ENVIRONMENTAL DECLARATION

WTR

Produal

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The product is evaluated according to the Byggvarubedömningen's information requirements for assessment of products, Version 2019-1

1. Product information

Product

Product name:	WTRX-XX	
Article No.:	*54013xxxxx and 54014xxxxx*	
Product description:	Wireless transmitter	
Type of product:	☐ Chemical product	☒ Article
Date (year, month, day) of preparation/revision:	2021-04-19	

Supplier/Manufacturer

Supplier:	Produal Sverige AB
Manufacturer, if other than the supplier: *Voluntary information*	Produal Oy
Contact person:	Håkan Sjöberg
Address:	Solkraftsvägen 16B, 135 26 TYRESÖ
E-mail:	info@produal.se
Phone number:	+46 8 555 985 82

Supporting documentation

Has a declaration of performance in line with the European Construction Products Regulation (EU) no 305/2011, been prepared for the product?	☐ Yes	☒ No
Is the article/product an electronic product and covered by the RoHS-directive?	☒ Yes	☐ No
If the article/product is an electronic product that is covered by an exemption according to the RoHS-directive, specify which exemption and date (year, month, day) when the exemption expires if time-limited:	Exemptions according to RoHS: Date:	

2. Declaration of contents:

Please specify the full content of the article or the chemical product, *on delivery*, in Table 1, or alternatively attach other documentation that provides the corresponding information. For instructions, please refer to the "Annex 1. Declaration of content, Byggvarubedömningen's reporting requirements, 2019-1", which is found at the end of this document.

Table 1. Contents of included substances and material (declaration of content in accordance with the requirements).

Included substances and materials	**EC-/ CAS-number** *(alternatively, alloy number)*	**Weight%** *(of the entire product)*	*When applicable,* **state for which subcomponent**	**Weight%** *(of substance in subcomponent)*	**Comments** *(state any application of non-harmonized classifications)*
Polycarbonate, PC	**25037-45-0**	**45**	**Housing**	**100**	
Steel (Zn)	**7440-66-6**	**1**	**Screws**	**100**	
Cardboard, Multiboard kraft 450 g		**9**	**Package**	**100**	
E-Glass Fabric	**14808-60-7**	**7**	**PCB**	**45**	
Copper foil	**7440-50-8**	**3**	**PCB**	**20**	
Epoxy Resin	**67-64-1**	**6**	**PCB**	**35**	
Copper alloy	**7440-50-8**	**2**	**Connectors**	**80**	
Polyamide, PA	**63428-84-2**	**2**	**Connectors**	**20**	
SiO	**7631-86-9**	**1**	**Display**	**30**	
Cellulose triacetate	**9012-09-3**	**0**	**Display**	**13**	
Thionyl dichloride	**7719-09-7**	**6**	**Battery**	**47**	
Lithium metal	**7439-93-2**	**1**	**Battery**	**6**	
Carbon	**1333-86-4**	**1**	**Battery**	**5**	
Other materials in battery, each <2% of total weight		**6**	**Battery**	**42**	**Manufacturer does not provide substance/material information**
CO2 sensor, each substance <2 % of total weight		**3**	**CO_2 sensor**	**100**	**Manufacturer does not provide substance/material information**
Passive components (Resistors, capacitors, inductors), each category <2 % of total weight		**3**	**PCBA**	**10**	
Semiconductors (ICs, diodes, transistors, hybrid modules), each category <2 % of total weight		**2**	**PCBA**	**5**	
Electromechanical (switches) <2 % of total weight		**1**	**PCBA**	**3**	
Mechanical (Solderable nut and screw) <2 % of total weight		**0**	**PCBA**	**0**	
Others		**1**	**Display**	**57**	

If any deviations from Byggvarubedömningens declaration requirements exist, specify these in the comments in Table 1, or alternatively here.	Other comments:

Is the chemical composition different, for the product when applied (cured product) compared to the content at delivery? (Only for chemical products)	☐ Yes	☐ No
If *yes*, specify the content of the cured product in Table 2.		

Table 2. Contents for the applied product (full content in accordance with the declarations requirements)

Included substances and materials	**EC-/ CAS-number**	**Weight%** *(of the applied product)*	**Comments** *(state any application of non-harmonized classifications)*
If any deviations from Byggvarubedömningens declaration requirements exist, specify these in the comments in Table 1, or alternatively here.	Other comments:		

Does the product or any of its subcomponents contain substances with particularly hazardous properties (Substances of Very High Concern, SVHC-substances), which are included in the Candidate List at a concentration ≥0.1 weight%?	☐ Yes	☒ No
If *yes,* specify these substances in Table 1 together with the rest of the content of the product.		
State the date (year, month, day) for control of the Candidate List.	Date: 2021-04-19	
The concentration is calculated at component level established on the principle “once a product, always a product”. The Candidate List is available at: http://echa.europa.eu/sv/candidate-list-table .		

Nanomaterials

Does the product contain any nanomaterial that has been purposefully added to achieve a specific function? *Information regarding whether nanomaterial has been added to achieve a specific function can be stated but has no impact on the assessment (voluntary information).*	☐ Yes	☒ No
If *yes,* specify the material.	Material:	

3. Recycled raw material

Does the product contain recycled material?	☐ Yes	☒ No
If *yes*, specify in Table 3.		

If the product consists of recycled materials specify the material and the percentages of the total weight of the product, in *Table 3*, Recycled materials.

Table 3. Recycled material.

Material	**Percentage (%)** *Recycled material of the total product's weight*	**Percentage (%)** *of the recycled material that has not reached the consumer level, such as production waste, etc. (pre-consumer)*	**Percentage (%)** *of the recycled material that has reached the consumer level (post-consumer)*	**Comments**

If wood raw material is included

Can the product be ordered with sustainability certificates for the wood raw material?	☐ Yes	☐ No
If *yes:* Specify the percentage of wood raw material that is certified, what system has been used (e.g. FSC or PEFC) and give the license number for the certification.		
If *no:* Has wood raw material from documented sustainable forestry been used in the production of the product? If so, please indicate how much of the included wood raw material used that comes from documented sustainable forestry:		
If sustainability certificates are missing, state the harvesting country for wood raw material:		
Is the wood species or origin in the CITES appendix for endangered species?	☐ Yes	☐ No

4. The production phase

Has an Environmental Product Declaration (EPD) according to ISO 14025 and EN 15804 (or equivalent for other product groups) been prepared?	☐ Yes	☒ No
Has another type of environmental product declaration been prepared?	☐ Yes	☒ No
Has an active choice been made, regarding the electricity supplier, to promote electricity production from renewable energy sources?	☐ Yes	☒ No
If *yes*, describe the type of energy source, percentage of energy stemming from the renewable source, how long the agreement has been applied (start and end date), electricity supplier, and for which part of the production it is valid for:		

5. Distribution of the completed product

Describe the management of packaging for the distribution of the product. *State whether any system for taking back or recycling packaging or any other specific return system is used.* *Specify the packaging material used and which system of producer responsibility for packaging the supplier is affiliated to.* *Enter the proportion of recycled material, if any, included in the packaging.*	Description of the packaging: Cardboard box
Other information:	

6. Construction and usage phase

Are there any special requirements such as storage conditions etc. for the product during storage?	☐ Yes	☒ No	
If *yes*, describe:			
Are there any special requirements for adjacent building products because of this product?	☐ Yes	☒ No	
If *yes*, describe:			
Are there any operating/care instructions for the product?	☒ Yes	☐ No	
Is the product energy labelled in accordance with the Energy Labelling Directive (2010/30/EU)?	☐ Yes	☐ No	☒ Not relevant
If *yes,* state class (G to A, A+, A++, A+++):	Class:		

7. Waste management

Does the product require special measures to protect health and the environment in conjunction with demolition/dismantling?	☒ Yes	☐ No
If *yes,* describe: The product includes a battery. The battery may cause a fire or damage to the environment if punctured during dismantling.		
Is the product covered by the WEEE-directive 2012/19/EU (Swedish ordinance (2014:1075) on Producer Responsibility for electrical and electronic products when it becomes waste?	☒ Yes	☐ No
Is it possible to re-use all or parts of the product? (can the product be reused within the product's expected lifetime)?	☒ Yes	☐ No
If *yes,* describe: Product can be relocated within the product's expected lifetime.		
Is material recycling possible for all or parts of the product when it becomes waste?	☒ Yes	☐ No
If *yes,* describe: The plastic parts can be recycled in plastic recycling. The electronics can be recycled with discarded electrical and electronic equipment (WEEE).		
Is energy recycling possible for all or parts of the product when it becomes waste?	☒ Yes	☐ No
Does the supplier have any restrictions and recommendations for reuse, material- or energy recycling or disposal?	☐ Yes	☒ No
If *yes*, specify which: The housing can be energy recycled.		
When the supplied product becomes waste, is it classified as hazardous waste?	☒ Yes	☐ No
If *yes,* specify the waste code: The Swedish waste ordinance (2011:927) https://www.notisum.se/rnp/sls/lag/20110927.htm	Waste code: 16 06 05 The battery is removable, and it is considered to be hazardous waste.	

8. Indoor environment

Has the product a critical moisture condition: *Information regarding whether critical moisture conditions leading to microbial growth apply for the material/product should be stated but will not impact the assessment.*	☐ Yes	☒ No
If *Yes,* specify which:		
Is the article (or chemical product) intended for indoor use?	☒ Yes	☐ No
If *yes*, has emission data been produced for volatile organic compounds?	☐ Yes	☒ No
If *no*, is there any motivation for why emission data for volatile organic compounds is not relevant for the product?	Motivation: The product does not contain organic material.	

Byggvarubedömningen's Certificate of substance content and concentrations, Version 5.0.

The certificate is for the following products (product name on the application): * *(The name of the product/item is to be identical with the name stated when applying for assessment. The certificate can be used for several assessments.)*
WTR, including all the product variants. Examples or the product variant naming: WTR-RH, WTR24-CO2, WTRB-D-CO2-RH.

It is certified for the above products that (choose alternative A1, A2, B1 *or* B2): *	
A1 ☐	It is hereby certified that: • Concentrations of the constituent substances have been reported **down to a percentage by weight (wt%) of 0,01.** *(This implies a complete declaration of contents in which all substances present in concentrations of ≥0,01wt% have been reported.)* • Substances that are subject to specific concentration limits <0,01 wt%: These substances are reported if they occur in concentrations up to 10 times lower than their specific concentration limit. *(This means that if a substance's specific concentration limit is 0,0015 wt%, concentrations ≥0,00015 wt% are to be reported.)* • Actively added or contamination of mercury has been reported regardless of concentration. • Cadmium is reported in cases of ≥0,001 wt%.
B1 ☐	It is hereby certified that: • Concentrations of the constituent substances have been reported **down to 0,1 wt%.** *(This implies a complete declaration of contents in which all substances of concentrations ≥0,1wt% have been reported.)* • Substances that are subject to specific concentration limits <0,1 wt% have been reported when they occur. *(This means that if a substance's specific concentration limit is 0,0015 wt%, concentrations ≥0,0015 wt% are to be reported.)* • Actively added or contamination of mercury has been reported regardless of concentration. • Cadmium is reported in cases of ≥0,01 wt%.
I have not reported according to alternative A1 or B1, but I have followed the instructions for Declaration of content, Byggvarubedömningen's reporting requirements 2019-1 (Annex 1. Table 1):	
A2 ☒	Equivalent to ***Recommended*** level.
B2 ☐	Equivalent to ***Accepted*** level.

*It is further certified for the above specified products (choose alternative C or D): *	
C ☒	It is hereby certified that "Specifically indicated substances" in accordance with Annex 1. Table 2 have not been added during production or been formed through reactions between the substances in the product.
D ☐	Unfortunately, we have to notify that the specified products contain "Specifically indicated substances" in accordance with Annex 1, Table 2. One/some of these substances have been added during production or have been formed through reactions between the substances in the product, refer to the reported Declaration of content.

Annex 1.
Declaration of content, Byggvarubedömningen's reporting requirements, 2019-1.

An assessment is based on the complete contents of an item or a chemical product on delivery stated as wt% of the entire product. For the Accepted and Recommended levels, classified substances must be reported in the documentation if concentrations exceed limits (wt%) in accordance with Table 1, Classified substances. Substances that are not included under Table 1 must always be reported when concentrations of ≥2% occur. Reporting requirements for the Accepted level correspond to the eBVD15 requirements.

Contents can be specified in concentration intervals, and the assessment is then done based on the concentration that gives the strictest assessment. Examples of accepted intervals are: ≤1 %, 1–2,5 %, 2,5–10 %, 10–25 %, 25–50 %, 50–75 %, and 75–100 %. More information about what can be included in the same assessment is in the next section.

For chemical products, concentrations specified in the safety data sheet are governing, which means that the interval specified in a building product declaration must include that specified in the SDS.

Note that for a content to be considered fully reported, at least 98% of the product must be declared. Reports in which <98% is reported will be accepted if it is also evident that other substances/materials contribute <2% each and do not have properties according to Table 1. These can instead be reported with their function (filler <2 %, additive <2 %, etc.).

If classification is applied that is not covered by harmonised classification, this information must be provided in the declaration of contents for that substance and the assessment will be done on that basis.

For the possibility of achieving the Recommended assessment level for chemical contents, the product may contain no specifically indicated substances/substance groups, regardless of concentration, refer to Table 2.

Table 1. Reporting requirements for constituent substances. Note that the below only applies to reporting of substance contents. The complete assessment criteria are available on the website (https://byggvarubedomningen.se/dokument/). The table for reporting toward Accepted assessment level follows the eBVD15 requirements with an amendment for requirements concerning endocrine disrupting substances, see below.

Every constituent substance is to be reported as wt% of the entire product if it is equal to or more than the below reporting limits. If wt% is specified at component level, also the component's wt% of the entire product must be specified.

Classification/listing	**Reporting limit Accepted**	**Reporting limit Recommended**
Carcinogenic, Category 1A or 1B (H350)	0,1 %	0,01 %
Carcinogenic, Category 2 (H351)	1 %	0,1 %
Mutagenic, Category 1A or 1B (H340)	0,1 %	0,01 %
Mutagenic, Category 2 (H341)	1 %	0.1 %
Reproductive toxicity, Category 1A or 1B (H360)	0,3 %	0,03 %
Reproductive toxicity, Category 2 (H361)	2 %	0,3 %
Reproductive toxicity, effects on or via lactation (H362)	0,3 %	0,03 %
Endocrine disruptors [1,2,3]	0,1 %	0,01 %
PBT and/or vPvB substances [4,5]	0,1 %	0,01 %
Ozone depleting substances (EUH 059, H420)	0,1 %	0,01 %
Sensitisation, respiratory (H334)	0,2 %	0,02 %
Sensitisation, skin (H317)	1 %	0,1 %
Acute toxicity, Category 1 (H300, H310, H330, H301, H311 and/or H331)	0,1 %	0,01 %
Acute toxicity, Category 2 (H300, H310, H330, H301, H311 and/or H331)	1 %	0,1 %
Acute toxicity, Category 3 (H300, H310, H330, H301, H311 and/or H331)	2 %	1 %
Specific Target Organ Toxicity – Single Exposure (STOT-SE), Category 1 (H370)	1 %	0,1 %
Specific Target Organ Toxicity – Repeated Exposure (STOT-RE), Category 1 (H372)	1 %	0,1 %
Hazardous to the aquatic environment, Chronic Category 1 (H410)	2 %	0,25 %
Potential vPvB and PBT substances[6]	2 %	0,1 %
Candidate list, to be reported at component level[7]	0,1 % (component level)	0,01 % (component level)
Pure or compounds of lead (Pb)	0,1 %	0,01 %
Pure or compounds of mercury (Hg)	Contamination ≥ 2.5 mg/kg (ppm) and any active added mercury must always be reported.	
Pure or compounds of cadmium (Cd)	0,01 %	0,001 %
Substances covered by any of the above specified classifications, but which are also covered by specific concentration limits in accordance with CLP.	According to specific concentration limits if lower than specified above *(Applies to, for example, certain preservatives)*	10 times lower than specific concentration limit
Other classifications, and unclassified substances and material	2 %	2 %

References

[1]EU's EDS Database, Cat 1 & 2 http://ec.europa.eu/environment/chemicals/endocrine/strategy/being_en.htm
[2]Chemsec's SIN Lista, EDC Substances https://sinlist.chemsec.org/search/search?query=&healthenvironmentconcerns=1
[3]Candidate List, endocrine disrupting substances https://echa.europa.eu/sv/candidate-list-table

[4] Substances that meet the criteria for PBT/vPvB in accordance with KEMI, PRIO https://www.kemi.se/prio-start/criteria/the-criteria-in-detail/pbtvpvb
[5] Candidate List, PBT/vPvB substances https://echa.europa.eu/candidate-list-table

[6] Substances that meet the criteria for potential PBT/vPvB substances in accordance with KEMI, PRIO https://www.kemi.se/prio-start/criteria/the-criteria-in-detail/potential-pbtvpvb

[7]Substances on the Candidate List, https://echa.europa.eu/candidate-list-table. For composite products, substances on the Candidate List are required by law to be reported at component level. Information about this can be found on ECHA's website https://echa.europa.eu/regulations/reach/candidate-list-substances-in-articles .

(If the above links do not work, it may be because they have been updated, which is beyond Byggvarubedömningen's control. Updates of non-functioning links will be corrected as soon as possible after they have been discovered.)

Table 2. Specifically indicated substances may not have been added to the product during production or formed through reactions between the substances in the product to qualify for Recommended assessment level.

Substance group/Substance
Arsenic and its compounds[1]
Brominated flame retardants
Perfluorooctanoic acid (PFOA)
Perfluorooctanesulfonates (PFOS)
Organotin compounds
Biocidal product applied on products (surface treatments) to provide a disinfectant or anti-bacterial effect.

[1] Arsenic, or arsenic compounds, are not permitted to be added to the product. Contamination of used raw materials is not permitted to exceed 10 mg/kg. The concentration limit is set based on regulatory requirements for soil quality to ensure that products assessed as Recommended do not raise background concentrations through their use or disposal (for example; sludge from sewage treatment works Swedish Ordinance 1998:944, Section 20). The same concentration limits are found in the Swedish Environmental Protection Agency's general guidelines for sensitive land use https://www.naturvardsverket.se/Stod-i-miljoarbetet/Vagledningar/Fororenade-omraden/Riktvarden-for-fororenad-mark/ .

What may be included in the same assessment?

Generally, an assessment is done for a single item or chemical product. However, an assessment can also be done for a product series given that the included articles are covered by the same declaration of contents. Contents are then provided in intervals, and the assessment is done based on the concentration that gives the strictest assessment. Unclassified substances and material that contribute <2 % and that differ between the products in a series can be subject to the same supporting documentation and assessment. Consequently, intervals specified as 0 – ≥2 % are generally not accepted for a product series (well-founded exemptions can be accepted following control questions from an assessor). For chemical products, all articles included in the assessment are covered by the same safety data sheet.

For two or multi-component products, each component requires its own assessment and separate assessment documentation. According to current legislation, each component is to be reported in two separate safety data sheets. Exemptions may be made if the products are packaged in such a way that they cannot be separated. If so, information for both components can be provided in the same safety data sheet if it can be clearly determined which information applies to which component. Criteria that address issues where the components are hardened are assessed based on the hardened product's characteristics (for example, leaching, waste and emissions). For multi-component products, it should be clearly evident in the product description with which other products the individual components are intended to be used.

Descriptions of material

Constituent substances are to be reported with their CAS number and/or EC number. Exemptions can be made for certain materials in accordance with the following instructions.

Alloys are to be reported with the alloy number. Alternatively, constituent substances over 0,01 % of the alloy are to be reported. For unspecified alloys, the following exemptions are made (which may affect the assessment result):

- Stainless steel, the assessment is based on the alloy containing 10 % nickel.
- Brass, the assessment is based on the alloy containing 3 % lead.
- Aluminium, the assessment is based on the alloy containing 1,5 % lead.

Plastics and rubber materials are to be reported together with their name so that it is clear which monomers are included, for example, acrylonitrile butadiene styrene (ABS), polyethylene (PE), etc. Any residual monomers need not be reported.

Examples of plastics/polymers that are accepted without specification of constituent monomers:

- Polycarbonate (pertains to bisphenol A based polycarbonates)
- Polyester (monomers must be specified for halogenated polyesters)
- Polyurethane (monomers must be specified for halogenated polyurethanes)
- Fibreglass reinforced epoxy resin laminates FR4 (pertains to tetrabromobisphenol A based polymers)
- MS polymers (refers to silane-modified polyether)

Examples of plastics, polymers and rubber material that require clarification:

- Polymer dispersion
- Copolymer
- Thermoplastic elastomers (TPE)
- Thermoplastics
- Silanes. The type of polymer must be specified, for example, whether it refers to a silane/silyl-modified polyether or polyurethane.
- PVC. For concentrations ≥2 %, plasticizers must always be reported with the CAS number and concentration. Less than 2 %, plasticizers subject to the reporting limits specified in Table 1 are to be reported. If no plasticizer is specified, the assessor will check with the supplier regarding the occurrence of plasticizer classified as endocrine disrupting and other classification requirements.
- EPDM and SBR rubber. For concentrations ≥2 %, mineral/paraffin oil must always be specified with the CAS number and concentration. Alternatively, the PAH content can be specified.

- For plastics and rubber material that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity under normal or reasonably foreseeable conditions of use, the concentration limit is to be fulfilled in accordance with the PAH Regulation (European Commission's Regulation (EU) No. 1272/2013 to amend Annex XVII of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No. 1907/2006 (REACH) on the restrictions of polycyclic-aromatic hydrocarbons (https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013R1272&from=).
- Expanded polystyrene (EPS), cellular plastic, is assumed to always contain 2% pentane unless otherwise specified. If pentane content <1% of the constituent EPS is reported, this must be verified with analysis data.

Additives that have not formed polymers must always be reported in accordance with the reporting limits in Table 1 (for example, this applies for pigments, plasticizers, stabilizers, etc.).

Examples of other materials that may require clarification:

- Glass (content of lead must be reported for the Recommended assessment level; relevant for recycled glass)
- Concrete (elements of any polymers are to be reported separately)
- Mineral fillers, pigments, etc.
- The PAH content must be reported when asphalt/bitumen is reported ≥10% for the possibility of reaching the Recommended assessment level.
- Electronic products are assumed to always contain brominated flame retardants and therefore cannot reach the Recommended assessment level.
- Flame retardants and any plasticizers are to be specified for cables.

References can be given for composite products to other products (subcomponents) that have been assessed in Byggvarubedömningen's system and which have been provided with a BVBID. The referenced assessment must be current and not covered by a non-disclosure agreement (NDA). Non-public information may be used after confirmation from the concerned producer.