles. | Mean volume of spray after a 5-s spray: 5.92 mL. No blocking of the nozzles. |
| Spray diameter and pattern | The mean spray diameter: 5-5.5 cm.Shape of the spray : circular | The mean spray diameter: 5.5-6 cm.Shape of the spray : circular |

The test item and its commercial packaging are considered to be stable after the long term storage procedure (24 months at 20 ± 2°C) | Acceptable. The product is stable after storage 24 months at 20°C in metallic aerosol without varnish. | Legay S. 2016402/14/1198F/1/g/T6M-e |
| Storage stability test – **low temperature stability test for liquids** | CIPAC MT 39.3method (2000) | Product 11LBCEOL03Batch number:240815.03Containing 0.70% w/w ofpermethrin | Test was performed with the product 11LBCEOL03, which is not packed in an aerosol. The only difference between formulations 11LBCEOL03 and 11LBCEOL03 aerosol is the addition of a propellant mixture in the product 11LBCEOL03 aerosol. The propellant contains isobutane, butane and propane with the respective freezing points -159.4°C, -138.3°C and -187.6°C. Consequently, the result of the storagestability at low temperature according CIPAC MT 39.3 for the liquid formulation of 11LBCEOL03 aerosol is expected to be the same as for the formulation 11LBCEOL03. Therefore, the cold stability was determined on the liquid formulation without the propellant gas (product 11LBCEOL03)According to CIPAC MT 39.3 method (climatic chamber), the liquid formulation 11LBCEOL03 aerosol without propellant gas is considered to be stable after astorage for 7 days at 0 ± 2°C: no deposit or phase partition was observed. | Bridging is acceptable. The product is stable after storage 7 days at 0°C. | Legay S. 2015Study 402/15/1172F/cdef-e |
| Effects on content of the active substance and technical characteristics of the biocidal product - **light** |  |  | Not required as the commercial packaging of the product 11LBCEOL03 aerosol are opaque (metallic sprays without internal varnish and with black caps). | Acceptable. | / |
| Effects on content of the active substance and technical characteristics of the biocidal product – **temperature and humidity** |  |  | See accelerated storage stability results. | The test item 11LBCEOL03 aerosol is considered to be stable after 14 days at 54°C, 8 weeks at 40 ± 2°C and after 7 days at 0°C.  | / |
| Effects on content of the active substance and technical characteristics of the biocidal product - **reactivity towards container material** |  |  | See the storage stability test – accelerated storage and long term storage at ambient temperature | Acceptable. Compatibility with the packaging (metal can) has been demonstrated during the stability studies. | / |
| Wettability |  |  | Not required as the product is a ready-to-use aerosol | Not applicable. | / |
| Suspensibility, spontaneity and dispersion stability |  |  | Not required as the product is a ready-to-use aerosol | Not applicable. | / |
| Wet sieve analysis and dry sieve test |  |  | Not required as the product is a ready-to-use aerosol | Not applicable. | / |
| Emulsifiability, re-emulsifiability and emulsion stability |  |  | Not required as the product is a ready-to-use aerosol | Not applicable. | / |
| Disintegration time |  |  | Not required as the product is a ready-to-use aerosol | Not applicable. | / |
| Particle size distribution, content of dust/fines, attrition, friability |  |  | Not required as the product is a ready-to-use aerosol | Not applicable. | / |
| Persistent foaming |  |  | Not required as the product is a ready-to-use aerosol | Not applicable. | / |
| Flowability/Pourability/Dustability |  |  | Not required as the product is a ready-to-use aerosol | Not applicable. | / |
| Burning rate — smoke generators |  |  | Not required as the product is a ready-to-use aerosol | Not applicable. | / |
| Burning completeness — smoke generators |  |  | Not required as the product is a ready-to-use aerosol | Not applicable. | / |
| Composition of smoke — smoke generators |  |  | Not required as the product is a ready-to-use aerosol | Not applicable. | / |
| Spraying pattern — aerosols | No guidelinerequired | Product11LBCEOL03aerosolBatch number:000870810Containing 0.56%w/w of permethrin | The volume of spray is considered to be stable after the accelerated storage procedure (8 weeks at 40 ± 2°C), it is respectively 4.27 mL/5-s spray at initial time and 4.13 mL/5-s spray after accelerated storage procedure. The nozzles of the aerosols were checked and no blocking was observed. The spray diameter of the test item is stable (6-7 cm) after the accelerated storageprocedure for 8 weeks at 40 ± 2°C. The shape of the spray on the wetted patch is circular. | Acceptable. Results can be considered similar before and after storage.  | / |
| Physical compatibility |  |  | Not applicable. 11LBCEOL03 is a ready-to-use product and is not intended to be used in conjunction with any other products or active substances. | Not applicable. | / |
| Chemical compatibility |  |  | Not applicable. 11LBCEOL03 is a ready-to-use product and is not intended to be used in conjunction with any other products or active substances. | Not applicable. | / |
| Degree of dissolution and dilution stability |  |  | Not required as the product is a ready-to-use liquid. | Not applicable. | / |
| Surface tension | OECD TestGuideline115EC method A5(ring method) | Product 11LBCEOL03Batch number:240815.03Containing 0.70% w/w ofpermethrin | The surface tension of the pure test item 11LBCEOL03 without the propellant gas was 25.31 mN/m at 19.3 ± 0.5°C. The test item was considered as surface-active in the experimental conditions used. | Acceptable. The preparation is surface active. | Legay S. 2015Study 402/15/1172F/cdef-e |
| Viscosity | OECD TestGuideline 114ISO Standard2431 (flow cupmethod) | Product 11LBCEOL03Batch number:240815.03Containing 0.70% w/w ofpermethrin | The kinematic viscosity of the liquid formulation 11LBCEOL03 without the propellant gas is found to be < 6.62 mm²/s at 20.0 ± 0.5°C and < 6.62 mm²/s at 40.0 ± 0.5°C | Acceptable. The product is classified H304 Cat1 Mention Danger according to CLP criteria (content of H304 compounds>10% and viscosity<20.5mm2/s). | Legay S. 2015Study 402/15/1172F/cdef-e |

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| **Conclusion on the physical, chemical and technical properties of the product** |
| The product 11LBCEOL03 aerosol is a translucent colourless liquid with a petroleum solvent odour (hydrocarbons). The relative density of the liquid formulation of 11LBCEOL03 aerosol without propellant gas is 0.791.After accelerated storage procedure (8 weeks at 40 ± 2°C) the appearance of the product 11LBCEOL03 aerosol and its commercial packaging (metallic sprays without internal varnish and with black caps (nominal content: 400 mL)) are considered to be stable. The satisfactory operation of the aerosol and the spray volume of the test item are considered to be stable after an accelerated storage procedure for 8 weeks at 40 ± 2°C. The permethrin content is 0.734% w/w at initial time and 0.690% w/w after 8 weeks at 40 ± 2°C in glass flask. With variation of - 6.0% *vs*. the value at initial time of permethrin, the formulation is not considered to be stable after the accelerated storage procedure. However, since results after long term storage are acceptable (variations below 10%), degradation products identification are not necessary.Stability for the spray version of TX201 TRAITEMENT MEUBLES ET PARQUETS was only demonstrated at 40°C. Therefore it should be mentioned to store the product below 40°C.After a long term storage procedure (24 months at 20 ± 2°C) the appearance of the product 11LBCEOL03 aerosol and its commercial packaging (metallic sprays without internal varnish and with black caps (nominal content: 400 mL)) are considered to be stable. The permethrin content is 0.734% w/w at initial time and 0.672% w/w after 24 months at 20 ± 2°C in the aerosol packaging. With variation - 8.5% after 24 months *vs.* the value at initial time of permethrin, the test item is considered to be stable after the long term storage procedure in the commercial packaging. The satisfactory operation of the aerosol and the spray volume of the test item are considered to be stable after a long term storage procedure for 24 months at 20 ± 2°C. The liquid formulation of 11LBCEOL03 aerosol without propellant gas is stable after 7 days at 0°C, no deposit or phase partition was observed. The dynamic viscosity of the product is < 6.62 mm²/s at 20°C and 40°C, and the surface tension of liquid formulation of 11LBCEOL03 aerosol without propellant gas is 25.31 mN/m (surface active material). Therefore, as the content of H304 compounds in the product is >10%, the product is classified H304 Cat 1 Mention Danger.Shelf life: 24 months. Labelling Mention: H304 Cat 1 Danger. Do not store at a temperature higher than 40°C. |

### Physical hazards and respective characteristics

| **Property** | **Guideline and Method** | **Purity of the test substance (% (w/w)** | **Results** | **Comments** | **Reference** |
| --- | --- | --- | --- | --- | --- |
| Explosives |  |  | Not required as the product 11LBCEOL03 aerosol does not contain explosive substances. | Acceptable. The product is not explosive. | / |
| Flammable gases |  |  | Not required as the product is a ready-to-use aerosol. | Not applicable. | / |
| Flammable aerosols |  |  | Ignition distance test and enclosed space ignition test were not performed as the product 11LBCEOL03 aerosol is classified by default Flam. Aerosol 1, H222 Extremely flammable aerosol and H229, GHS02 Danger. | Acceptable. The product is classified due the propellant gases.  | / |
| Oxidising gases |  |  | Not required as the product is a ready-to-use aerosol. | The product does not contain oxidising gases. Acceptable. | / |
| Gases under pressure |  |  | Not required as the product is a ready-to-use aerosol. | Acceptable. According to CLP criteria, aerosols are not classified as gases under pressure. | / |
| Flammable liquids | ASTM D-93 | ShellSol D60 | According to the SDS, the solvent used is not considered flammable (flash point: 61 – 66°C).As the product 11LBCEOL03 contains more than 99% of this solvent, it is not expected to beflammable. | Acceptable. Regarding the composition of the product and the available SDS, the product is not expected to be flammable. | / |
| Flammable solids |  |  | Not required as the product is a ready-to-use aerosol. | Not applicable. | / |
| Self-reactive substances and mixtures |  |  | The product 11LBCEOL03 is not a self-reactive mixture. Not required as the product 11LBCEOL03 contains more than 99% w/w of solvent which is not classified as self-reactive mixture. | Acceptable.  | / |
| Pyrophoric liquids |  |  | The product 11LBCEOL03 is not a pyrophoric liquid. Test is not required as experience in manufacture and handling shows that the product does not ignite spontaneously on coming into contact with air at normal temperature. | Acceptable. | / |
| Pyrophoric solids |  |  | Not required as the product is a ready-to-use aerosol. | Not applicable. | / |
| Self-heating substances and mixtures |  |  | Not required as the product is a ready-to-use aerosol. | Regarding the composition of the product, it is not expected to be a self-heating mixture. | / |
| Substances and mixtures which in contact with water emit flammable gases |  |  | The product 11LBCEOL03 does not emit flammable gases when in contact with water. Test is not required as the product 11LBCEOL03 contains more than 99% w/w of solvent which does not emit flammable gases in contact with water. | Acceptable. | / |
| Oxidising liquids |  |  | The product 11LBCEOL03 is not oxidising. Test is not required as the product 11LBCEOL03 contains more than 99% w/w of solvent which is not classified as oxidising. | Acceptable. The product has no oxidizing properties. | / |
| Oxidising solids |  |  | Not required as the product is a ready-to-use aerosol. | Not applicable. | / |
| Organic peroxides |  |  | Not required as the product does not contain organic peroxides. | Not applicable. | / |
| Corrosive to metals |  |  | The product 11LBCEOL03 is not corrosive to metal. Test is not required as the product 11LBCEOL03 contains more than 99% w/w of compounds which are not classified as corrosive to metal. Moreover, no corrosion effect and no significant loss of weight of the packaging has been noticed during the accelerated and long term storage stability study. | Acceptable. According to CLP, the test recommended should be performed at 55°C for at least 7 days and the loss of weight is determined. Regarding the results after accelerated storage at 54°C of the product 11LBCEOL03, no loss of weight of the packaging and no sign of corrosion have been noticed. Results can be used for the spray version of 11LBCEOL03. Therefore, the test can be avoided and the product is not considered corrosive. | / |
| Auto-ignition temperatures of products (liquids and gases) | ASTM E-659 | ShellSol D60 | The solvent used has an auto-ignitiontemperature of 235-315°C. The propellant mixture has an auto-ignition temperature > 365°C. As the product 11LBCEOL03 aerosol contains more than 79% w/w of this solvent and 20% w/w propellant mixture,it is expected to have an auto-ignition temperature > 235°C. | Acceptable. The product is expected to have an auto-ignition temperature >235°C. | / |
| Relative self-ignition temperature for solids |  |  | Not required as the product is a ready-to-use aerosol. | Not applicable.  | / |
| Dust explosion hazard |  |  | Not required as the product is a ready-to-use aerosol. | Not applicable. | / |

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| **Conclusion on the physical hazards and respective characteristics of the product** |
| The product TX201 TRAITEMENT MEUBLES PARQUETS – SPRAY is classified as flammable aerosol cat. 1, H222 and H229, GHS02 Danger according to CLP regulation (EC) No.1272/2008.The product TX201 TRAITEMENT MEUBLES PARQUETS – SPRAY is not expected to present a significant hazard for explosive and oxidising properties, corrosion and auto-flammability. |

### Methods for detection and identification

**Analytical method for the determination of the active ingredient in the biocidal product**

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| Study report | Validation of analytical method and chemical analysis of active ingredientdeclared in wood preservative11LBCEOL03, Laboratoire de Chimie-Écotoxicologie, FCBA (Bordeaux, France) Legay S., 2011 |
| *Report*  | 402/11/1033F/ab-fe |
| *GLP* | *Y* |

Test item: 11LBCEOL03, batch 09021103

Blank formulation: 090211010203M

**Principle of the method**

An analytical method for the determination of Permethrin in 11LBCEOL03 was validated during these studies by definition of the specificity, the linearity, the accuracy and the precision of the method. For these validation parameters, the criteria of SANCO 3030/99 rev.4, from 11/07/00 were fulfilled. Permethrin is analysed after dissolution of the formulation of 11LBCEOL03 in acetone and quantified by Liquid Chromatography using a UV detector (210nm) using a PINNACLE II C18 column.

**Specificity**
Specificity was studied by analysis of the matrix without any active substance (formulation blank), the permethrin reference item (permethrin standard), and the test item (11LBCEOL03). The specificity was assessed by checking for any interference in HPLC-UV (210 nm) at the retention time of the active substance. No peak appears in the formulation blank. In the solutions of permethrin reference item and test item, the peak at the retention time around 9.6 min represents permethrin I and the peak at the retention time around 10.9 min represents permethrin II. No additional peak appears near the retention times of the permethrin I peak and the permethrin II peak in the reference item and in the test item. Therefore, the analytical method showed a good specificity for analysis of permethrin in formulation 11LBCEOL03.

**Linearity**
To define the linearity of the detector answer of permethrin, five concentrations taken between 80% and 120% (eq 16.00 mg/L to 24.00 mg/L of permethrin reference standard in acetonitrile) were analysed.

The response of the detector during the analysis of permethrin was linear within the range of 16.00 mg/L to 24.00 mg/L (y = 1.75 \* 104 \* x + 5.44 \* 104 (y = sum of the two peaks areas (permethrin I + permethrin II), x = permethrin amount in mg/L), r = 0.9968 as r² = 0.993544). The correlation coefficient r was > 0.99 showing a good linearity.

**Accuracy**
The accuracy was determined by analysing six reconstituted samples (blank matrix spiked with permethrin reference standard at the target value). The content of permethrin for each analysis was calculated with the calibration equations obtained before analysis. Then, the recovery rates, mean recovery rate, the standard deviation and the Relative Standard Deviation (R.S.D.) were calculated.

The accuracy results of permethrin were in conformity with the Guidelines requirements for formulations containing lower than 1% of an active substance. Indeed, the recovery results should be in the range 95% - 105% and they were experimentally between 102.30% and 103.25%. Mean recovery rate = 102.8% (n= 6) and RSD was equal to 0.38%. The precision obtained during accuracy measurements was acceptable as the R.S.D. were lower than the result of the modified Horwitz equation: < 2.83% (C = 0.0070).

**Precision**
The precision was determined by precision obtained in accuracy measurements (see above) and by analysing six test item solutions. The content of permethrin for each analysis was calculated with the calibration equations obtained before analysis. Then, the average value of the content, the standard deviation and the Relative Standard Deviation (R.S.D.) were calculated. The concentration of permethrin in the test item was equal to 0.71% w/w and the RSD was equal to 1.69%. In the case of permethrin, the precision was acceptable as the R.S.D. were lower than the result of the modified Horwitz equation: < 2.83% (C = 0.0070).

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| **Validation results** |
| **Specificity** | Retention time for permethrin peaks (permethrin I and permethrin II) matches between reference item and test item, confirming the identity of the analyte. No interference was observed in formulation blank at the retention time of permethrin. Therefore, the analytical method showed a good specificity for analysis of permethrin in formulation 11LBCEOL03. |
| **Linearity** | Calibration range: 16.00 mg/L to 24.00 mg/L of permethrin (n = 5; 80% – 120%):y = 1.75 \* 104 \* x + 5.44 \* 104, r = 0.9968 as r² = 0.993544.(y = sum of the two peaks areas (permethrin I + permethrin II), x= permethrin amount in mg/L) |
| **Accuracy** | Blank formulation samples fortified with permethrin at nominal content (approx 0.7%w/w, eq to 20mg/L in solution after dilutio of the sample)Mean recovery rate = 102.8% (n = 6)RSD = 0.38% (n = 6) < modified Horwitz 2.83% |
| **Precision** | 6 injections of six test item solutionsMean average content = 0.71% w/w (n = 6)RSD = 1.69% (n = 6) < modified Horwitz 2.83% |

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| **Conclusion on the methods for detection and identification of the product** |
| The permethrin content in the product TX201 TRAITEMENT MEUBLES PARQUETS – SPRAY is determined using a liquid chromatography method with UV detector (HPLC-UV at 210 nm). Quantification is performed using external standard calibration.This analytical method for the determination of permethrin content in the product 11LBCEOL03 was validated by definition of the specificity, the linearity, the accuracy and the precision of the method. For these validation parameters, the criteria of SANCO 3030/99 rev.4, from 11/07/00 were fulfilled.Data are acceptable for TX201 TRAITEMENT MEUBLES PARQUETS – SPRAY. |

Analytical methods for the determination of permethrin residues in food, soil, water and air

Analytical methods for permethrin residues in soil, air, water (drinking water) and sediment
are available in Assessment Report permethrin Product-type 08 (Wood preservative), April 2014. A Letter of Access from Tagros and Lanxess (including data to Bayer and Sumitomo) has been granted.

**Soil (principle of method and LOQ)**

Soil samples were extracted in a microwave extractor with a mixture of acetonitrile/water and ammoniumformate. The sample was cleaned up by centrifugation. Identification and quantification of the test item was done using HPLC MS/MS detection in the Multiple Reaction Monitoring mode.

The method was validated using a slit loam soil (Höfchen) and a sandy loam soil (Laacher Hof).
LOQ = 5.0 µg/kg in soil (permethrin)

**Air (principle of method and LOQ)**

Air is sucked through XAD adsorption tubes at about 1.5 L/min for 6 hours (total air sampling volume about 0.5 m3). Subsequently, the adsorption material is extracted with acetone. The extract is diluted with methanol/water (1/2 v/v) and analysed by HPLC/MS/MS, monitoring two parent-daughter ion transitions.

LOQ = 5 µg/m3 air.

Air is sucked through adsorption tubes at about 1.8 L/min for 6 hours at 35°C. Subsequently, the adsorption material is extracted with acetone. The extract was analysed for permethrin using GC/ECD.

GC-MS/MS was used as a confirmatory method (three ions with an m/z > 100).

LOQ = 0.0001 mg/m3 air

**Water (principle of method and LOQ)**

Acidified water samples are diluted with acetonitrile and analysed by HPLC-MS/MS using positive
ionisation mode without further clean-up. Concentrations were quantified using external matrix-matched standard solutions.

LOQ = 0.05 µg/L for drinking and surface water, Permethrin only.

**Body fluids and tissues (principle of method and LOQ)**

Not data required. Molecule does not classify as toxic or highly toxic

**Active substance residues in food and feeding stuff**

As the product 11LBCEOL03is not intended to be used with surface in contact with food/feed of plant and animal origin, analytical method for the determination of permethrin residue in food/feed of plant and animal origin is unnecessary.

### Efficacy against target organisms

#### Function and field of use

MG 02: preservatives

Product Type 08: wood preservative

The product TX201 TRAITEMENT MEUBLES ET PARQUETS - SPRAY (11LBCEOL03 aerosol) is a solvent-based wood preservative product ready to use in an aerosol dispenser which is intended to be used by superficial application for preventive treatment for wood used in use class 1, and for curative treatments by superficial application (that could be completed by injection for curative treatments), indoor, for wood in service.

The product is applied by professional and non-professional users.

The application rates recommended by the applicant are the following:

* Preventive treatments: superficial application at 200 mL of product 11LBCEOL03 / m² of wood
* Curative treatment: superficial application at 300 mL of product 11LBCEOL03 / m² of wood (+ injection 150 mL of product / m² of wood).

#### Organisms to be controlled and products, organisms or objects to be protected

According to the uses claimed by the applicant, the product TX201 TRAITEMENT MEUBLES ET PARQUETS – SPRAY is intended to be used for the preventive preservation of wood used in use class 1 by superficial application against wood boring beetles (*Hylotrupes bajulus*, *Anobium punctatum* and *Lyctus brunneus*), and termites (*Reticulitermes spp*., *Heterotermes spp*., and *Coptotermes gestroi*).

This product is also intended to be used for the curative treatment of wood in service against wood boring beetles (*Hylotrupes bajulus*, *Anobium punctatum* and *Lyctus brunneus*) and termites (*Reticulitermes spp., Heterotermes spp*., and *Coptotermes gestroi)* indoor, by superficial application that could be completed by injection for curative treatments.

#### Effects on target organisms, including unacceptable suffering

The product TX201 TRAITEMENT MEUBLES ET PARQUETS – SPRAY kills the insects after ingestion.

#### Mode of action, including time delay

Permethrin is a neurotoxin. It is a synthetic pyrethroid acting after ingestion.The target organisms ingest a small amount of the treated wood which, once ingested, results in death of the target pests. Permethrin when formulated as a wood preservative, is an axonic poison, binding to protein in nerves (voltage-gated sodium channel). Normally, this protein opens causing stimulation of the nerve and closes to terminate the nerve signal. Pyrethroids bind to this gate and prevent it from closing normally which results in continuous nerve stimulation, leading to death. Permethrin may also exhibit a mild contact repellent effect in conjunction with the insecticidal effect. This contact repellence effect is also common to other pyrethroid insecticides (such as deltamethrin, cypermethrin, esfenvalerate and lambda-cyhalothrin) and is known as the “hot-foot effect” and may be relevant for some arthropods. The repellent effect is dose related and for insecticidal products the repellent effect of permethrin is considered as a side effect, since the toxic response of the insect is a delayed kill (insecticidal) effect (see Assessment Report permethrin, PT08, April 2014).

For preventive treatment against wood-boring insects and termites, the effect is immediate, even if efficacy is complete only after a few weeks of exposure of the insects. For curative treatment, the product is fast acting against house longhorn beetles and against common furniture beetles.

#### Efficacy data

|  |
| --- |
| **Experimental data on the efficacy of the biocidal product against target organism(s)** |
| **Function** | **Field of use envisaged** | **Test substance** | **Test organism(s)** | **Test method** | **Test system / concentrations applied / exposure time** | **Test results: effects** | **Reference** |
| MG 02: preservatives | Wood preservativePreventive treatment | 11LBCEOL03 | House longhorn beetle: *Hylotrupes bajulus* (L.) | EN 46 + EN 73 (evaporation) | The ready to use product 11LBCEOL03 is applied by brushing on sapwood test blocks (*Pinus sylvaticus*) and followed by an artificial weathering according to the EN 73 standard method (evaporation).The quantity really applied on each test block varied between 99.3 g/m² and 102 g/m² (mean 100.8 g/m²).10 recently hatched larvae of *H. bajulus* for each are used for each test block.6 replicates for the treated block and 3 replicates for the control are performed.The effect investigated is the mortality of insect’s larvae.The method for recording / scoring effects is the recovery of the insects and count of dead and alive larvae and count of dead larvae having tunneled or not. - Intervals of examination: one time, after 1 month exposure of the blocks to the insects. | The study is validated as the survival rate in the control is higher than 70 % (83%).On the treated test block, 100 % of the larvae was dead and had not tunnelled.**This study demonstrated the efficacy of the product at 100.81 g of product / m² of wood against *Hylotrupes bajulus* larvae****No control the solvent has been performed** | Arana M. et al., 2012Report N° 27766-1aS6.7\_01IC 2 |
| MG 02: preservatives | Wood preservativePreventive treatment | 11LBCEOL03 | Powder post beetle: *Lyctus brunneus* | EN 20-1 + EN 73 (evaporation) | The ready to use product 11LBCEOL03 is applied by brushing on hardwood test blocks (*Quercus petraea ou Quercus robur*) and followed by an artificial weathering according to the EN 73 standard method (evaporation).The quantity really applied on each test block varied between 99.4 g/m² and 100.3 g/m² (mean 99.8 g/m²).10 recently hatched larvae of *L. bruneus* are used for each test block.5 replicates for the treated block and 5 replicates for the control are performed.The investigated effects are the mortality of the insects.The method for recording / scoring effects is the recovery and the counting of the insects (alive/dead) and the number of drilled openings. | The study is validated as:* At least, for each control, 20 insects are found
* Adult emergence has started at the end test in the control and at least 85 % of the insects are found alive

**This study demonstrated the efficacy of the product at 100 g of product / m² of wood against *Lyctus bruneus* larvae****No control with the solvent has been performed** | Paulmier et al.,2017Report N° 401/15/283F/aS6.7\_06IC 2 |
| MG 02: preservatives | Wood preservativePreventive treatment | 11LBCEOL03 | Common furniture beetle: *Anobium punctatum (L.)* | EN 49-1 + EN 73 (evaporation) | The ready to use product 11LBCEOL03 is applied by brushing on hardwood test blocks (*Quercus petraea ou Quercus robur*) and followed by an artificial weathering according to the EN 73 standard method (evaporation).The quantity really applied on each test is 199 mL/m².5 females and at least 5 males of *A.punctatum* are used for each test block.5 replicates for the treated block and 5 replicates for the control are performed.The investigated effects are the number of layed and hatched eggs, and the number of alive larvae at the end of the tests- Intervals of examination is one examination, 26 weeks after beginning of exposure of the adults. | The study is validated as:* At least, for each control set, 50 insects larvae are found
* Alive larvae are found in each control

**This study demonstrated the efficacy of the product at 199 mL of product / m² of wood against *Anobium punctatum* larvae****No control with the solvent has been performed** | Schumacher et al. 2016Report N°32/15/9938/02S6.7\_05IC 2 |
| MG 02: preservatives | Wood preservativePreventive treatment | 11LBCEOL03 | Subterranean termite: *Reticulitermes grassei* | EN 118 + EN 73 (evaporation) | The ready to use product 11LBCEOL03² is applied by brushing on sapwood test blocks (*Pinus sylvaticus*) and followed by an artificial weathering according to the EN 73 standard method (evaporation).The quantity really applied on each test block varied between 197.35 mL/m² and 199.12 mL/m² (mean 198.8 mL/m²).250 workers, 4 nymphs and 1 soldier termite were used for each test block.6 replicates for the treated block and 3 replicates for the control are performed.The investigated effects are the mortality of the insects.Method for recording / scoring effects: recovery of the insects and count of the surviving workers, soldiers and nymphs. Calculation of the percentage of surviving workers. Visual observation of the test blocks and rating (0- no attack, 1- attempted attack, 2- slight attack, 3- average attack, 4- strong attack). - Intervals of examination: one time, after 12 weeks exposure of the blocks to the insects. | The study is validated as the survival rate in the control is higher than 50 % (90 %) and the control test blocks are ranked 4.**All the treated blocks are ranked 1 at the end of the study which demonstrates the efficacy of the product 11LBCEOL03** **at the application rate of 198.8 ml of product / m² of wood.** | Arana M. et al., 2012Report N° 27766-2aS6.7\_02IC 1 |
| MG 02: preservatives | Wood preservativePreventive treatment | 11LBCEOL03 | Subterranean termite: *Heterotermes tenuis* | EN 118 + EN 73 (evaporation) | The ready to use product 11LBCEOL03² is applied by brushing on sapwood test blocks (*Pinus sylvaticus*) and followed by an artificial weathering according to the EN 73 standard method (evaporation).The quantity really applied on each test block varied between 199.0 mL/m² and 200.1 mL/m² (mean 199.7 mL/m²).250 workers, 4 nymphs and 1 soldier termite were used for each test block.5 replicates for the treated block and 5 replicates for the control are performed.The investigated effects are the mortality of the insects.Method for recording / scoring effects: recovery of the insects and count of the surviving workers, soldiers and nymphs. Calculation of the percentage of surviving workers. Visual observation of the test blocks and rating (0- no attack, 1- attempted attack, 2- slight attack, 3- average attack, 4- strong attack). - Intervals of examination: one time, after 8 weeks exposure of the blocks to the insects. | The study is validated as the survival rate in the control is higher than 50 % (88 %) and the control test blocks are ranked 4.**All the treated blocks are ranked 1 at the end of the study which demonstrates the efficacy of the product 11LBCEOL03** **at the application rate of 200 ml of product / m² of wood.** | Paulmier et al., 2016Report N° 401/15/283F/bS6.7\_08IC 1 |
| MG 02: preservatives | Wood preservativePreventive treatment | 11LBCEOL03 | Subterranean termite: *Coptotermes gestroi* | EN 118 + EN 73 (evaporation) | The ready to use product 11LBCEOL03² is applied by brushing on sapwood test blocks (*Pinus sylvaticus*) and followed by an artificial weathering according to the EN 73 standard method (evaporation).The product is applied at the application rate of 200 mL/m².250 workers and 10 soldier termites were used for each test block.6 replicates for the treated block and 3 replicates for the control are performed.The investigated effects are the mortality of the insects.Method for recording / scoring effects: recovery of the insects and count of the surviving workers, soldiers and nymphs. Calculation of the percentage of surviving workers. Visual observation of the test blocks and rating (0- no attack, 1- attempted attack, 2- slight attack, 3- average attack, 4- strong attack). - Intervals of examination: one time, after 8 weeks exposure of the blocks to the insects. | The study is validated as the survival rate in the control is higher than 50 % (59.7 %) and the control test blocks are ranked 4.**Except one treated block that is ranked 2, all the treated blocks are ranked 1 at the end of the study which demonstrates the efficacy of the product 11LBCEOL03** **at the application rate of 200 mL of product / m² of wood.** | Vuillemin et al., 2016, Report N° 14-15S6.7\_07IC 1 |
| MG 02: preservatives | Wood preservativeCurative treatment | 11LBCEOL03 | Common furniture beetle: *Anobium punctatum (L.)* | EN 370 + EN 73 | The ready to use product 11LBCEOL03is applied by brushing on sapwood test blocks (*Pinus sylvaticus*) and followed by an artificial weathering according to the EN 73 standard method (evaporation).The quantity really applied on each test block varied between 298.7 mL/m² and 299 mL/m² (mean 298.9 mL/m²).12 larvae of *Anobium punctatum* were used per test blocks6 replicates for the treated block and 6 replicates for the control are performed.The investigated effects is the mortality of the larvae and hatched beetles- Method for recording / scoring effects: count of the holes in the test blocks and of the hatched beetles. After splitting up of the test blocks, count of the dead and alive larvae and beetles. - Intervals of examination: one time, 12 weeks after beginning of the hatching in the control blocks. | The study is validated at least 30 (33) larvae has emerged in the controlNo emergence of adult is observed in the treated blocks. **Then this demonstrated the differed curative efficacy of the product 11LBCEOL03** **at the application rate of 298.9 mL product / m² of wood.** | Schumacher P. et al., 2012Report N° 32/11/9471/03AS6.7\_04IC 1 |
| MG 02: preservatives | Wood preservativeCurative treatment | 11LBCEOL03 | House longhorn beetle: *Hylotrupes bajulus (L.)* | EN 1390 | The ready to use product 11LBCEOL03 is applied by brushing on sapwood test blocks (*Pinus sylvestris*) The quantity really applied on each test block varied between 233.72 g/m² and 235.22 g/m² (mean 234.3 g/m²) equivalent to 296.7 ml/m².6 larvae of *Hylotrupes bajulus* were used for each test block.10 replicates for the treated block and 2 replicates for the control are performed.The investigated effects are the mortality of the larvae.- Method for recording / scoring effects: recovery of the insects and count of the dead and alive larvae. Calculation of the percentage of mortality. - Intervals of examination: one time, 24 weeks after exposure of the larvae in the wood block to the tested product.The efficacy criterion according to the EN 14128 is a mortality higher than 80 % | The study is validated as the survival rate in the control is higher than 80 % (91.7%).**This one validated the slow action efficacy of the product 11LBCEOL03, at the application rate of 296.7 ml of product / m² of wood, 24 weeks after is application.** | Arana M. et al., 2012Report N° 27766-3bS6.7\_03IC 1 |
| MG 02: preservatives | Wood preservativeCurative treatment | 11LBCEOL03 | House longhorn beetle: *Hylotrupes bajulus (L.)* | EN 1390 | The ready to use product 11LBCEOL03 is applied by brushing on sapwood test blocks (*Pinus sylvestris*) The quantity really applied on each test block is 299.8 mL/m².6 larvae of *Hylotrupes bajulus* were used for each test block.10 replicates for the treated block and 2 replicates for the control are performed.The investigated effects are the mortality of the larvae.- Method for recording / scoring effects: recovery of the insects and count of the dead and alive larvae. Calculation of the percentage of mortality. - Intervals of examination: one time, 12 weeks after exposure of the larvae in the wood block to the tested product.The efficacy criterion according to the EN 14128 is a mortality higher than 80 % | The study is validated as the survival rate in the control is higher than 80 % (98%).**This one validated the fast action efficacy of the product 11LBCEOL03, at the application rate of 299.8 mL of product / m² of wood, 12 weeks after is application.** | Schumacher P. and Fennert E.-M., 2017, Report 32/16/10030/01S6.7\_03bis, IC 1 |
| MG 02: preservatives | Wood preservativeCurative treatment | 11LBCEOL03 | Common furniture beetle:*Anobium punctatum (L)* | EN48 | The ready to use product 11LBCEOL03 is applied by brushing on sapwood test blocks (*Pinus sylvestris*) The quantity really applied on each test block is 300 mL/m².12 larvae of *Anobium punctatum* were used for each test block.6 replicates for the treated block and 3 replicates for the control are performed.The investigated effects are the mortality of the larvae.- Method for recording / scoring effects: recovery of the insects and count of the dead and alive larvae. Calculation of the percentage of mortality. - Intervals of examination: one time, 8 weeks after exposure of the larvae in the wood block to the tested product.The efficacy criterion according to the EN 14128 is mortality higher than 85 %. | The study is validated as the survival rate in the control is higher than 70 % (91%).**The mortality observed in the treated block is higher than 80 % (100 %) validated the efficacy of the product 11LBCEOL03, at the application rate of 300 mL of product / m² of wood.** | Schumacher et al., 2017Report N° 32/16/10030/026.7-04bisIC1 |

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| **Conclusion on the efficacy of the product** |
| French competent authorities considers that the data submitted in the dossier demonstrated the efficacy of the product TX201 TRAITEMENT MEUBLES ET PARQUETS - SPRAY (11LBCEOL03 aerosol) according the uses and the application rates claimed:* Regarding the preventive efficacy claim against wood boring beetles, for superficial application, the product 11LBCEOL03 is efficient according to respectively EN 46 (+EN73), EN 49 (+EN73) and EN 20-1 (+EN73), against *Hylotrupes bajulus, Anobium punctatum and* *Lyctus brunneus* for use class 1 at the application rate of 200 mL of product 11LBCEOL03 / m² of wood.
* Regarding the preventive efficacy claim against termites, for superficial application, the product 11LBCEOL03 is efficient according to EN 118 (+EN73), against *Reticulitermes spp*, *Heterotermes spp*., and *Coptotermes spp*. for use class 1, at the application rate of 200 mL of product 11LBCEOL03 per m² of wood.
* Regarding the curative efficacy claim against wood boring beetles (*Hylotrupes bajulus*, *Anobium punctatum* and *Lyctus brunneus*), for superficial application, the product 11LBCEOL03 is efficient according to respectively EN 1390 and EN 48 against *Hylotrupes bajulus* and against *Anobium punctatum* with a fast activity, at the application rate of 300 mL of product 11LBCEOL03 per m² of wood. According to EN 14128[[14]](#footnote-14), if curative treatment against *Lyctus brunneus* is required, a curative wood preservative "for *Hylotrupes* *bajulus* and *Anobium punctatum*" should be applied. The curative efficacy against wood boring beetles is then validated.
* Regarding the curative efficacy claim against termites (Reticulitermes spp., Heterotermes spp. and Coptotermes spp.), no curative efficacy standard are available against termites. However, the objective of curative products are, as for the preventive treatments against termites (tested following the standard EN 118 + EN73), to protect wood against termites and to eliminate termites in the wood. Indeed, their function is not to destroy the entire colony (which is not in the wood). Moreover the target stages in the preventive and in the curative efficacy treatments are the same, which means the dose of active substance in both treatments are the same. Then the efficacy demonstrated in the preventive efficacy test can be extrapolated for a curative application.
* Regarding the curative efficacy claim against wood boring beetles, by injection, this treatment is always performed in combination with superficial application. Efficacy demonstrated for superficial treatment is sufficient and no additional data is needed. Curative treatment by injection and in combination with a superficial treatment, at the application rate of 150 mL of product 11LBCEOL03 / m² of wood is validated.
 |

#### Occurrence of resistance and resistance management

Resistance to permethrin has been reported for a number of pests both in agriculture and public health (German cockroach (Atkinson et al., 1991), house fly (Shen and Plapp, 1990), stable fly (Cilek and Greena, 1994), Culex mosquitos (Wan-Norafilack et al., 2013), Aedes mosquitos (Saavedra-Rodriguez et al., 2008), Anopheles mosquitos (Müller et al., 2008)… ), when permethrin has been used as a general insecticide (PT18 use). In general, pyrethroid resistance has been attributed to reduced neural sensitivity, enhanced metabolism, and reduced penetration ratio in many insects. A substantial degree of resistance remaining after synergism suggests the presence of other resistance mechanisms (see Assessment Report permethrin, PT08, April 2014).

However, no specific data has been found in the literature regarding occurrence of resistance to permethrin among wood-boring insects and termites. There are no reported cases of development of resistance involving the use of permethrin in wood preservation.

#### Known limitations

*none*

#### Evaluation of the label claims

French competent authorities (FR CA) assessed that the product TX201 TRAITEMENT MEUBLES ET PARQUETS - SPRAY (11LBCEOL03 aerosol) has shown a sufficient efficacy for the preservation of wood in service used:

* for the preventive control of wood boring beetles (*Hylotrupes bajulus, Anobium punctatum* and *Lyctus brunneus*), and termites (*Reticulitermes spp*., *Heterotermes spp*. and *Coptotermes spp.*), in use class 1 by superficial application
* for the curative control of wood against wood boring beetles (*Hylotrupes bajulus, Anobium punctatum* and *Lyctus brunneus*) and termites (*Reticulitermes spp.,* *Heterotermes spp*. and *Coptotermes spp.*), indoor, by superficial application,

The application rates validated are the following:

* Preventive treatments: superficial application at 200 mL of product 11LBCEOL03/ m² of wood
* Curative treatment: superficial application at 300 mL of product 11LBCEOL03/ m² of wood
* Curative treatment: superficial application at 300 mL of product 11LBCEOL03/ m² of wood and injection 150 mL of product 11LBCEOL03 / m² of wood.

#### Relevant information if the product is intended to be authorised for use with other biocidal product(s)

The product TX201 TRAITEMENT MEUBLES ET PARQUETS - SPRAY is not intended to be used with another biocidal product.

### Risk assessment for human health

#### Assessment of effects on Human Health

***Skin corrosion and irritation***

No study performed with TX201 TRAITEMENT MEUBLES ET PARQUET SPRAY has been provided for skin corrosion and irritation, and no human data are available.

The potential of skin corrosion and irritation of the biocidal product is therefore assessed by calculation, according to the CLP calculation rules. None of the formulants is classified as skin irritant or corrosive, therefore, no classification is required for the product.

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| **Conclusion used in Risk Assessment – Skin corrosion and irritation** |
| Value/conclusion | Not classified as a skin irritant/corrosive product. |
| Justification for the value/conclusion | None of the formulants is classified as skin irritant or corrosive |
| Classification of the product according to CLP  | Not classified according to Regulation (EC) No 1272/2008 (CLP). |

***Eye irritation***

No study performed with TX201 TRAITEMENT MEUBLES ET PARQUET SPRAY has been provided for serious eye damage/ eye irritation, and no human data are available.

The potential of eye irritation/ corrosion of the biocidal product is therefore assessed by calculation, according to the CLP calculation rules. None of the formulants is classified for eye irritation, therefore, no classification is required for the product.

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| **Conclusion used in Risk Assessment – Eye irritation**  |
| Value/conclusion | Not classified as an eye irritant product |
| Justification for the value/conclusion | None of the formulants is classified as eye irritant |
| Classification of the product according to CLP  | Not classified according to Regulation (EC) No 1272/2008 (CLP). |

***Respiratory tract irritation***

No *in vivo*/*in vitro* respiratory tract irritation test has been performed with TX201 TRAITEMENT MEUBLES ET PARQUET SPRAY product and no human data are available.

The respiratory tract irritation potential of the biocidal product is therefore assessed by calculation, according to the CLP calcultaion rules. None of the components are toxicologically relevant for respiratory tract respiration, therefore, no classification is required for the product.

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| **Conclusion used in the Risk Assessment – Respiratory tract irritation** |
| Justification for the conclusion | None of the components are classified for respiratory tract irritation.  |
| Classification of the product according to CLP  | Not classified as an irritant product for respiratory tract according to Regulation (EC) No 1272/2008 (CLP). |

***Skin sensitization***

No study performed with TX201 TRAITEMENT MEUBLES ET PARQUET SPRAY has been provided for skin sensitization, and no human data are available.

A skin sensitization study has been performed on the biocidal product TX201 TRAITEMENT MEUBLES ET PARQUET (11LBCEOL03) (see the confidential document for the bridging). According to this study, no classification is required for the product.

| **Summary table of animal studies on skin sensitisation** |
| --- |
| **Method,Guideline, GLP status, . Reliability** | **Species,Strain,Sex,No/group** | **Test substance, Vehicle,****Dose levels, duration of exposure Route of exposure** *(topical/intradermal, if relevant)* | **Results** *(EC3-value or amount of sensitised animals at induction dose); evidence for local or systemic toxicity (time course of onset)* | **Remarks***(e.g. major deviations)* | **Reference**  |
| OCDE 442-BGLP1 (reliable without restriction) | MouseCBA/JFemale1 animal in preliminary study4 animals in each test group (3 groups)4 animals in control group (vehicle only) | 11LBCEOL03 in acetone/olive oil (4:1, v:v)3 doses: 25% (v/v), 50% (v/v) in the vehicle, and 100%. | Stimulation index: 1.01, 1.48, 1.47 for 25% (v/v), 50% (v/v), 100% (v/v) respectively.EC1.6 not determinedNo mortality and no signs of toxicity | No deviation | Richeux F. (2014) |

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| **Conclusion used in Risk Assessment – Skin sensitisation** |
| Value/conclusion | The product is not a skin sensitizer |
| Justification for the value/conclusion | SI < 1.6 |
| Classification of the product according to CLP and DSD | Not classified according to Regulation (EC) No 1272/2008 (CLP).According to the concentrations of permethrin, the additional labelling information “EUH208 Contains permethrin. May produce an allergic reaction” should be mentioned on the label. |

***Respiratory sensitization (ADS)***

No *in vivo*/*in vitro* respiratory sensitization test has been performed with TX201 TRAITEMENT MEUBLES ET PARQUETS SPRAY and no human data are available.

The respiratory sensitization potential of the biocidal product is therefore assessed by calculation, according to the CLP calculation rules.

The biocidal product doesn’t contain any substance classified for respiratory sensitization therefore, no classification is required.

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| **Conclusion** **used in Risk Assessment – Respiratory sensitisation** |
| Value/conclusion | Not classified |
| Justification for the value/conclusion | There are no components of the product classified for respiratory sensitization. |
| Classification of the product according to CLP and DSD | The product does not require classification for respiratory sensitization according to Regulation (EC) No 1272/2008 (CLP). |

***Acute toxicity***

*Acute toxicity by oral route*

No acute oral toxicity studies were conducted. Classification is based on the available data on each component.

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| **Value used in the Risk Assessment – Acute oral toxicity** |
| Value | - |
| Justification for the selected value | According to the composition, the content of the components classified for acute oral toxicity does not trigger classification of the product. |
| Classification of the product according to CLP and DSD | Not classified according to Regulation (EC) No 1272/2008 (CLP). |

*Acute toxicity by inhalation*

No acute inhalation studies were conducted. Classification is based on the available data on each component.

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| --- |
| **Value used in the Risk Assessment – Acute inhalation toxicity** |
| Value | - |
| Justification for the selected value | According to the composition, the content of the components classified for acute toxicity by inhalation does not trigger classification of the product. |
| Classification of the product according to CLP and DSD | Not classified according to Regulation (EC) No 1272/2008 (CLP). |

*Acute toxicity by dermal route*

No acute dermal studies were conducted. Classification is based on the available data on each component.

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| --- |
| **Value used in the Risk Assessment – Acute dermal toxicity** |
| Value | - |
| Justification for the selected value | None of the components are classified for acute dermal toxicity.  |
| Classification of the product according to CLP and DSD | Not classified according to Regulation (EC) No 1272/2008 (CLP). |

***Information on dermal absorption***

No dermal absorption studies had been carried out with the product TX201 TRAITEMENT MEUBLES ET PARQUET SPRAY. Nevertheless, a study carried out on TX201 TRAITEMENT MEUBLES ET PARQUET had been provided (see the confidential document for the bridging).

| **Summary table of in vitro studies on dermal absorption** |
| --- |
| **Method, Guideline,****GLP status, Reliability** | **Species, Number of skin samples tested per dose, Other relevant information about the study** | **Test substance, Doses** | **Absorption data for each compartment and final absorption value** | **Remarks** *(e.g. major deviations)* | **Reference** |
| OCDE 428GLP1 (reliablewithoutrestriction) | Human skin4 donors, 8 skin discs | 14C-permethrin in reconstituted 11LBCEOL031 dose: 100% | Strips 3 to 15: 5.98%Skin : 10.2%Receptor fluid compartment: 3.50%Final absorption value: 19.68 ± 4.921% | No deviationOne cell was excluded from calculation according to statistical Dixon Q-test | Bernal J.(2015) |

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| --- |
| **Value(s) used in the Risk Assessment – Dermal absorption** |
| Substance | 14C-permethrin in reconstituted TX201 TRAITEMENT MEUBLES ET PARQUETS SPRAY |
| Value(s)\* | Final absorption value: 19.68 ± 4.921%Recovery : 90.79%Since recovery is <95%, normalisation had been made.Since standard deviation is >25% of the mean dermal absorption value, its added to the mean. Consequently, the following dermal absorption value is calculated : 28.05% and rounded to 28% according to the EFSA Guidance on Dermal Absorption[[15]](#footnote-15) (2012) |
| Justification for the selected value(s) | Dermal absorption value had been set according to guidance on dermal absorption (EFSA Journal 2012; 10(4):2665) :* The mean total recovery of the radioactivity was 90.79%, therefore a normalization is required
* The standard deviation being larger than 25% of the mean of absorption, it has been added to the mean value.

The value obtained is then rounded to 28% |

***Available toxicological data relating to non active substance(s) (i.e. substance(s) of concern)***

Due to the proposed classifcation including in the submitted MSDS and their impact on the classification of the product, the solvent Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics has been identified as a substance of concern.

This substance leads to the labeling ”EUH066 Repeated exposure may cause skin dryness or cracking”. Therefore, according to the BPR Guidance Volume III Human health – Part B and C Risk Assessment, the BAND A evaluation scheme is applied. In this context, a qualitative risk assessment associated with the application of P and H statements is performed.

***Available toxicological data relating to a mixture***

No toxicological data for the mixture are available.

#### Exposure assessment

TX201 TRAITEMENT MEUBLES ET PARQUETS SPRAY is a ready-to-use solvent-based wood preservative containing 0.56% w/w permethrin (pure) (0.70% w/w permethrin (pure) in the liquid formulation without propellant) as active substance. As the propellant will quickly evaporate, the concentration of active substance (technical) in the product without propellant (0.75%w/w) is considered for the exposure assessment.

It is intended to be used for the preventive and curative treatment of interior woods against wood-boring insects and termites. These preventive and curative treatments are done by professionals and non- professionals by spray application or injection. Injection is always used combined with a spray treatment.

For the primary uses professional and non-professional users are in contact with the product during its application (spraying or injecting). Inhalation and dermal routes were considered as the main exposure routes for both professional and non-professional users.

In the subsequent secondary exposure, inhalation, dermal and oral (children only) exposure were considered.

**Identification of main paths of human exposure towards active substance(s) and substances of concern from its use in biocidal product**

| **Summary table: relevant paths of human exposure** |
| --- |
| **Exposure path** | **Primary (direct) exposure**  | **Secondary (indirect) exposure**  |
| **Industrial use** | **Professional use** | **Non-professional use** | **Industrial use** | **Professional use** | **General public** | **Via food** |
| Inhalation | n.a | Yes | Yes | n.a | Yes | Yes | No |
| Dermal | n.a | Yes | Yes | n.a | Yes | Yes | No |
| Oral | n.a | No | No | n.a | No | Yes | No |

***List of scenarios***

| **Summary table: scenarios** |
| --- |
| **Scenario number** | **Scenario** | **Primary or secondary exposure** **Description of scenario** | **Exposed group** |
| **Primary exposures** |
| 1.  | Spray application  | **Primary inhalation and dermal exposures**Spraying of the biocidal product, professional users are exposed by dermal and inhalation routes. | Professional users |
| 2.  | Spray application  | **Primary inhalation and dermal exposures**During spraying of the biocidal product, non-professional users are exposed by dermal and inhalation routes. | Non-professional users |
| 3.  | Spray application + injection  | **Primary inhalation and dermal exposures**If a treatment by injection is done, it has to be combined with a spray treatment. Both treatments can be done on a same day. So this scenario presents the assessment of exposure during injection and combines it with the exposure assessment for spray application from scenario 1. | Professional  |
| 4.  | Spray application + injection  | **Primary inhalation and dermal exposures**If a treatment by injection is done, it has to be combined with a spray treatment. Both treatments can be done on a same day. So this scenario presents the assessment of exposure during injection and combines it with the exposure assessment for spray application from scenario 1. | Non-professional users |
| **Secondary exposures** |
| 5.  | Adult amateur sanding/processing of treated wood composites  | **Acute secondary dermal and inhalation exposures**After treatment of the wood, adult can be exposed by inhalation and dermal contact to the product when sanding or processing of treated wood composites. | Adult amateur (general public) |
| 6.  | Toddler chewing wood composite chips treated with application dose of 450 ml/m² | **Acute secondary oral exposure**Oral exposure to the product can occur for infant putting into his mouth treated wood chips.In this scenario, it has been calculated the oral exposure considering the size of the wood composite chips, the amount of active substance contained in treated wood and that 10% of this content is released during chewing into the infant’s mouth.As a worst-case, it has been considered that the wood was treated with a total application dose of 450ml/m2, corresponding to a curative treatment by brushing or spraying followed by injection.  | Toddler (general public) |
| 7.  | Adult amateur sanding/processing of treated wood composites (chronic) | **Chronic secondary dermal and inhalation exposures**After treatment of the wood, adult can be exposed by inhalation and dermal contact to the product when sanding or processing of treated wood composites. | Adult (general public) |
| 8.  | Inhalation of volatilised residues indoors (adult) | **Chronic secondary exposure by inhalation**Inhalation exposure to the biocidal product volatilised residues can occur.For the assessment of this exposure, the scenario ”*assessment of Inhalation Exposure of Volatilized Biocide Active Substance*” from the Opinion n°13 of HEEG[[16]](#footnote-16) has been used. | Adult (general public) |
| 9.  | Inhalation of volatilised residues indoors (Toddler) | **Chronic secondary exposure by inhalation**Inhalation exposure to the biocidal product volatilised residues can occur.For the assessment of this exposure, the scenario ”*assessment of Inhalation Exposure of Volatilized Biocide Active Substance*” from the Opinion n°13 of HEEG has been used. | Toddler (general public) |
| 10.  | Inhalation of volatilised residues indoors (Child) | **Chronic secondary exposure by inhalation**Inhalation exposure to the biocidal product volatilised residues can occur.For the assessment of this exposure, the scenario ”*assessment of Inhalation Exposure of Volatilized Biocide Active Substance*” from the Opinion n°13 of HEEG has been used. | Child (general public) |
| 11.  | Child playing on playground structure outdoors  | **Chronic secondary exposure by dermal contact**In the playground (outdoors), children can play on wood structures that can be treated with biocidal product. Dermal exposure occurs therefore.For the assessment of this exposure, it has been considered according to the Recommendation n°14 of HEEG that 20% of the hand is in contact with the treated surface and a wood-hand transfer factor of 3%. | Child (general public) |
| 12.  | Toddler playing on weathered (playground) structure and mouthing  | **Chronic secondary oral and dermal exposures**In the playground (outdoors), children can play on wood structures that can be treated with biocidal product and put it in contact with mouth. Therefore, oral and dermal exposures occur. | Toddler (general public) |

***Industrial exposure***

No industrial exposure is foreseen.

***Professional exposure***

*Scenario [1] Spray application (professionals)*

| **Description of Scenario [1] Spray application** |
| --- |
| To assess exposure during the use of the product for spray application, “Consumer Spraying model 2 with aerosol Can” was used according to the Recommendation no. 6 of the BPC Ad hoc Working Group on Human Exposure.An exposure duration of 15.8 min has been used to perform risk assessment. This value corresponds to the duration required for emptying 2 aerosols cans. Indeed, as the product will be used to treat small structures (such as furniture and flooring), it has been estimated that 2 cans will be required to treat this kind of structures (2.66 m² for curative dose and 4 m² for a preventive dose).In the biocidal Human Health Exposure methodology, it is indicated that exposure values from Consumer Spraying model 2 with aerosol can are normalised for a product with a density of 1. The density of the product is about 0.791. So exposure values were corrected according to this value.

|  | Parameters1 | Value | Unit | Reference |
| --- | --- | --- | --- | --- |
|  | Dermal exposure |
| Tier 1 | Exposure model  | Consumer Spraying model 2 with aerosol Can |
| Exposure duration | 15.8 | min | Applicant data |
| Product density without gas | 0.791 | mg/µl | Applicant data |
| Potential dermal exposure (body) | 45.2 | mg/min | Biocidal Human Health Exposure methodology (p220) |
| Potential dermal exposure (hands) | 64.7 | mg/min |
| Active substance dermal absorption | 28 | % | Applicant data |
| No PPE, clothing penetration | 100 | % | Applicant data |
| Tier 2 | PPE, gloves  | Gloves: 10 | % | HEEG opinion 9 |
|  | Exposure by inhalation |
| Tier 1 | Exposure model  | Consumer Spraying model 2 with aerosol Can | Biocidal Human Health Exposure methodology (p220) |
| Indicative inhalation exposure (non-volatile compounds) | 35.9 | mg/m3 |
| Vapour pressure of the active substance | 2.16E-06 | Pa |  |
| Inhalation rate | 1.25 equivalent to 2.08E-02 | m3/hourm3/min | HEAd Hoc recommendation 14 |
| Inhalation absorption | 100 | % |  |

 |

**Calculations for Scenario [1] Spray application**

| **Exposure scenario** | **Tier/PPE** | **Estimated inhalation uptake**(mg/kg bw/d) | **Estimated dermal uptake**(mg/kg bw/d) | **Estimated oral uptake**(mg/kg bw/d) | **Estimated total uptake**(mg/kg bw/d) |
| --- | --- | --- | --- | --- | --- |
| Scenario [1] | Tier 1  | 1.17 x 10-3 | 4.81 x 10-2 | - | 4.92 x 10-2 |
| Tier 2 (gloves) | 1.17 x 10-3 | 2.26 x 10-2 | - | 2.38 x 10-2 |

*Scenario [3]* *Spray application + injection*

| **Description of Scenario [3] Spray application + injection** |
| --- |
| As injection is always combined with a surface spray application, exposure estimations presented below are the combination of scenario 1 estimations and exposure estimation for injection application.As for spray application, exposure has been determined for the use of 2 aerosols. Indeed, it had been considered that exposure during injecting is necessarily lower than the exposure during spraying. No model is available for injection with an aerosol can. It has been considered that the proposition in HEAdhoc recommendation 6 to use the subsoil treatment model 2 for a classical injection can be used. In fact, Subsoil treatment model 2 is a mix of spray and injection events. In an injection process body exposure is not expected so only hand exposure is considered in recommendation for injection. |
|  | Parameters1 | Value | Unit | Reference |
|  | Dermal exposure |
| Tier 1 | Exposure duration | 15.8 | min | Expert judgement |
| Exposure model  | Subsoil treatment model 2 | Recommendation 6 of HEAd hoc WG (subsoil treatment model 2) page 21-22 |
| Potential dermal exposure (body) | (no dermal exposure on the body is expected) | mg/min |
| Actual hands under gloves dermal exposure  | 8 | mg/min |
| Active substance dermal absorption | 28 | % |  |
| Exposure by inhalation |
| Exposure model  | Subsoil treatment model 2 | Recommendation 6 of HEAd hoc WG (subsoil treatment model 2) page 21-22 |
| Indicative inhalation exposure (non-volatile compounds) | 0.57 | mg/m3 |
| Vapour pressure of the active substance | 2.16E-06 | Pa | Active substance CAR |
| Inhalation rate | 1.25 equivalent to 2.08E-02 | m3/hourm3/min | HEAd Hoc recommendation 14 |
| Inhalation absorption | 100 | % |  |
| Tier 2 | PPE, gloves for spray application | Gloves: 10 | % | HEEG opinion 9 |

**Calculations for Scenario [3] Spray application + injection**

| **Exposure scenario** | **Tier/PPE** | **Estimated inhalation uptake**(mg/kg bw/d) | **Estimated dermal uptake**(mg/kg bw/d) | **Estimated oral uptake**(mg/kg bw/d) | **Estimated total uptake**(mg/kg bw/d) |
| --- | --- | --- | --- | --- | --- |
| Scenario [3] | Tier 1 | 1.19 x 10-3 | 5.25 x 10-2 | - | 5.37 x 10-2 |
| Tier 2 | 1.19 x 10-3 | 2.70 x 10-2 | - | 2.82 x 10-2 |

**Summary of professional exposure**

| **Summary table: estimated exposure from professional uses** |
| --- |
| **Exposure scenario** | **Tier/PPE** | **Estimated inhalation uptake**(mg/kg bw/d) | **Estimated dermal uptake**(mg/kg bw/d) | **Estimated oral uptake**(mg/kg bw/d) | **Estimated total uptake**(mg/kg bw/d) |
| Scenario [1] | Tier 1  | 1.17 x 10-3 | 4.81 x 10-2 | - | 4.92 x 10-2 |
| Tier 2 | 1.17 x 10-3 | 2.26 x 10-2 | - | 2.38 x 10-2 |
| Scenario [3] | Tier 1 | 1.19 x 10-3 | 5.25 x 10-2 | - | 5.37 x 10-2 |
| Tier 2 | 1.19 x 10-3 | 2.70 x 10-2 | - | 2.82 x 10-2 |

***Non-professional exposure***

*Scenario [2] Spray application (Non-professionals)*

| **Description of Scenario [2] Spray application** |
| --- |
| To assess exposure during the use of the product for spray application, “Consumer Spraying model 2 with aerosol Can” was used according to the Recommendation no. 6 of the BPC Ad hoc Working Group on Human Exposure.An exposure duration of 15.8 min has been used to perform risk assessment. This value corresponds to the duration required for emptying 2 aerosols cans. Indeed, as the product will be used to treat small structures (such as furniture and flooring), it has been estimated that 2 cans will be required to treat this kind of structures (2.66 m² for curative dose and 4 m² for a preventive dose).In the biocidal Human Health Exposure methodology, it is indicated that exposure values from Consumer Spraying model 2 with aerosol can are normalised for a product with a density of 1. The density of the product is about 0.791. So exposure values were corrected according to this value. |
|  | Parameters1 | Value | Unit | Reference |
|  | Dermal exposure |
| Tier 1 | Exposure model  | Consumer Spraying and Dusting model 2 with aerosol Can | Biocidal Human Health Exposure methodology (p220) |
| Exposure duration | 15.8 | min |
| Potential dermal exposure (body) | 45.2 | mg/min |
| Potential dermal exposure (hands) | 64.7 | mg/min |
| Product density | 0.791 | mg/µl | Applicant data |
| Active substance dermal absorption | 28 | % |
| No PPE, clothing penetration | 100 | % |
|  | Exposure by inhalation |
| Tier 1 | Exposure model  | Consumer Spraying and Dusting model 2 with aerosol Can | Biocidal Human Health Exposure methodology (p220) |
| Indicative inhalation exposure (non-volatile compounds) | 35.9 | mg/m3 |
| Vapour pressure of the active substance | 2.16E-06 | Pa | Applicant data |
| Inhalation rate | 1.25 equivalent to 2.08E-02 | m3/hourm3/min | HEAd Hoc Recommendation n° 14 |
| Inhalation absorption | 100 | % |  |

**Calculations for Scenario [2] Spray application (Non-professionals)**

| **Exposure scenario** | **Tier/PPE** | **Estimated inhalation uptake**(mg/kg bw/d) | **Estimated dermal uptake**(mg/kg bw/d) | **Estimated oral uptake**(mg/kg bw/d) | **Estimated total uptake**(mg/kg bw/d) |
| --- | --- | --- | --- | --- | --- |
| Scenario [2] | Tier 1 | 1.17 x 10-3 | 4.81 x 10-2 | - | 4.92 x 10-2 |

*Scenario [4]* *Spray application + injection*

| **Description of Scenario [4] Spray application + injection** |
| --- |
| As injection is always combined with a surface spray application, exposure estimations presented below are the combination of scenario 1 estimations and exposure estimation for injection application.As for professional, there is no specific model for the injection with a can. The subsoil treatment model 2 can’t be applied as it is based on professional exposure data and only hand exposure under gloves is available.For this scenario, the exposure values of the exposure model taken for the spray application have been multiplied by two in order to simulate an application by spray followed by an application by injection.In the biocidal Human Health Exposure methodology, it is indicated that exposure values from Consumer Spraying model 2 with aerosol can are normalised for a product with a density of 1. The density of the product is about 0.791. So exposure values were corrected according to this value. |
|  | Parameters1 | Value | Unit | Reference |
| Dermal exposure |
| Tier 1 | Exposure model  | Consumer Spraying and Dusting model 2 with aerosol Can | Biocidal Human Health Exposure methodology (p220) |
| Exposure duration | 15.8 | min |
| Potential dermal exposure (body) | 45.2 **x 2** = 90.4 | mg/min |
| Potential dermal exposure (hands) | 64.7 **x 2** = 129.4 | mg/min |
| Active substance dermal absorption | 28 | % |  |
| No PPE, clothing penetration | 100 | % |  |
| Inhalation exposure |
| Tier 1 | Exposure model  | Consumer Spraying and Dusting model 2 with aerosol Can | Biocidal Human Health Exposure methodology (p220) |
| Indicative inhalation exposure (non-volatile compounds) | 35.9 **x 2** = 71.8 | mg/m3 |
| Vapour pressure of the active substance | 2.16E-06 | Pa |  |
| Inhalation rate | 1.25 equivalent to 2.08E-02 | m3/hourm3/min | HEAd Hoc recommendation 14 |
| Inhalation absorption | 100 | % |  |

**Calculations for Scenario [4] Spray application + injection**

| **Exposure scenario** | **Tier/PPE** | **Estimated inhalation uptake**(mg/kg bw/d) | **Estimated dermal uptake**(mg/kg bw/d) | **Estimated oral uptake**(mg/kg bw/d) | **Estimated total uptake**(mg/kg bw/d) |
| --- | --- | --- | --- | --- | --- |
| Scenario [4] | Tier 1 | 2.34 x 10-3 | 9.61 x 10-2 | - | 9.85 x 10-2 |

**Calculations for Scenario [2 and 4]**

| **Summary table: systemic exposure from non-professional uses** |
| --- |
| **Exposure scenario** | **Tier/PPE** | **Estimated inhalation uptake**(mg/kg bw/d) | **Estimated dermal uptake**(mg/kg bw/d) | **Estimated oral uptake**(mg/kg bw/d) | **Estimated total uptake**(mg/kg bw/d) |
| Scenario [2] | Tier 1 | 1.17 x 10-3 | 4.81 x 10-2 | - | 4.92 x 10-2 |
| Scenario [4] | Tier 1 | 2.34 x 10-3 | 9.61 x 10-2 | - | 9.85 x 10-2 |

***Exposure of the general public***

For secondary exposure, as described in TNsG for Human Exposure (2002 and 2007), it was considered occurring soon after application with a short exposure period (acute phase) or with a long-term and repeated exposure (chronic phase). It concerns:

* for acute phase, scenarios of sanding treated wood (adult) and chewing treated wood offcuts (infant),
* for chronic phase the scenarios of professional sanding, inhalation of volatilised residues indoors (adult, child and infant), of child playing on playground structure outdoors and infant playing on weathered (playground) structure and mouthing.

*Scenario [5] Adult amateur sanding processing wood (acute exposure)*

| **Description of Scenario [5]** |
| --- |
| For the assessment of dermal and inhalation exposures during sanding/processing of treated wood composites by an adult, it has been considered an application rate product of 450 ml/m² (worst-case). The area of wood to be sanded was calculated considering a piece of wood with a lenght of 250 cm and a height of 4 cm. It has been considered that the exposure comes from the outer layer of the piece of wood (thickness of 1 cm). |
|  | Parameters1 | Value | Units | Reference |
| Tier 1 | Application rate  | 45 | µl/cm² |  |
| Wood density | 0.4 | g/cm3 | Default |
| Dust concentration in air | 5 | mg/m3 | Default |
|  | Exposure duration | 1 | hour | Acute scenario |
|  | Inhalation rate | 1.25 | m3/h | HEAd Hoc recommendation 14 |
|  | Protection factor (No PPE) | 1 | - |  |
|  | Retention active susbtance | 100 | % |  |
|  | Percentage dislogeable | 3 | % | TNsG |
|  | Hand surface | 410 | cm² | HEAd Hoc recommendation 14 |
|  | Dermal absorption | 28 | % |  |

**Calculations for Scenario [5] Acute secondary dermal and inhalation exposures**

| **Summary table: systemic exposure from non-professional uses** |
| --- |
| **Exposure scenario** | **Tier/PPE** | **Estimated inhalation uptake**(mg/kg bw/d) | **Estimated dermal uptake**(mg/kg bw/d) | **Estimated oral uptake**(mg/kg bw/d) | **Estimated total uptake**(mg/kg bw/d) |
| Scenario [5] | Tier 1 / No PPE | 9.31 x 10-5 | 1.53 x 10-2 | - | 1.54 x 10-2 |

*Scenario [6] Toddler chewing wood composite chips treated with application dose of 450 ml/m² (acute exposure)*

| **Description of Scenario [6]** |
| --- |
| In this scenario, oral exposure has been calculated considering the size of the wood composite chips, the amount of active substance contained in treated wood and that 10% of this content is released during chewing into the toddler’s mouth according to TNsG, 2002.As a worst-case, it has been considered that the wood was treated with a total application dose of 450 ml/m2, corresponding to a curative treatment by brushing or spraying followed by injection.  |
|  | Parameters1 | Value | Units | Reference |
| Tier 1 | Application rate product | 45 | µl/cm² |  |
| Content of active substance | 0.7 | % |  |
| Release of bound active substance by chewing | 10 | % | TNsG Human Exposure 2002 |
| Size of wood composite chips | (4x4)x2 + (4x1)x4 = 48 | cm² |  |
|  | Toddler body weight  | 10 | kg | HEAD Hoc Recommendation N°14 |
|  | Oral absorption | 100 | % |  |

**Calculations for Scenario [6] Toddler chewing wood composite chips treated with application dose of 450 ml/m²**

| **Exposure scenario** | **Tier/PPE** | **Estimated inhalation uptake**(mg/kg bw/d) | **Estimated dermal uptake**(mg/kg bw/d) | **Estimated oral uptake**(mg/kg bw/d) | **Estimated total uptake**(mg/kg bw/d) |
| --- | --- | --- | --- | --- | --- |
| Scenario [6] | Tier 1 / No PPE | - | - | 1.28 x 10-1 | 1.28 x 10-1 |

*Scenario [7] Adult professional Sanding treated wood (chronic exposure)*

| **Description of Scenario [7]** |
| --- |
| After treatment of the wood, adult can be chronically exposed by inhalation and dermal contact to the product when sanding or processing of treated wood composites.In this scenario it has been taken into account a worst-case application rate product of 45 µl/cm² ( corresponding to 450 ml/m2). According to TNsG 2002, it is considered a wood composite of 250 cm length, 4 cm large and 4 cm high with an area of wood to be sanded of 4032 cm². Considering an outer layer thickness of 1 cm, the volume of outer layer is about 3008 cm3. |
|  | Parameters1 | Value | Units | Reference |
| Tier 1 | Exposure duration | 6 | hours |  |
| Application rate product | 45 | µl/cm² |  |
| Surface area of wood to be sanded | 4.03 x 103 | cm² |  |
| Outer layer thickness | 1 | cm |  |
| Volume of outer layer | 3008 | cm3 |  |
| Wood density | 0.4 | g/cm3 | TNsG 2002 |
| Dust concentration in air | 5 | mg/m3 |  |
| Inhalation rate | 1.25 | m3/h | HEAD Hoc Recommendation n° 14 |
| Protection factor (No PPE) | 1 |  |  |
| Inhalation absorption | 100 | % | AR of permethrin |
| Percentage dislodgeable | 3 | % | TNsG 2002 |
| Hand surface | 410 | cm² | HEAD Hoc Recommendation n° 14 |
| Dermal absorption | 28 | % |  |

**Calculations for Scenario [7] Sanding treated wood (chronic exposure)**

| **Exposure scenario** | **Tier/PPE** | **Estimated inhalation uptake**(mg/kg bw/d) | **Estimated dermal uptake**(mg/kg bw/d) | **Estimated oral uptake**(mg/kg bw/d) | **Estimated total uptake**(mg/kg bw/d) |
| --- | --- | --- | --- | --- | --- |
| Scenario [7] | Tier 1 / No PPE | 5.58E-4 | 1.53E-2 | - | 1.59E-2  |

*Scenario [8] Adult, Inhalation of volatilised residues indoors (chronic exposure)*

| **Description of Scenario [8]** |
| --- |
| Chronic inhalation exposure to volatilised residues indoors has been assessed for adult considering the scenario ”assessment of Inhalation Exposure of Volatilised Biocide Active Substance” from the Opinion n°13 of HEEG with calculation of the Saturated Vapour Concentration (SVC) for 24 hours (worst-case) following this formula :SVC = Mw x vp : R x T (mg/m3)The exposure is calculated with the following formula :Exposure = SVC x inhalation rate / body weight (mg/kg bw/d) |
|  | Parameters1 | Value | Units | Reference |
| Tier 1 | Vapour pressure (vp) | 2.2 x 10-6 | Pa | AR of permethrin |
| Molecular weight (Mw) | 391.29 | g/mol | AR of permethrin |
| Gas constant (R) | 8.31451 | J.mol-1.K-1 | AR of permethrin |
| Temperature (T) | 293 | K | AR of permethrin |
| Adult body weight | 60 | kg | HEAD Hoc Recommendation n° 14 |
| Adult inhalation rate | 16 | m3/24h | HEAD Hoc Recommendation n° 14 |

**Calculations for Scenario [8] Adult, Inhalation of volatilised residues indoors (chronic exposure)**

| **Exposure scenario** | **Tier/PPE** | **Estimated inhalation uptake**(mg/kg bw/d) | **Estimated dermal uptake**(mg/kg bw/d) | **Estimated oral uptake**(mg/kg bw/d) | **Estimated total uptake**(mg/kg bw/d) |
| --- | --- | --- | --- | --- | --- |
| Scenario [8] | Tier 1 / No PPE | 9.43 x 10-5 | - | - | 9.43 x 10-5 |

*Scenario [9] Infant, Inhalation of volatilised residues indoors (chronic exposure)*

| **Description of Scenario [9]** |
| --- |
| Chronic inhalation exposure to volatilised residues indoors has been assessed for adult considering the scenario ”assessment of Inhalation Exposure of Volatilised Biocide Active Substance” from the Opinion n°13 of HEEG with calculation of the Saturated Vapour Concentration (SVC) for 24 hours (worst-case) following this formula :SVC = Mw x vp : R x T (mg/m3)The exposure is calculated with the following formula :Exposure = SVC x inhalation rate / body weight (mg/kg bw/d) |
|  | Parameters1 | Value | Units | Reference |
| Tier 1 | Vapour pressure (vp) | 2.2 x 10-6 | Pa | AR of permethrin |
| Molecular weight (Mw) | 391.29 | g/mol | AR of permethrin |
| Gas constant (R) | 8.31451 | J.mol-1.K-1 |  |
| Temperature (T) | 293 | K |  |
| Infant body weight | 8 | kg | HEAD Hoc Recommendation n° 14 |
| Infant inhalation rate | 5.4 | m3/24h | HEAD Hoc Recommendation n° 14 |

**Calculations for Scenario [9] Infant, Inhalation of volatilised residues indoors (Chronic exposure)**

| **Exposure scenario** | **Tier/PPE** | **Estimated inhalation uptake**(mg/kg bw/d) | **Estimated dermal uptake**(mg/kg bw/d) | **Estimated oral uptake**(mg/kg bw/d) | **Estimated total uptake**(mg/kg bw/d) |
| --- | --- | --- | --- | --- | --- |
| Scenario [9] | Tier 1 / No PPE | 2.39 x 10-4 | - | - | 2.39 x 10-4 |

*Scenario [10] Toddler, Inhalation of volatilised residues indoors (chronic exposure)*

| **Description of Scenario [10]** |
| --- |
| Chronic inhalation exposure to volatilised residues indoors has been assessed for adult considering the scenario ”assessment of Inhalation Exposure of Volatilised Biocide Active Substance” from the Opinion n°13 of HEEG with calculation of the Saturated Vapour Concentration (SVC) for 24 hours (worst-case) following this formula :SVC = Mw x vp : R x T (mg/m3)The exposure is calculated with the following formula :Exposure = SVC x inhalation rate / body weight (mg/kg bw/d) |
|  | Parameters1 | Value | Units | Reference |
| Tier 1 | Vapour pressure (vp) | 2.2 x 10-6 | Pa | AR of permethrin |
| Molecular weight (Mw) | 391.29 | g/mol | AR of permethrin |
| Gas constant (R) | 8.31451 | J.mol-1.K-1 |  |
| Temperature (T) | 293 | K |  |
| Toddler body weight | 10 | kg | HEAD Hoc Recommendation n° 14 |
| Toddler inhalation rate | 8 | m3/24h | HEAD Hoc Recommendation n° 14 |

**Calculations for Scenario [10] Toddler, Inhalation of volatilised residues indoors (chronic exposure)**

| **Summary table: systemic exposure from non-professional uses** |
| --- |
| **Exposure scenario** | **Tier/PPE** | **Estimated inhalation uptake**(mg/kg bw/d) | **Estimated dermal uptake**(mg/kg bw/d) | **Estimated oral uptake**(mg/kg bw/d) | **Estimated total uptake**(mg/kg bw/d) |
| Scenario [10] | Tier 1 / No PPE | 2.83 x 10-4 | - | - | 2.83 x 10-4 |

*Scenario [11] Child playing on playground structure outdoors (chronic exposure)*

| **Description of Scenario [11]** |
| --- |
| For the assessment of this exposure, amount of active substance on hand has been calculated. For this calculation, it has been considered according to the TNsG 2002 that 20% of hand is in contact with the treated surface and a wood-hand transfer factor of 3%.For the assessment of this scenario, it has been considered an application rate product of 450 ml/m² (worst-case) |
|  | Parameters1 | Value | Units | Reference |
| Tier 1 | Application rate product | 450 | ml/m² |  |
| Hand surface area contact | 330.90 | cm² | HEAD Hoc Recommendation N°14 |
| Contaminated area | 20 | % | TNsG 2002 |
| Dislogeable fraction | 3 | % | TNsG 2002 |
| Dermal absorption | 28 | % |  |
| Child body weight  | 15 | kg | HEAD Hoc Recommendation N°14 |

**Calculations for Scenario [11] Child playing on playground structure outdoors (chronic exposure)**

| **Exposure scenario** | **Tier/PPE** | **Estimated inhalation uptake**(mg/kg bw/d) | **Estimated dermal uptake**(mg/kg bw/d) | **Estimated oral uptake**(mg/kg bw/d) | **Estimated total uptake**(mg/kg bw/d) |
| --- | --- | --- | --- | --- | --- |
| Scenario [11] | Tier 1 / No PPE | - | 9.50 x 10-3 | - | 9.50 x 10-3 |

*Scenario [12] Toddler playing on weathered (playground) structure and mouthing (chronic exposure)*

| **Description of Scenario [12]** |
| --- |
| Chronic exposure of infant *via* dermal route and ingestion has been performed in this scenario.For the assessment, it has been considered an application rate product of 450 ml/m² and a contact surface of 0.02 m² and a dislogeable fraction of 3% according to the TNsG 2002..As a worst-case, it has been considered that the wood was treated with a total application dose of 450 ml/m2, corresponding to a curative treatment by brushing or spraying and injection. |
|  | Parameters1 | Value | Units | Reference |
| Tier 1 | Application rate product | 450 (Tier 1) | ml/m² |  |
| Hand surface area contact | 230.40 | cm² | HEAD Hoc Recommendation N°14 |
| Contaminated area | 20 | % | TNsG 2002 |
| Dislodgeable fraction | 3 | % | TNsG 2002  |
| Dermal absorption | 28 | % | - |
| Amount of ingested wood | 50 | cm² | - |
| Toddler body weight  | 10 | kg | HEAD Hoc recommendation 14 |

**Calculations for Scenario [12] Toddler playing on weathered (playground) structure and mouthing (chronic exposure)**

| **Summary table: systemic exposure from non-professional uses** |
| --- |
| **Exposure scenario** | **Tier/PPE** | **Estimated inhalation uptake**(mg/kg bw/d) | **Estimated dermal uptake**(mg/kg bw/d) | **Estimated oral uptake**(mg/kg bw/d) | **Estimated total uptake**(mg/kg bw/d) |
| Scenario [12] | Tier 1 / No PPE  | - | 1.03 x 10-2 | 4.00 x 10-2 | 5.03 x 10-2 |

**Summary Calculations for Scenario [5-12]**

| **Summary table: systemic exposure from non-professional uses** |
| --- |
| **Exposure scenario** | **Tier/PPE** | **Estimated inhalation uptake**(mg/kg bw/d) | **Estimated dermal uptake**(mg/kg bw/d) | **Estimated oral uptake**(mg/kg bw/d) | **Estimated total uptake**(mg/kg bw/d) |
| Scenario [5] | Tier 1 / No PPE | 9.31 x 10-5 | 1.53 x 10-2 | - | 1.54 x 10-2 |
| Scenario [6] | Tier 1 / No PPE | - | - | 1.28 x 10-1 | 1.28 x 10-1 |
| Scenario [7] | Tier 1 / No PPE | 5.58 x 10-4 | 1.53 x 10-2 | - | 1.59 x 10-2  |
| Scenario [8] | Tier 1 / No PPE | 9.43 x 10-5 | - | - | 9.43 x 10-5 |
| Scenario [9] | Tier 1 / No PPE | 2.39 x 10-4 | - | - | 2.39 x 10-4 |
| Scenario [10] | Tier 1 / No PPE | 2.83 x 10-4 | - | - | 2.83 x 10-4 |
| Scenario [11] | Tier 1 / No PPE | - | 9.50 x 10-3 | - | 9.50 x 10-3 |
| Scenario [12] | Tier 1 / No PPE | - | 1.03 x 10-2 | 4.00 x 10-2 | 5.03 x 10-2 |

**Further information and considerations on scenario**

*Combined scenarios*

| **Summary table: combined systemic exposure from non-professional uses** |
| --- |
| **Scenarios combined** | **Estimated inhalation uptake**(mg/kg bw/d) | **Estimated dermal uptake**(mg/kg bw/d) | **Estimated oral uptake**(mg/kg bw/d) | **Estimated total uptake**(mg/kg bw/d) |
| Scenarios [12 + 10](Toddler playing on weathered structure and mouthing + inhalation of volatilised residues) | 2.83 x 10-4 | 1.03 x 10-2 | 4.00 x 10-2 | 5.06 x 10-2 |

***Monitoring data***

*-*

***Summary of exposure assessment***

| **Scenarios and values to be used in risk assessment** |
| --- |
| **Scenario number** | **Exposed group****(e.g. professionals, non-professionals, bystanders)** | **Tier/PPE** | **Estimated total uptake**(mg/kg bw/d) |
|  **Primary exposures** |
| 1. Spray application | Professional users | Tier 1 | 6.23 x 10-2 |
| Tier 2 (gloves) | 3.01 x 10-2 |
| 2. Spray application | Non-professional users | Tier 1 | 6.23 x 10-2 |
| 3. Spray application + injection | Professional | Tier 1 | 6.67 x 10-2 |
| Tier 2 | 1.45 x 10-2 |
| 4. Spray application + injection | Non-professional users | Tier 1 | 1.25 x 10-1 |
| **Secondary exposures** |
| 5. Adult amateur sanding/processing of treated wood composites | Adult amateur (general public) | Tier 1 | 1.54 x 10-2 |
| 6. Toddler chewing wood composite chips treated  | Infant (general public) | Tier 1 | 1.28 x 10-1 |
| 7. Adult professional sanding/processing of treated wood composites (chronic) | Adult (professional) | Tier 1 | 1.59 x 10-2 |
| 8. Inhalation of volatilised residues indoors (adult) | Adult (general public)  | Tier 1 | 9.86 x 10-6 |
| 9. Inhalation of volatilised residues indoors (infant) | Infant (general public) | Tier 1 | 2.49 x 10-5 |
| 10. Inhalation of volatilised residues indoors (toddler) | Toddler (general public) | Tier 1 | 2.96 x 10-5 |
| 11. Child playing on playground structure outdoors | Child (general public) | Tier 1 | 9.50x 10-3 |
| 12. Toddler playing on weathered (playground) structure and mouthing  | Toddler (general public) | Tier 1 | 5.03 x 10-2 |

***Dietary exposure***

The intended use descriptions of the permethrin containing biocidal products for which authorisation is sought indicate that these uses are not relevant in terms of residues in food and feed. The product is to be used for preventive and curative treatment of interior woods that do not come in direct contact with food and feedstuff. No further data are required concerning the residue behaviour.

#### Risk characterisation for human health

**Reference values to be used in Risk Characterisation**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Reference**  | **Study** | **NOAEL (LOAEL)** | **AF1** | **Correction for oral absorption** | **Value**(mg/kg bw/d) |
| AELshort-term | 2-year rat toxicity study | NOAEL = 50 mg/kg bw/d | 100 | No | 0.5 |
| AELmedium-term/long-term | 1-year dog chronic toxicity study | NOAEL = 5 mg/kg bw/d | 100 | No | 0.05 |
| ARfD | 2-year rat toxicity study | NOAEL = 50 mg/kg bw/d | 100 | No | 0.5 |
| ADI | 1-year dog study | NOAEL = 5 mg/kg bw/d | 100 | No | 0.05 |

1 Please explain background and reason for assessment factor.

**Maximum residue limits or equivalent**

|  |  |  |  |
| --- | --- | --- | --- |
| **MRLs or other relevant reference values** | **Reference**  | **Relevant commodities** | **Value** |
| MRL | EU Reg. 396/2005 (PPP) | All commodities | Cf: Reg. (EU) 2017/623 |
| EU Reg. 470/2009 (VMP) | Food of animal origin (bovine) | Cf: Reg (EU) 37/2010 |

PPP: plant protection product

VMP: veterinary medicinal product

As the product is to be used for preventive and curative treatment of interior woods that do not come in direct contact with food and feedstuff, the existing MRLs are not expected to be exceeded.

***Risk for industrial users***

***-***

***Risk for professional users***

**Systemic effects**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Task/****Scenario** | **Tier** | **Systemic NOAEL****mg/kg bw/d** | **AEL****mg/kg bw/d** | **Estimated uptake****mg/kg bw/d** | **Estimated uptake/ AEL** **(%)** | **Acceptable****(yes/no)** |
| 1. Spray application | Tier 1 | 5 | 0.05 | 4.92 x 10-2 | **98.5** | **yes** |
| Tier 2 | 2.38 x 10-2 | 47.54 | yes |
| 3. Spray application + injection | Tier 1 | 5.37 x 10-2 | 107 | No |
| Tier 2 | 2.82 x 10-2 | 56.4 | yes |

**Conclusion**

In conclusion, considering the scenarios individually, the risk is acceptable in tier 1 without PPE for spray application alone and for spray application combined with injection in Tier 2 (with gloves),.

***Risk for non-professional users***

**Systemic effects**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Task/****Scenario** | **Tier** | **Systemic NOAEL****mg/kg bw/d** | **AEL****mg/kg bw/d** | **Estimated uptake****mg/kg bw/d** | **Estimated uptake/ AEL** **(%)** | **Acceptable****(yes/no)** |
| 2. Spray application | Tier 1 | 50 | 0.5 | 4.92 x 10-2 | 9.8 | yes |
| 4. Spray application + injection | Tier 1 | 9.85 x 10-1 | 19.7 | yes |

**Conclusion**

In conclusion for non-professional users, the risk is acceptable for all scenarios without PPE.

**Local effects**

According to the BPR Guidance Volume III Human health – Part B and C Risk Assessment, the BAND A evaluation scheme is applied for the labeling EUH 066.

In order to take into account the risk of skin dryness or cracking during the handling of product (repeated exposure), the following RMMs are added:

* Avoid contact with skin;
* Wash hands thoroughly after handling.

***Risk for the general public***

**Systemic effects**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Task/****Scenario** | **Tier** | **Systemic NOAEL****mg/kg bw/d** | **AEL****mg/kg bw/d** | **Estimated uptake****mg/kg bw/d** | **Estimated uptake/ AEL** **(%)** | **Acceptable****(yes/no)** |
| 5. Adult amateur sanding/processing of treated wood composites | Tier 1 | 50 | 0.5 | 1.54 x 10-2 | 3.08 | yes |
| 6. Toddler chewing wood composite chips treated  | Tier 1 | 50 | 0.5 | 1.28 x 10-1 | 25.6 | yes |
| 7. Adult amateur sanding/processing of treated wood composites (chronic) | Tier 1 | 5 | 0.05 | 1.59 x 10-2 | 31.73 | yes |
| 8. Inhalation of volatilised residues indoors (adult) | Tier 1 | 5 | 0.05 | 9.43 x 10-5 | 0.2 | yes |
| 9. Inhalation of volatilised residues indoors (infant) | Tier 1 | 5 | 0.05 | 2.39 x 10-4 | 0.5 | yes |
| 10. Inhalation of volatilised residues indoors (toddler) | Tier 1 | 5 | 0.05 | 2.83 x 10-4 | 0.6 | yes |
| 11. Child playing on playground structure outdoors | Tier 1 | 5 | 0.05 | 9.50 x 10-3 | 19.0 | yes |
| 12. Toddler playing on weathered (playground) structure and mouthing | Tier 1 | 5 | 0.05 | 5.03 x 10-2 | 100.6 | Yes considering the over-conservatism of the dislodgeable fraction\* |

*\*the dislodgeable fraction use for the modelling of this scenario is based on an insecticide applied on a painted wood. Insecticides are designed to stay on the wood for several years on the contrary of pt8 product. That’s why this approach is very conservative and that we consider that with a % of AEL of 100.6% the risk is still acceptable.*

**Combined scenarios for secondary exposure**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenarios combined** | **Tier** | **Systemic NOAEL****mg/kg bw/d** | **AEL****mg/kg bw/d** | **Estimated uptake****mg/kg bw/d** | **Estimated uptake/ AEL** **(%)** | **Acceptable****(yes/no)** |
| Scenarios 3+8Professional use(Spray application +injection+ inhalation of volatilised residues indoors) | 2 | 5 | 0.05 | 1.24 x 10-2 | 24.8 | yes |
| Scenarios 4+8Amateur use(Spray application + injection + inhalation of volatilised residues indoors) | 1 | 5 | 0.5 | 9.85 x 10-2 | 19.70 | yes |
| Scenarios 10+12Toddler exposure(Inhalation of volatilised residues indoors for a toddler + Toddler playing on weathered (playground) structure and mouthing  | 1 | 5 | 0.05 | 5.06 x 10-2 | 101.2 | Yes considering the over-conservatism of the dislodgeable fraction |

**Conclusion**

For combined exposure, the risk is acceptable for professional uses in tier 2 (gloves during application), for amateur uses and for toddler.

***Risk for consumers via residues in food***

The acute or chronic exposure to residues in food resulting from the intended uses is unlikely to cause a risk to consumers. Regarding consumer health protection, there are no objections against the intended uses. Wood treated with TX201 TRAITEMENT MEUBLES PARQUETS – SPRAY must contain label restrictions against use in contact with livestock, food and feed.

***Risk characterisation from combined exposure to several active substances or substances of concern within a biocidal product***

Not relevant.

### Risk assessment for animal health

Not relevant.

### Risk assessment for the environment

|  |
| --- |
| Please notice that the environmental risk assessment is reported as provided by the applicant. The FR CA position is presented in **green evaluation boxes at the end of each part of the environmental section.** |

#### Effects assessment on the environment

The product 11LBCEOL03 aerosol is a ready-to-use solvent-based wood preservative containing 0.70% w/w permethrin.

A summary of the available ecotoxicity data on the active substance permethrin is presented below. All the data are coming from the Assessment Report of the active substance (see Assessment Report of permethrin, PT08, April 2014)

**Table 2.2.8.1-1: Available aquatic ecotoxicity data on permethrin**

|  |  |  |  |
| --- | --- | --- | --- |
| **Species** | **Time scale** | **Endpoint** | **Toxicity (mg/L)** |
| **Aquatic organisms** |
| *Oncorhynchus mykiss* | 96h | LC50 (mortality) | 5.1\*10-3 mg/L |
| *Danio rerio* | 35 days | NOEC (reduced survival) | 4.1\*10-4 mg/L |
| *Daphnia magna* | 48h | LC50 (immobility and mortality) | 1.27\*10-3 mg/L |
| *Daphnia magna* | 21 days | NOEC (reproduction) | 4.7\*10-6 mg/L |
| *Pseudokirchneriellasubcapitata* | 72h | ErC50 (cell density) | > 1.13 mg/L |
| *Pseudokirchneriellasubcapitata* | 72h | NOEC (cell density) | < 0.0131 mg/L |
| *Pseudokirchneriellasubcapitata* | 72h | ErC10 (cell density) | 2.3\*10-3 mg/L |
| *Chironomus riparius* | 10 days | LC50 (adult emergence) | 2.11 mg/kg(spiked sediment) |
| *Chironomus riparius* | 96h | LC50 (survival) | 2.89\*10-3 mg/L(spiked water) |
| *Chironomus riparius* | 5 days after lastemergence | NOEC (adult emergence) | 0.1 mg/kg(spiked sediment) |
| Activated sewage sludge | 3h | EC50 | > 0.42 mg/L |
| Activated sewage sludge | 3h | NOEC | 4.95\*10-3 mg/L |

**Table 2.2.8.1-2: Available terrestrial ecotoxicity data on permethrin**

|  |  |  |  |
| --- | --- | --- | --- |
| **Species** | **Time scale** | **Endpoint** | **Toxicity (mg/L)** |
| **Terrestrial organisms** |
| Earthworms | acute | EC50 | 371 mg/kgwwt126 mg/kgdwt |
| Soil micro-organisms | 18 days | NOEC(nitrogen mineralisation) | > 31.7 mg/kgdwt |
| Soil micro-organisms | 42 days | NOEC(nitrogen mineralisation) | 9.17 mg/kgdwt |
| Soil micro-organisms | 40 days | NOEC(carbon mineralisation) | > 31.7 mg/kgdwt |
| Soil micro-organisms | 28 days | NOEC(carbon mineralisation) | 9.17 mg/kgdwt |
| Plants | Permethrin has been used in the crop protection field since 1977. During that time it has been cleared for use on several monocotyledonous and dicotyledonous crops, including cotton plants, corn, soybean, coffee, tobacco, oilseed rape, wheat, barley, alfalfa, vegetables, and fruits |
| *Helianthus annuus* | Not mentionned | NOER (emergence) | < 0.0128 mg/kg dwt |
| (seedling emergence) |
| Plants(seedling emergence) | Not mentionned | NOER (biomass) | 1.6 mg/kg dwt |
| *Avena sativa* and *Allium cepa*(vegetative vigour) | 21 days | Effects on biomass | < 20% at 6875 g/ha (9.17 mg/kg dwt) |
| Birds | Acute | LD50 (acute toxicity) | > 4 640 mg/kg b.w. |
| Birds | Short-term | LC50 (dietary toxicity) | > 10 000 ppm |
| Bobwhite quail | Long term | NOEC (reproduction) | 500 ppm |
| Honeybees | Acute | LD50 (oral toxicity) | 0.163 µg/bee |
| Honeybees | Acute | LD50 (contact toxicity) | 0.0235 µg/bee |
| Rat | Acute | LD50 (oral) | 480 mg/kg b.w. |

##### Information relating to the ecotoxicity of the biocidal product which is sufficient to enable a decision to be made concerning the classification of the product is required

There is no ecotoxicological data available for the product 11LBCEOL03 aerosol. The classification of the product is therefore based on data on the active substance and co-formulants.

Several aquatic ecotoxicological data on the active substance are available and are presented in the Table 2.2.8.1-1 above. Based on these data, the active substance permethrin is classified according to the Regulation (EC) No. 1272/2008 (CLP) as Aquatic Acute 1, H400 and Aquatic Chronic 1, H410, very toxic to aquatic life with long-lasting effects. Permethrin is assigned an acute M-factor of 100 and a chronic M-factor of 10000.

Based on the classification and the M-factor values of permethrin, the product 11LBCEOL03 aerosol is classified according to Regulation (EC) No. 1272/2008 (CLP) with the worst-case classification:

Signal Word: Warning

H400: Very toxic to aquatic life

H410: Very toxic to aquatic life with long-lasting effects.

The other co-formulants of the product are not classified for the environment and are not considered as substances of concern for the environment. Therefore, the co-formulants are not expected to have a significant impact on the ecotoxicological classification of the product 11LBCEOL03 aerosol as it is already classified with the worst classification H400/H410 due to the presence of permethrin.

Taking into account all these considerations (*i.e*. worst case classification of the product based on active substance data and composition of the product not influencing the ecotoxicological properties of the active substance), the classification of the product 11LBCEOL03 aerosol is based on the active substance data, according to the rules laid down in Regulation (EC) 1272/2008 (CLP). Consequently, no further aquatic ecotoxicity data on the product 11LBCEOL03 aerosol are deemed necessary.

The classification of the product is presented in IUCLID, Section 12 Classification and Labelling.

|  |
| --- |
| **Infobox 1 – FR:** We agree with the classification proposed by the applicant.  |

##### Further Ecotoxicological studies

No data is available.

|  |
| --- |
| **Data waiving** |
| Information requirement | Further ecotoxicological studies. |
| Justification | The product 11OLBCEOL03 aerosol is used for the preventive and curative treatment of interior woods against wood-boring insects and termites. These preventive and curative treatments are done by professionals and non-professionals by spray application or injection. As the product is for indoor use only, it is not expected that the environment will be contaminated directly or indirectly. Therefore, the risk of exposure of non-target organisms is negligible when using the product according to the label recommendations. Moreover, several aquatic and terrestrial ecotoxicity data are available on the active substance permethrin and are presented in the Tables 2.2.8.1-1 and 2.2.8.1-2 above. In addition, it is not suspected that the composition of the product 11LBCEOL03 aerosol would influence the ecotoxicological properties of the active substance in a way that may considerably alter the conclusions of the risk characterisation. Thus, no additional aquatic and terrestrial ecotoxicological study with the product 11LBCEOL03 aerosol was conducted to address this point.  |

##### Effects on any other specific, non-target organisms (flora and fauna) believed to be at risk (ADS)

No data is available.

|  |
| --- |
| **Data waiving** |
| Information requirement | Effects on any other specific, non-target organisms (flora and fauna) believed to be at risk.  |
| Justification | Based on the intended uses of the product 11LBCEOL03 aerosol there is no concern regarding other specific non-target organisms like for instance, sediment dwelling organisms, aquatic macrophytes or brackish, estuarine or marine organisms. Indeed, as explained under Point 2.2.8.1.2, the product is for indoor use only, it is therefore not expected that the environment will be contaminated directly or indirectly. Therefore, the risk of exposure of non-target organisms is negligible when using the product according to the label recommendations. Moreover, several aquatic and terrestrial ecotoxicity data are available on the active susbtance and are presented in the Tables 2.2.8.1-1 and 2.2.8.1-2 above. In addition, it is not suspected that the composition of the product 11LBCEOL03 aerosol would influence the ecotoxicological properties of the active substance in a way that may considerably alter the conclusions of the risk characterisation. Thus no additional aquatic or terrestrial ecotoxicological study with the product was conducted.  |

##### Supervised trials to assess risks to non-target organisms under field conditions

No data is available.

|  |
| --- |
| **Data waiving** |
| Information requirement | Supervised trials to assess risks to non-target organisms under field conditions. |
| Justification | This endpoint is relevant only for products in the form of bait or granules. The product 11LBCEOL03 aerosol is an aerosol. Therefore, no additional study is deemed necessary to address this point. |

##### Studies on acceptance by ingestion of the biocidal product by any non-target organisms thought to be at risk

No data is available.

|  |
| --- |
| **Data waiving** |
| Information requirement | Studies on acceptance by ingestion of the biocidal product by any non-target organisms thought to be at risk.  |
| Justification | This endpoint is relevant only for products in the form of bait or granules. The product 11LBCEOL03 aerosol is an aerosol. Therefore, no additional study is deemed necessary to address this point.  |

##### Secondary ecological effect e.g. when a large proportion of a specific habitat type is treated (ADS)

No data is available.

The product 11LBCEOL03 aerosol is used for the preventive and curative treatment of interior woods only against wood-boring insects and termites.

As the product is for indoor use only, it is not intended to be applied directly in a specific habitat such as water body, wetland, forest or field. No large proportion of specific habitat type will be treated with the product 11LBCEOL03 aerosol and it can be concluded that no secondary ecological effect is expected when using the product 11LBCEOL03 aerosol according to the label recommendations.

##### Foreseeable routes of entry into the environment on the basis of the use envisaged

The foreseeable routes of entry in the environment are based on the use envisaged and the behaviour of the product is extrapolated from the information on the active substance itself.

The product 11LBCEOL03 aerosol is used for the preventive and curative treatment of interior woods against wood-boring insects and termites. These preventive and curative treatments are done by professionals and non-professionals by spray application or injection.

Based on the intended uses of the product, no direct or indirect contamination of the STP, the surface water (including sediment) and the soil (including groundwater) is foreseen and the expected concentrations of permethrin in these compartments from the uses of the product are expected to be negligible.

Exposure of the atmosphere can be expected considering the mode of application by spraying of the product 11LBCEOL03 aerosol resulting in a direct emission to air. However, based on the indoor application of the product it is likely that emissions to the atmosphere will be limited in time and restricted to a local scale. Moreover, volatilisation of permethrin is considered to be negligible based on the vapour pressure (2.155\*10-6 Pa at 20°C) and Henry constant (4.6\*10-3 to 4.5\*10-2 Pa.m3/mol). In addition, as permethrin is rapidly degraded in the air (DT50 = 0.47 days), it would not be transported over large distances in the atmosphere.

Therefore the risk of contamination of air can be considered as negligible and this foreseeable route of entry in the environment is not of concern.

Please see section 2.2.8.2.2 ”Fate and distribution in exposed environmental compartments” for more information regarding permethrin fate and distribution in the environment.

|  |
| --- |
| **Infobox 2 – FR:** We agree with the evaluation presented by the applicant.  |

##### Further studies on fate and behaviour in the environment (ADS)

No data is available.

As explained above, the outdoor environment is not expected to be contaminated as the product is only used indoor.

Moreover, several environmental data are available on permethrin and its metabolites (see Assessment Report, permethrin, PT08, April 2014) and are presented in the section 2.2.8.2.2 ”Fate and distribution in exposed environmental comparments”.

Therefore, it can be concluded that there is no need to conduct additional environmental studies with the product 11LBCEOL03 aerosol.

##### Leaching behaviour (ADS)

The product 11LBCEOL03 aerosol is intended to be applied indoor for the preventive and curative treatment of interior woods. It is not intended to be used for the treatment of surfaces exposed to weathering. Therefore, leaching is not relevant for the product 11LBCEOL03 aerosol.

##### Testing for distribution and dissipation in soil (ADS)

No data is available.

|  |
| --- |
| **Data waiving** |
| Information requirement | Testing for distribution and dissipation in soil. |
| Justification | A fugacity model is used to estimate distribution of the active substance permethrin in soil, water and air. The model is Level III fugacity model (in EPI Suite v4.10). The data on permethrin used for the simulation come from the Assessment Report of permethrin (Product-Type 08 – April 2014), Appendix I, List of endpoints and are reported in the section ”2.2.8.2.2 Fate and distribution in exposed environmental compartments” of this PAR. The results are presented below :Soil: 53.9%Water: 5.09%Sediment:40.9%Air: 0.0995%However, as explained in the sections above, the soil (including groundwater) is not expected to be contaminated by the product 11LBCEOL03 aerosol because the product is for indoor use only.Moreover, several environmental data are available on permethrin and its metabolites (see Assessment Report, permethrin, PT08, April 2014) and are presented in the section 2.2.8.2.2 ”Fate and distribution in exposed environmental compartments”. Based on this assessment, there is no need to conduct additional studies on distribution and dissipation in soil with the product 11LBCEOL03 aerosol.  |

##### Testing for distribution and dissipation in water and sediment (ADS)

No data is available.

|  |
| --- |
| **Data waiving** |
| Information requirement | Testing for distribution and dissipation in water and sediment.  |
| Justification | As explained above, the fugacity model has shown a distribution of 5.09% of permethrin in water and 40.9% in sediment.However, as explained in the sections above, the surface water (including sediment) is not expected to be contaminated by the product 11LBCEOL03 aerosol because the product is for an indoor use only. Moreover, several environmental data are available on permethrin and its metabolites (see Assessment Report, permethrin, PT08, April 2014) and are presented in the section 2.2.8.2.2 ”Fate and distribution in exposed environmental compartments”. Based on this assessment, there is no need to conduct additional studies on distribution and dissipation in water and sediment with the product 11LBCEOL03 aerosol.  |

##### Testing for distribution and dissipation in air (ADS)

No data is available..

|  |
| --- |
| **Data waiving** |
| Information requirement | Testing for distribution and dissipation in air.  |
| Justification | Exposure of the atmosphere can be expected considering the mode of application by spraying of the product 11LBCEOL03 aerosol resulting in a direct emission to air. However, based on the indoor application of the product it is likely that emissions to the atmosphere will be limited in time and restricted to a local scale. Moreover, volatilisation of permethrin is considered to be negligible based on the vapour pressure (2.155\*10-6 Pa at 20°C) and Henry constant (4.6\*10-3 to 4.5\*10-2 Pa.m3/mol). As explained above, the fugacity model has shown a distribution of 0.0995% of permethrin in air. In addition, as permethrin is rapidly degraded in the air (DT50 = 0.47 days), it would not be transported over large distances in the atmosphere. This is confirmed by the calculated distribution of permethrin in air (with Epi Suite) which is 0.0995% (see point 2.2.8.1.10).Therefore the risk of contamination of air can be considered as negligible and this foreseeable route of entry in the environment is not of concern. Based on this assessment, there is no need to conduct additional studies on distribution and dissipation in air with the product 11LBCEOL03 aerosol.  |

##### If the biocidal product is to be sprayed near to surface waters then an overspray study may be required to assess risks to aquatic organisms or plants under field conditions (ADS)

No data is available.

|  |
| --- |
| **Data waiving** |
| Information requirement | Overspray study to assess risks to aquatic organisms or plants under field conditions.  |
| Justification | The product 11LBCEOL03 aerosol is intended to be used for the preventive and curative treatment of interior woods against wood-boring insects and termites. It is therefore not intended to be sprayed in or near surface water. Therefore no overspay is foreseen. Based on this assessment, an overspray study is not necessary for the product 11LBCEOL03 aerosol. |

##### If the biocidal product is to be sprayed outside or if potential for large scale formation of dust is given then data on overspray behaviour may be required to assess risks to bees and non-target arthropods under field conditions (ADS)

No data is available.

The product 11LBCEOL03 aerosol is intended to be used for the preventive and curative treatment of interior woods against wood-boring insects and termites.

The product is not intended to be sprayed into the outdoor environment and it has no potential for large scale formation of dust. Therefore there is no risk of exposure of honeybees and non-target arthropods.

Based on this assessment, no additional study with the product 11LBCEOL03 aerosol was conducted to address this point.

|  |
| --- |
| **Infobox 3 – FR:** We agree with all the waiving.  |

#### Exposure assessment

The environmental exposure assessment has been performed in accordance with the revised Emission Scenario Document for wood preservatives (revised ESD for PT08, 24/09/2013).

The product 11LBCEOL03 aerosol is used for the preventive and curative treatment of interior woods against wood-boring insects and termites. These preventive and curative treatments are done by professionals and non-professionals by spray application or injection.

According to the revised ESD for PT08, emissions to the environment following indoor treatments by spraying and injection are considered negligible.

Therefore, as the product 11LBCEOL03 aerosol is for indoor use only, an exposure of environmental compartments is unlikely.

Exposure of the atmosphere can be expected considering the mode of application by spraying of the product 11LBCEOL03 aerosol resulting in a direct emission to air. However, based on the indoor application of the product it is likely that emissions to the atmosphere will be limited in time and restricted to a local scale. Moreover, volatilisation of permethrin is considered to be negligible based on the vapour pressure (2.155\*10-6 Pa at 20°C) and Henry constant (4.6\*10-3 to 4.5\*10-2 Pa.m3/mol). In addition, as permethrin is rapidly degraded in the air (DT50 = 0.47 days), it would not be transported over large distances in the atmosphere.

Therefore, the risk of contamination of air can be considered as negligible and this foreseeable route of entry in the environment is not of concern.

Concerning cleaning, maintenance and waste disposal, all the waste wood, protection foil, cleaning solvents, used cans and unused products should be disposed of according to national waste disposal regulations. These scenarios are not considered in the risk assessment.

**General information**

|  |  |
| --- | --- |
| Assessed PT | PT 8 |
| Assessed scenarios | Scenario 1: indoor applications by spraying or injection |
| ESD(s) used | Revised Emission Scenario Document for wood preservatives, 2013 |
| Approach | Not relevant (no emission into the environment) |
| Distribution in the environment | Not relevant (no emission into the environment) |
| Groundwater simulation | Not relevant (no emission into the environment) |
| Confidential Annexes | No |
| Life cycle steps assessed | Scenario 1: Production: /NoFormulation NoUse: NoService life: No |
| Remarks |  |

##### Emission estimation

As explained above, no contamination either directly or indirectly of the STP, the surface water (including sediment) and the soil (including groundwater) is expected when using the product 11LBCEOL03 aerosol according to the label recommendations.

Regarding the air compartment, based on the indoor application of the product and on the physical chemical properties of the active substance, it is likely that emissions to the atmosphere will be negligible.

##### Fate and distribution in exposed environmental compartments

**Table 2.2.8.2.2-1: Identification of relevant receiving compartments based on the exposure pathway**

| **Identification of relevant receiving compartments based on the exposure pathway** |
| --- |
|  | Fresh-water | Freshwater sediment | Sea-water | Seawater sediment | STP | Air | Soil | Ground-water | Other |
| Indoor use | No | No | No | No | No | No | No | No | No |

Available data on the fate and behaviour of permethrin and its relevant metabolites are summarized in the following table. These data are coming from the Assessment Report of permethrin, PT08, April 2014.

**Table 2.2.8.2.2-2: Available fate and distribution data for the active substance permethrin and its metabolites**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Input** | **Permethrin** | **3-phenoxybenzylalcohol** | **PBA** | **DCVA** |
| Molecular weight [g/mol] | 391.29 | No data | No data | No data |
| Melting point [°C] | 33 - 35 | No data | No data | No data |
| Boiling point [°C] | 305 | No data | No data | No data |
| Vapour pressure [Pa] | 2.115\*10-6 at 20°C | No data | No data | No data |
| Henry’s law constant[Pa.m3.mol-1] | 4.6\*10-3 to 4.5\*10-2 | No data | No data | No data |
| Solubility in water[mg/L] | 0.18 - <0.00495 | No data | No data | No data |
| Partition coefficient (logPOW) | 4.67 at 25°C | No data | No data | No data |
| Adsorption / desorptionKoc [L/kg] | 26930 | No data | 141.2 | 93.2 |
| Biodegradability | Not readily biodegradable | No data | No data | No data |
| DT50 for hydrolysis insurface water | Hydrolytically stable under environmentally relevant pH andtemperature conditions | No data | No data | No data |
| DT50 for photolysis in surface water | Photolytically stable underenvironmentallyrelevant pH andtemperatureconditions | No data | No data | No data |
| DT50 for biodegradation in surface water | 27.1 to 46.7 days(whole system) | 5.1 days(whole system) | 60.3 – 63.3 days (whole system) (geometric mean= 61.8 days) | 80 to 145 days for trans-DCVA 62 to 188 days forcis-DCVA |
| DT50 for degradation in soil | 106 days(geometric mean) | Not relevant in soil | 1.7 – 2.5 days | 33.1 – 174.8 days |
| DT50 for degradation in air | 0.701 d when reacting with hydroxyl radicals 49.27 d when reacting with ozone | No data | No data | No data |

##### Calculated PEC values

As explained above, as the product is for indoor use only, no contamination either directly or indirectly of the STP, the surface water (including sediment) and the soil (including groundwater) is expected when using the product 11LBCEOL03 aerosol according to the label recommendations.
Regarding the air compartment, considering the indoor application of the product and the physical chemical properties of the active substance, it is likely that emissions to the atmosphere will be negligible. Therefore, expected concentrations of permethrin are considered negligible in all compartments, when using the product 11LBCEOL03 aerosol according to the label recommendations.

##### Primary and secondary poisoning

Primary poisoning

Primary poisoning, *i.e*. the direct consumption of the product by birds or mammals is not considered as relevant for the product 11LBCEOL03 aerosol. Indeed, primary poisoning may mainly occur when a product is applied together with food attractant or is applied as granular formulation, which is not the case of the product 11LBCEOL03 aerosol.

Secondary poisoning

As the product is for indoor use only, no risk of secondary poisoning via ingestion of potentially contaminated food (*e.g.* earthworm or fish) by birds or mammals is expected.

#### Risk characterisation

##### Atmosphere

Exposure of the atmosphere can be expected considering the mode of application by spraying of the product 11LBCEOL03 aerosol resulting in a direct emission to air. However, based on the indoor application of the product it is likely that emissions to the atmosphere will be limited in time and restricted to a local scale. Moreover, volatilisation of permethrin is considered to be negligible based on the vapour pressure (2.155\*10-6 Pa at 20°C) and Henry constant (4.6\*10-3 to 4.5\*10-2 Pa.m3/mol). In addition, as permethrin is rapidly degraded in the air (DT50 = 0.47 days), it would not be transported over large distances in the atmosphere.

Therefore, the risk of contamination of air can be considered as negligible when using the product 11LBCEOL03 aerosol according to the label recommendations.

##### Sewage treatment plant (STP)

As the product is for indoor use only, no contamination of the STP is expected.

Therefore, the risk for the STP is considered as negligible when using the product 11LBCEOL03 aerosol according to the label recommendations.

##### Aquatic compartment

As the product is for indoor use only, no contamination of the aquatic compartment, either directly or indirectly, is expected.

Therefore, the risk for the aquatic compartment is considered as negligible when using the product 11LBCEOL03 aerosol according to the label recommendations.

##### Terrestrial compartment

As the product is for indoor use only, no contamination of the terrestrial compartment, either directly or indirectly, is expected.

Therefore, the risk for the terrestrial compartment is considered as negligible when using the product 11LBCEOL03 aerosol according to the label recommendations

##### Groundwater

As the product is for indoor use only, no contamination of the groundwater is expected. Therefore, the foreseeable concentration in groundwater of the active substance and its relevant metabolites are considered as negligible and are not expected to exceed the maximum permissible concentration laid down by Directive 98/83/EC.

##### Primary and secondary poisoning

Primary poisoning

Primary poisoning, i.e. the direct consumption of the product by birds or mammals is not considered as relevant for the product 11LBCEOL03 aerosol. Indeed, primary poisoning may mainly occur when a product is applied together with food attractant or is applied as granular formulation, which is not the case of the product 11LBCEOL03 aerosol.

Secondary poisoning

As the product is for indoor use only, no risk of secondary poisoning via ingestion of potentially
contaminated food (e.g. earthworm or fish) by birds or mammals is expected.

##### Mixture toxicity

The mixture toxicity assessment is performed according to the Transitional guidance on mixture toxicity assessment for the environment of May 2014.

*Screening step*

Screening Step 1: Identification of the concerned environmental compartments

The product 11LBCEOL03 aerosol is used for the preventive and curative treatment of interior woods against wood-boring insects and termites. These preventive and curative treatments are done by professionals and non-professionals by spray application or injection.

As the product is for indoor use only, no contamination either directly or indirectly of the STP, the surface water (including sediment) and the soil (including groundwater) is expected. Exposure of the atmosphere can be expected considering the mode of application by spraying of the product 11LBCEOL03 aerosol, resulting in a direct emission to air. However, based on the indoor application of the product, it is likely that emissions to the atmosphere will be negligible.

Therefore, a significant exposure of environment is unlikely and a mixture toxicity assessment is not necessary for the product 11LBCEOL03 aerosol.

##### Aggregated exposure (combined for relevant emmission sources)

An assessment of aggregated exposure is judged not relevant for the product 11LBCEOL03 aerosol based on the decision scheme developed by UBA (see Figure 1). Indeed, as the emissions into the environment are negligible because the product is for indoor use only, there is no need for an estimation of aggregated exposure.



*Figure 1: Decision tree on the need for estimation of aggregated exposure*

|  |
| --- |
| **Overall conclusion on the risk assessment for the environment of the product** |
| The product 11LBCEOL03 aerosol is a ready-to-use solvent-based wood preservative containing 0.70% w/w permethrin. It is intended to be used for the preventive and curative treatment of interior woods against wood-boring insects and termites. These preventive and curative treatments are done by professionals and non-professionals by spray application or injection. As the product is for indoor use only, no contamination either directly or indirectly of the STP, the surface water (including sediment) and the soil (including groundwater) is expected. Regarding the air compartment, considering the indoor application of the product and the physical chemical properties of the active substance, it is likely that the emissions to the atmosphere will be negligible.Therefore, the risk for all compartments (STP, air, water, sediment, soil and groundwater) and the risk of primary and secondary poisoning are considered acceptable when using the product 11LBCEOL03 aerosol according to the label recommendations.There is no need for conducting a mixture toxicity assessment and an estimation of aggregated exposure. |

|  |
| --- |
| **Infobox 4 – FR:** We agree with the conclusions considering the strict practical uses claimed by the applicant.  |

### Measures to protect man, animals and the environment

Please refer to summary of the product assessment and to the relevant sections of the assessment report.

### Assessment of a combination of biocidal products

Not relevant.

### Comparative assessment

Not relevant.

# Annexes[[17]](#footnote-17)

## List of studies for the biocidal product

| **Section No** | **Reference No** | **Author** | **Year** | **Title** | **Owner of data** | **Letter of Access** | **Data protection claimed** | **Essential for the evaluation** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Yes** | **No** | **Yes** | **No** | **Y/N** |
|  |  | INVENTEC PERFORMANCE CHEMICALS SA | 2015 | Safety data sheet – NovaSpray n-butane/propane 2.5 bar | INVENTEC PERFORMANCE CHEMICALS SA |  |  |  | X | Y |
|  |  | Legay S. | 2015 | Certificate of analysis n° : COA-402/15/1172F/abg-eFCBA (Bordeaux, France) | V33 |  |  | X |  | Y |
|  |  | Legay S. | 2015 | Certificate of analysis n° : COA-402/14/1198F/abcdef-eFCBA (Bordeaux, France) | V33 |  |  | X |  | Y |
|  |  | Legay S. | 2016 | Certificate of analysis n° : COA-402/14/1198F/1/g/T6M-eFCBA (Bordeaux, France) | V33 |  |  | X |  | Y |
|  |  | Legay S. | 2011 | Validation of analytical method and chemical analysis of active ingredient declared in wood preservative 11LBCEOL03FCBA (Bordeaux, France) | V33 |  |  | X |  | Y |
|  |  | Shell Chemicals Europe B.V. | 2012 | Safety data sheet – ShellSol D60 | Shell Chemicals Europe B.V. |  |  |  | X | Y |
|  |  | Legay S. | 2015 | Certificate of analysis n° : COA-402/15/1198F/abcdef-eFCBA (Bordeaux, France) | V33 |  |  | X |  | Y |
|  |  | Legay S. | 2015 | Physico-chemical properties, technical characteristics and chemical analyses of the biocidal product 11LBCEOL03 before and after an accelerated storage procedure for 8 weeks at 40 ± 2°C in compliance with CIPAC MT 46.3 method (Handbook J, 2000)FCBA (Bordeaux, France)Report 402/14/1198F/abcdef-e | V33 |  |  | X |  | Y |
|  |  | Legay S. | 2016 | Physico-chemical properties, technical characteristics and chemical analyses of the biocidal product 11LBCEOL03 before and after an accelerated storage procedure for 14 days at 54 ± 2°C in compliance with CIPAC MT 46.3 method (Handbook J, 2000)FCBA (Bordeaux, France)Report 402/15/1172F/abg-e | V33 |  |  | X |  | Y |
|  |  | Legay S. | 2015 | Physical, chemical and technical characteristics of the biocidal product 11LBCEOL03 | V33 |  |  | X |  | Y |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Author(s)** | **Year** | **Title.Source (where different from company) Company, Report No. GLP (where relevant) / (Un)Published** | **Data Protection Claimed (Yes/No)** | **Owner (PUB / ORG)** | **Date of first submission** |
| Arana M., Arancon J. and Munné O. | 2012 | Determination of preventive action against *Hylotrupes bajulus* (Linnaeus) - Part 1: larvicidal effect according to EN 46-1 (2009) | Yes  | V33 | 13/04/2016 |
| Arana M., AranconJ. and Munné O. | 2012 | Determination of preventive action against *Reticulitermes* species according to EN 118:2005. | Yes  | V33 | 13/04/2016 |
| Arana M., AranconJ. and Munné O. | 2012 | Determination of the eradicant action against *Hylotrupes bajulus* (Linnaeus) larvae according to EN 1390:2006. | Yes  | V33 | 13/04/2016 |
| Schumacher P. and Fennert E.-M. | 2017 | Determination of the eradicant action against larvae of *Hylotrupes bajulus* (L.) according to EN 1390 (2006). | Yes | CECIL Division professionnelle groupe V33 | 13/04/2017 |
| Schumacher P. and Fennert E.-M. | 2012 | Determination of the eradicant efficacy in preventing hatching of *Anobium punctatum* (De Geer) according to EN 370 (1993) in combination with evaporative ageing procedure according to EN 73 (1988). | Yes | CECIL Division professionnelle groupe V33 | 13/04/2016 |
| Schumacher P. and Fennert E.-M. | 2017 | Determination of the eradicant action against larvae of *Anobium punctatum De Geer* according to EN 48 (2005). | Yes | CECIL Division professionnelle groupe V33 | 13/03/2017 |
| Schumacher P. and Fennert E.-M. | 2012 | Determination of the eradicant efficacy in preventing hatching of *Anobium punctatum* (De Geer) according to EN 370 (1993) in combination with evaporative ageing procedure according to EN 73 (1988). | Yes | CECIL Division professionnelle groupe V33 | 13/04/2016 |
| Schumacher P. and Fennert E.-M. | 2017 | Determination of the eradicant action against larvae of *Anobium punctatum De Geer* according to EN 48 (2005). | Yes | CECIL Division professionnelle groupe V33 | 13/03/2017 |
| Schumacher P. and Fennert E.-M. | 2016 | 11LBCEOL03. Determination of the protective effectiveness against *Anobium punctatum* (de Geer) by egg-laying and larval survival according to EN 49 part 1 (2016) after evaporative ageing procedure according to EN 73 (2014). | Yes | CECIL Division professionnelle groupe V33 | 13/03/2017 |
| Brunet C. and Paulmier I. | 2017 | 11LBCEOL03. Efficacité protectrice vis-a-vis de *Lyctus brunneus* selon NF EN 20-1 avec NF EN 73. | Yes | Groupe V33 | 13/03/2017 |
| Vuillemin J. and Paviel F. | 2016 | Evaluation de l'efficacité préventive de deux produits de traitement du bois 04LBCEOL689/2 et 11LBCEOL03 face aux attaques du termite souterrain *Coptotermes gestroi* à la Réunion.Selon la méthode NF EN 118 (Janvier 2014) avec NF EN 73 | Yes | Groupe V33 | 13/03/2017 |
| Ansard D. and Paulmier I. | 2016 | 11LBCEOL03. Efficacité préventive contre les termites souterrains selon NF EN 118 avec NF EN 73. | Yes | Groupe V33 | 13/03/2017 |

## Output tables from exposure assessment tools

For Human Health:

* Primary Exposure of Professionals and Secondary Exposure:



* Primary Exposure of Non-Professionals:



## New information on the active substance

No new information on the active substance regarding the physico chemical properties were provided.

## Residue behaviour

Not relevant.

## Summaries of the efficacy studies (B.5.10.1-xx)[[18]](#footnote-18)

Not relevant (IUCLID file available)

## Confidential annex

Please refer to the Confidential annex file.

## Other

1. Please fill in here the identifying product name from R4BP. [↑](#footnote-ref-1)
2. Please delete as appropriate. [↑](#footnote-ref-2)
3. Non-active substance(s), of which knowledge is essential for proper use of the product. In the SPC in the application the applicant shall indicate also the exact function (e.g. solvent, deterrent, preservative, pigment, etc.). In the SPC which will be disseminated this information will not be provided but limited to the name of non-active substance. [↑](#footnote-ref-3)
4. For micro-organisms based products: indication on the need for the biocidal product to carry the biohazard sign specified in Annex II to Directive 2000/54/EC (Biological Agents at Work). [↑](#footnote-ref-4)
5. Wood preservatives – Determination of the preventive action against *Hylotrupes bajulus (Linnaeus)* – Part 1:Larvicidal effect (Laboratory method). [↑](#footnote-ref-5)
6. Wood preservatives – Determination of the protective effectiveness against *Lyctus brunneus (Stephens)* – Part 1: Application by surface treatment (laboratory method). [↑](#footnote-ref-6)
7. Wood preservatives – Determination of the protective effectiveness against *Anobium punctatum (De Geer)* by egg-Iaying and larval survival – Part 1: Application by surface treatment (laboratory method). [↑](#footnote-ref-7)
8. Wood preservatives – Determination of preventive action against *Reticulitermes* species (European termites) (Laboratory method) [↑](#footnote-ref-8)
9. Wood preservatives – Determination of eradicant efficacy in preventing emergence of *Anobium punctatum (De Geer)* [↑](#footnote-ref-9)
10. Wood preservatives – Determination of the eradicant action against *Hylotrupes bajulus (Linnaeus)* [↑](#footnote-ref-10)
11. Wood preservatives – Determination of the eradicant action agaisnt larvae of *Anobium punctatum (De Geer)* [↑](#footnote-ref-11)
12. Copy this section as many times as necessary (one table per use). [↑](#footnote-ref-12)
13. Copy this section as many times as necessary (one table per use). [↑](#footnote-ref-13)
14. Performance criteria for curative wood preservatives as determined by biological tests (2004) [↑](#footnote-ref-14)
15. [EFSA journal 2012; 10(4):2665](http://onlinelibrary.wiley.com/doi/10.2903/j.efsa.2012.2665/full) [↑](#footnote-ref-15)
16. HEEG Opinion on Exposure model ”Primary exposure scenario – washing out of a brush which has been used to apply a paint”, endorsed at TM III 2010. [↑](#footnote-ref-16)
17. When an annex in not relevant, please do not delete the title, but indicate the reason why the annex should not be included. [↑](#footnote-ref-17)
18. If an IUCLID file is not available, please indicate here the summaries of the efficacy studies. [↑](#footnote-ref-18)