

**5 February 2018**

## **Background document for 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)**

### **Document developed in the context of ECHA's eighth recommendation for the inclusion of substances in Annex XIV**

*ECHA is required to regularly prioritise the substances from the Candidate List and to submit to the European Commission recommendations of substances that should be subject to authorisation. This document provides background information on the prioritisation of the substance, as well as on the determination of its draft entry in the Authorisation List (Annex XIV of the REACH Regulation). Information comprising confidential comments submitted during public consultation, or relating to content of registration dossiers which is of such nature that it may potentially harm the commercial interest of companies if it was disclosed, is provided in a confidential annex to this document.*

Information relevant for prioritisation and/or for proposing Annex XIV entries provided during the public consultation on the inclusion of 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) on the Authorisation List or in the registration dossiers (as of the last day of the public consultation, i.e. 2 June 2017) was taken into consideration when finalising the recommendation and is reflected in the present document. For 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) no comments were received in the public consultation.

The background document also describes how ECHA has taken into account the MSC opinion.

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## 1. Identity of the substance

Chemical name:	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)
EC Number:	247-384-8
CAS Number:	25973-55-1
IUPAC Name:	2-(2H-benzotriazol-2-yl)-4,6-bis(2-methylbutan-2-yl)phenol

## 2. Background information for prioritisation

Priority was assessed by using the General approach for prioritisation of SVHCs for inclusion in the list of substances subject to authorisation<sup>1</sup>. Results of the prioritisation of all substances included in the Candidate List by December 2015 and not yet included or recommended in Annex XIV of the REACH Regulation is available at

[https://echa.europa.eu/documents/10162/13640/prioritisation\\_results\\_CL\\_substances\\_march\\_2017\\_en.pdf](https://echa.europa.eu/documents/10162/13640/prioritisation_results_CL_substances_march_2017_en.pdf).

The prioritisation results of the substances included in the draft 8th recommendation have been updated as necessary after the public consultation. The updated results are available at [https://echa.europa.eu/documents/10162/13640/prioritisation\\_results\\_draft8threc\\_substances\\_february2018\\_en.pdf](https://echa.europa.eu/documents/10162/13640/prioritisation_results_draft8threc_substances_february2018_en.pdf).

### 2.1. Intrinsic properties

2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) was identified as a Substance of Very High Concern (SVHC) according to Article 57(d) and (e) as it meets the criteria of a PBT and vPvB substance and was therefore included in the Candidate List for authorisation on 17 December 2014, following ECHA's decision ED/108/2014.

### 2.2. Volume used in the scope of authorisation

The amount of 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) manufactured and/or imported into the EU is according to registration data in the range of 100 - <1,000 t/y. All tonnage appears to be in the scope of authorisation.

Therefore, in conclusion, the volume in the scope of authorisation is estimated to be in the range of 100 - <1,000 t/y.

### 2.3. Wide-dispersiveness of uses

Registered uses of 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) in the scope of authorisation include uses at industrial sites (e.g. formulation and use of preparations containing additives, formulation and use of masterbatches and compounds in the manufacture of plastics products, formulation and use of adhesives and sealants), uses by professional workers (e.g. use of additive resulting in inclusion into a matrix, including application in coatings, adhesives and plastics, use of polyurethane, use of adhesives or sealants) and uses by consumers (e.g. use of additive resulting in inclusion into a matrix, including application in coatings, adhesives and printing inks, use of polyurethane, use of adhesives or sealants).

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<sup>1</sup> Document can be accessed at

[http://echa.europa.eu/documents/10162/13640/gen\\_approach\\_svhc\\_prior\\_in\\_recommendations\\_en.pdf](http://echa.europa.eu/documents/10162/13640/gen_approach_svhc_prior_in_recommendations_en.pdf)

Furthermore, based on information from registrations and substance in article notifications the substance is used in articles (e.g. plastic articles).

More detailed information on uses is provided in Annex I.

## 2.4. Further considerations for priority setting

UV-328 is considered together with UV-320, UV-327 and UV-350 as a group. Due to structural similarities and similar physico-chemical properties it appears that the four phenolic benzotriazoles can be used as UV stabilisers in similar types of applications (e.g. in plastic articles or coatings) (Annex XV report, 2014) indicating the potential to substitute each other in (some of) their uses. UV-328 and UV-327 get high priority for inclusion in Annex XIV, therefore the whole group of phenolic benzotriazoles is prioritised.

## 2.5. Conclusion

Verbal descriptions and scores			Total score (= IP + V + WDU)	Further considerations
Inherent properties (IP)	Volume (V)	Wide dispersiveness of uses (WDU)		
UV-328 meets the criteria of Article 57 (d) and (e)  Score: 15	UV-328 used in the scope of authorisation is in the range of 100 - <1,000 t/y.  Score: 9	UV-328 is used at industrial sites and by professional workers and consumers.  Furthermore, the substance is used in articles.  Score: 15	39	Grouping with other phenolic benzotriazoles (UV-320, UV-327, UV-350).

### Conclusion

On the basis of the prioritisation criteria further strengthened by grouping considerations 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) receives priority among the substances in the Candidate List (see link to the prioritisation results above). Therefore, **2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) is recommended for inclusion in Annex XIV.**

## 3. Background information for the proposed Annex XIV entry

*Draft Annex XIV entries were determined on the basis of the General approach for preparation of draft Annex XIV entries for substances to be included in Annex XIV<sup>2</sup> and as further specified in the practical implementation document<sup>3</sup>. The draft Annex XIV entries for all the substances that underwent public consultation are available at*

[https://echa.europa.eu/documents/10162/13640/8th\\_recom\\_draft\\_axiv\\_entries\\_en.pdf](https://echa.europa.eu/documents/10162/13640/8th_recom_draft_axiv_entries_en.pdf).

<sup>2</sup> General approach can be accessed at

[http://echa.europa.eu/documents/10162/13640/recom\\_general\\_approach\\_draft\\_axiv\\_entries.pdf](http://echa.europa.eu/documents/10162/13640/recom_general_approach_draft_axiv_entries.pdf)

<sup>3</sup> Practical implementation document can be accessed at

[https://www.echa.europa.eu/documents/10162/13640/recom\\_general\\_approach\\_draft\\_axiv\\_entries\\_draft\\_implementation\\_en.pdf](https://www.echa.europa.eu/documents/10162/13640/recom_general_approach_draft_axiv_entries_draft_implementation_en.pdf)

The final draft Annex XIV entries that ECHA recommends are available at [https://echa.europa.eu/documents/10162/13640/8th\\_axiv\\_recommendation\\_february2018\\_en.pdf](https://echa.europa.eu/documents/10162/13640/8th_axiv_recommendation_february2018_en.pdf).

### 3.1. Latest application and sunset dates

ECHA proposes to recommend the following transitional arrangements:

Latest application date (LAD):	Date of inclusion in Annex XIV plus <b>21 months</b>
Sunset date:	18 months after LAD

The LAD slots are set in 3 months intervals (normally 18, 21 and 24 months after inclusion in Annex XIV).

Allocation of (group of) substances to LAD slots aims at an even workload for all parties during the opinion forming and decision making on the authorisation applications. All substances can therefore not be set at the same LAD. ECHA proposes to allocate those substances to the "later" LAD slots (21 months or more) for which the available information indicates a relatively higher complexity of supply chain.

Applying the criteria described in the implementation document<sup>3</sup> the time required for the preparation of application(s) for authorisation for the group of phenolic benzotriazoles (UV-320, UV-327, UV-328 and UV-350) is assumed to be relatively shorter than for other substances prioritised for this recommendation (NMP, phthalate). For the karanal group<sup>4</sup>, in comparison, the complexity of the supply chain seems to be lower.

Therefore 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) is assigned to the 2nd slot (LAD 21 months after inclusion in Annex XIV).

More detailed information is provided in Annex I.

### 3.2. Review period for certain uses

In its draft recommendation ECHA had seen no ground to include in Annex XIV any review period for 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328).

During the public consultation ECHA did not receive comments requesting upfront review period for certain uses.

ECHA therefore **does not recommend to include in Annex XIV any review periods** for uses of 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328).

<sup>4</sup> 5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual stereoisomers of [1] and [2] or any combination thereof]

### 3.3. Uses or categories of uses exempted from authorisation requirement

#### 3.3.1 Exemption under Article 58(2)

In its draft recommendation ECHA had not proposed any exemptions for (categories of) uses of 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) on the basis of Article 58(1)(e) in combination with Article 58(2) of the REACH Regulation.

During the public consultation ECHA did not receive any requests for exemptions for the substance.

ECHA therefore **does not recommend exemptions** for uses of 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) on the basis of Article 58 (1)(e) in combination with Article 58(2) of the REACH Regulation.

#### 3.3.2 Exemption of product and process oriented research and development (PPORD)

In its draft recommendation ECHA had not proposed to include in Annex XIV any exemption from authorisation for the use of 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) for PPORD.

During the public consultation ECHA did not receive any requests for exemptions from the authorisation requirement for PPORD for the substance.

ECHA therefore **does not recommend exempting any use of 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) for PPORD** from authorisation.

## 4. References

Annex XV report (2014): Proposal for identification of a substance as a CMR Cat 1A or 1B, PBT, vPvB or a substance of an equivalent level of concern. 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328). Submitted by Germany, August 2014.

<https://www.echa.europa.eu/documents/10162/6815509e-96e5-44c0-a46f-3ac1b16b1cf0>

ECHA (2017): 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328). ECHA's dissemination website on registered substances. Accessed on 2 June 2017.

<https://echa.europa.eu/search-for-chemicals>

## **ANNEX I: Further information on uses**

### **1. Main (sector of) uses and relative share of the total tonnage**

There is no further information available.

### **2. Further details on the type of applications, functions and market trend per use**

UV-328 as well as other substances belonging to the chemical group of phenolic benzotriazoles (UV-320, UV-327, UV-350) are generally used as UV-stabilisers since they can absorb the full spectrum of UV light. It seems that this substance class is used as UV protection agent in plastics, rubber, resins and cosmetics as well as in coatings for e.g. cars, wood and textiles. The different phenolic benzotriazoles have different substitution pattern in ortho- and para-position to the hydroxyl group of the phenolic ring. This difference has effects on the solubility and the distinct coloration in different transparent plastic materials (Annex XV report, 2014).

According to substance in article notifications UV-328 is used in labels for electrical, electronic and mechanical equipment, protective films, reflective signs as well as safety glass sheets and windshields.

According to the Substances in Products in Nordic Countries database (SPIN)<sup>5</sup> there was a sharp increase of reported tonnage up to 244 tonnes in 2015 (almost exclusively in Sweden) as compared to >5 tonnes for the previous years, while the number of reported preparations increased from 236 (in 2014) to 266 (including to some extent products for consumer use). Most of the tonnage is used in paints and varnishes.

### **3. Structure and complexity of supply chains**

Based on registration information (ECHA, 2017) the following can be assumed:

The substance is manufactured and/or imported by a limited number of registrants. The substance is used in formulation, at industrial sites, by professional workers, by consumers and in the production of articles (multi-layers assembling chain) that may be used by consumers and workers. There is no information available on the number of industrial sites.

UV-328 is used for the following product categories: adhesives, sealants, coatings, paints, thinners, paint removers and polymer preparations and compounds (PC1, PC9a and PC32).

A number of sectors is relying on the substance in some of their uses including textile, wood, paper, rubber and plastic manufacturers as well as manufacturers of non-metallic mineral products, electric/electronic equipment, general manufacturers and the building and construction sector (SU5, SU6a, SU6b, SU11, SU12, SU13, SU16, SU17 and SU19)

The substance ends up in a number of article types such as vehicles, machinery, electrical/electronic articles, textiles as well as glass, metal, paper, rubber, wood and plastic articles (AC1, AC2, AC4, AC5, AC7, AC8, AC10, AC11 and AC13).

Several categories mentioned are not explicitly reported in registrations but could be derived from use descriptions in registration dossiers and information from substance in article notifications and the Annex XV report.

No additional specific information on the structure or complexity of supply chain is available.

<sup>5</sup> SPIN database can be found at <http://spin2000.net>