EUROPEAN CHEMICALS AGENCY

Helsinki, 23 March 2017

Addressee: [redacted]

Decision number: CCH-D-2114355486-41-01/F
Substance name: 1,3-dihydro-4(or 5)-methyl-2H-benzimidazole-2-thione, zinc salt
EC number: 262-872-0
CAS number: 61617-00-3
Registration number: [redacted]
Submission number: [redacted]
Submission date: 29.09.2015
Registered tonnage band: 100-1000T

DECISION ON A COMPLIANCE CHECK

Based on Article 41 of Regulation (EC) No 1907/2006 (the 'REACH Regulation'), ECHA requests you to submit information on

1. **Name(s) in the IUPAC nomenclature or other international chemical name(s) (Annex VI, Section 2.1.1.) of the registered substance;**
   - **Consistency of IUPAC name, EC and/or CAS entry**

2. **High-pressure liquid chromatogram, gas chromatogram (Annex VI, Section 2.3.6) on the registered substance;**
   - **Complete chromatogram**

3. **Description of the analytical methods (Annex VI, Section 2.3.7) for the registered substance;**
   - **Identification and quantification of the counter-ion**

4. **In vitro gene mutation study in mammalian cells (Annex VIII, Section 8.4.3.; test method: OECD TG 476 or TG 490) with the registered substance;**

5. **Long-term toxicity testing on aquatic invertebrates (Annex IX, Section 9.1.5.; test method: Daphnia magna reproduction test, EU C.20./OECD TG 211) with the registered substance;**

6. **Simulation testing on ultimate degradation in surface water (Annex IX, Section 9.2.1.2.; test method: Aerobic mineralisation in surface water – simulation biodegradation test, EU C.25./OECD TG 309) at a temperature of 12 °C with the registered substance;**

7. **Identification of degradation products (Annex IX, 9.2.3.) using an appropriate test method;**

8. **Bioaccumulation in aquatic species (Annex IX, Section 9.3.2.; test method: Bioaccumulation in fish: aqueous and dietary exposure, OECD TG 305, aqueous exposure) with the registered substance;**

You may adapt the testing requested above according to the specific rules outlined in Annexes VI to X and/or according to the general rules contained in Annex XI of the REACH Regulation. In order to ensure compliance with the respective information requirement, any such adaptation will need to have a scientific justification, referring and conforming to the appropriate rules in the respective Annex, and an adequate and reliable documentation.

You are required to submit the requested information in an updated registration dossier by **1 October 2018**. You shall also update the chemical safety report, where relevant.

The reasons of this decision are set out in Appendix 1. The procedural history is described in Appendix 2. Advice and further observations are provided in Appendix 3.

Appeal

This decision can be appealed to the Board of Appeal of ECHA within three months of its notification. An appeal, together with the grounds thereof, shall be submitted to ECHA in writing. An appeal has suspensive effect and is subject to a fee. Further details are described under http://echa.europa.eu/regulations/appeals.

Authorised[1] by Ofelia Bercaru, Head of Unit, Evaluation E3

[1] As this is an electronic document, it is not physically signed. This communication has been approved according to ECHA's internal decision-approval process.

Appendix 1: Reasons

In the registration, you have adapted several standard information requirements subject to the current decision using read-across and qualitative or quantitative structure-activity relationship ((Q)SAR) models. The proposed read-across for the standard information requirements of *In vitro* gene mutation study in mammalian cells (REACH Annex VIII, Section 8.4.3.), Long-term toxicity testing on aquatic invertebrates (REACH Annex IX, Section 9.1.5.) and Bioaccumulation in aquatic species (REACH Annex IX, Section 9.3.2.) is discussed in section A.1 of this appendix. The QSAR data presented for the standard information requirements of Long-term toxicity testing on aquatic invertebrates and Bioaccumulation in aquatic species is discussed in section A.2 of this appendix. Sections B.4, B.5 and B.8 of the appendix analyse the need for further data to meet the respective information requirements.

A. Preliminary considerations

Article 13(1) of the REACH Regulation provides that information on intrinsic properties of substances may be generated by means other than tests. Such other means include the use of information from structurally related substances (grouping of substances and read-across), "provided that the conditions set out in Annex XI are met".

1. Grouping of substances and read-across approach

In the registration, you have adapted the standard information requirements for

- *In vitro* gene mutation study in mammalian cells (Annex VIII, Section 8.4.3.)
- Long-term toxicity testing on aquatic invertebrates (Annex IX, Section 9.1.5.)
- Bioaccumulation in aquatic species (Annex IX, Section 9.3.2.)

with data on the analogue substance 1,3-dihydro-4(or 5)-methyl-2H-benzimidazole-2-thione (EC no 258-904-8; MB2) hereafter referred to as the 'source substance' by applying a read-across adaptation following REACH Annex XI, Section 1.5.

You have provided the following studies on the source substance in the technical dossier of the registered substance:

- *In vitro* gene mutation study in mammalian cells (Annex VIII, Section 8.4.3.): A gene mutation assay in Chinese hamster V79 cells in vitro according to OECD TG 476.

- Long-term toxicity testing on aquatic invertebrates (Annex IX, Section 9.1.5.): A Daphnia magna reproduction test according to EU Method C.20/OECD TG 211 and (Q)SAR prediction using the ECOSAR Class (Thioureas) method (ECOSAR, 2013).

- Bioaccumulation in aquatic species (Annex IX, Section 9.3.2.): (Q)SAR prediction using EPI Suite.

Annex XI, Section 1.5. requires a structural similarity among the substances within a group or category such that relevant properties of a substance within the group can be predicted from the data on reference substance(s) within the group by interpolation. The following analysis presents your justification for the proposed grouping approach and read-across hypothesis, together with ECHA's analysis concerning the justification in both a generic and an property-specific context.

You have provided a read-across justification within the CSR and in the relevant IUCLID endpoint sections in the registration. In summary you provide the following arguments to support the read-across from the source substance MB2 to the registered substance ZMB2, also referred to in this decision as the 'target substance':

- *In vitro* gene mutation study in mammalian cells (CSR p. 48 and IUCLID section 7.6): "*This risk assessment/dossier contains a combined approach for addressing the required endpoints. The required endpoints are addressed using, when available, data on the substance to be registered, 1,3-dihydro-4(or 5) -methyl-2H-benzimidazole-2-thione, zinc salt (CAS 61617-00-3) (ZMB2). When these data are not available, data from a close structural analog, 1,3-dihydro-4(or 5) -methyl-2H-benzimidazole-2-thione (MB2) (CAS number 53988-10-6) is used to address the required endpoints. MB2 is structurally similar to ZMB2, with a smiles code of c1([nH]c2c([nH]1) cccc2C) =S compared to that of c1ccc2[nH]c([nH]c2c1) =S. C*. [Zn] for ZMB2. The zinc salt present in ZMB2 is not expected to cause any significant differences in the toxicological effects compared to MB2.*"

- Bioaccumulation (IUCLID section 5.3): "*Data from the close structural analog, MB2 (CAS number 53988-10-6) are used to address the endpoint*". No further justification was provided in the registration dossier for this specific endpoint.

- Long-term toxicity testing on aquatic invertebrates (CSR p. 71, and IUCLID section 6.1.4: "*Data from the close structural analog, MB2 (CAS number 53988-10-6) are used to address the endpoint. The zinc salt present in ZMB2 is not expected to cause any significant differences in the ecotoxicological effects compared to MB2. This is based upon the dissociation constant results which indicate that ZMB2 does remain as a single molecule, with the zinc salt not dissociating at least to some degree within the environmental compartment ([redacted], 2013)*" and, "*Based on analysis of the structural similarities between MB2 and ZMB2, ZMB2 is likely to have a chronic toxcity to aquatic invertebrates result similar to MB2*".

ECHA has evaluated the information and documentation provided in the registration dossier in light of the requirements of Annex XI, Section 1.5 of the REACH Regulation and has the following observations:

According to the provisions of Annex XI, section 1.5 of the REACH Regulation, application of the grouping and read-across concept requires that the properties of a substance may be predicted from data on another structurally similar substance. A read-across hypothesis establishing a basis for this prediction, and developed on the basis of structural similarity, is a fundamental aspect of a read-across approach.

Based on the information provided in your dossier, ECHA understands that you intend to adapt the above mentioned information requirements of the registered substance by read-across from "*close structural analog, MB2 (CAS number 53988-10-6)*". This read-across approach is based on the structural similarity between the source (MB2) and target (ZMB2) substances and on the dissociation of the target substance in the source substance in water and zinc ions. You indicated in your justification of this read-across that the target substance is a "*close structural analogue*" of the source substance. ECHA stresses that structural similarity, is not in itself a sufficient basis to predict properties of a substance. Structural similarity is a prerequisite for applying the grouping and read-across approach, but ECHA does not accept in general or this specific case that structural similarity per se is sufficient to enable the prediction of human health or environmental properties of a substance, since structural similarity does not always lead to predictable or similar human health effects, environmental effects or environmental fate.

Furthermore, ECHA observes that your read-across hypothesis relies on the assumption that the target substance dissociates in water to the same anion as the one formed from the dissociation of the source substance. However, no qualitative or quantitative information characterising the dissociation of the target substance ZMB2 has been provided in the technical dossier to support this assumption. The possibility that ZMB2 remains as a stable molecule in aqueous solution cannot be dismissed and is suggested by information included in the registration dossier of the substance subject to this decision: under the endpoint Dissociation constant you report that "*ZMB2 does remain as a single molecule, at least to some degree*". This aspect appears to interfere with your read-across hypothesis and has not been accounted for in your read-across approach.

In the absence of information on the rate and extent of the dissociation of the target substance ZMB2, ECHA considers that you have not established that the properties of the target substance ZMB2 can be predicted from data on the source substance MB2.

Conclusion:
For the reasons outlined above, ECHA does not consider the read-across approach as proposed in the dossier to be a reliable basis to predict the relevant properties of the registered substance by interpolation. As the proposed read-across approach does not comply with the general rules of adaptation as set out in Annex XI, Section 1.5, it cannot be approved to adapt standard information requirements for *In vitro* gene mutation study in mammalian cells (REACH Annex VIII, Section 8.4.3.), Long-term toxicity testing on aquatic invertebrates (REACH Annex IX, Section 9.1.5.) and Bioaccumulation in aquatic species (REACH Annex IX, Section 9.3.2.)

2. Use of Qualitative or Quantitative structure-activity relationship ((Q)SAR) models

In the registration, you have adapted the standard information requirements for

- Long-term toxicity testing on aquatic invertebrates (Annex IX, Section 9.1.5.)
- Bioaccumulation in aquatic species (Annex IX, Section 9.3.2.)

By applying a (Q)SAR models following REACH Annex XI, Section 1.5. (Q)SARs, are theoretical models that can be used to predict in a qualitative or quantitative manner the physico-chemical, biological (e.g. toxicological and ecotoxicological) and environmental fate properties of compounds from the knowledge of their chemical structure.

The quality and reliability of the (Q)SAR models can be assessed in the light of the criteria established in Section 1.3. of Annex XI to the REACH Regulation:
- results are derived from a (Q)SAR model whose scientific validity has been established,
- the substance falls within the applicability domain of the (Q)SAR model,
- results are adequate for the purpose of classification and labelling and/or risk assessment, and
- adequate and reliable documentation of the applied method is provided.

You have proposed the following (Q)SAR approaches in the technical dossier of the registered substance:

- Long-term toxicity testing on aquatic invertebrates (Annex IX, Section 9.1.5.): (Q)SAR prediction using the ECOSAR Class (Thioureas) method (ECOSAR, 2013) on the registered substance and an analogue substance "1,3-dihydro-5-methyl-2H-benzimidazole-2-thione". In IUCLID section 6.1.4. you stated that "*the QSAR program is validated for the substance type (organosulphur)*"; and

- Bioaccumulation in aquatic species (Annex IX, Section 9.3.2.): (Q)SAR prediction using EPI Suite on the registered substance and an analogue substance "1,3-dihydro-5-methyl-2H-benzimidazole-2-thione".

However, ECHA notes that your adaptation does not meet the general rule for adaptation of Annex XI; Section 1.3. because of the following reasons:

Regarding the (Q)SAR prediction using ECOSAR, you stated that the QSAR program is validated for the substance type (organosulphur). This does not apply for the registered substance. The registered substance is not within the applicability domain of neither the ECOSAR nor the EPISUITE model used, and several fragments of the compound are not found within the models' training set. Additionally, the ECOSAR disclaimer clearly states that "chemicals that should not be profiled in ECOSAR include organometallic chemicals". Therefore, these results cannot be considered reliable and cannot be used.

ECHA considers that the (Q)SAR predictions on the analogue substance "1,3-dihydro-5-methyl-2H-benzimidazole-2-thione cannot be accepted as the read-across approach is rejected, for the reasons outlined under Appendix 1, section A.1. above.

Conclusion:
For the reasons outlined above, ECHA is of the opinion that you have not provided an adequate basis for predicting the properties of the registered substance using (Q)SAR approaches as required by the provisions of Annex XI, section 1.3 of the REACH Regulation. As a consequence, the adaptation of the information requirements based on the (Q)SAR approaches cannot be accepted.

B. Endpoint-specific considerations

1. Name or other identifier of the substance (Annex VI, Section 2.1.)

Pursuant to Article 10(a)(ii) of the REACH Regulation, the technical dossier shall contain information on the identity of the substance as specified in Annex VI, Section 2 of the REACH Regulation. In accordance with Annex VI, Section 2 the information provided shall be sufficient to enable the identification of the registered substance.

The name and other identifiers are used to identify the substance in an unambiguous manner and are therefore fundamental for substance identification. Adequate information needs to be present in the registration dossier to meet this information requirement.

The EC number 262-872-0, EC name "1,3-dihydro-4(or 5)-methyl-2H-benzimidazole-2-thione, zinc salt" and CAS number 61617-00-3 provided in section 1.1 refer to substance where the organic part of the substance consists of [redacted].

The IUPAC name "zinc 4-methyl-2-thioxo-2,3-dihydrobenzimidazol-1-ide 7-methyl-2-thioxo-2,3-dihydrobenzimidazol-1-ide" provided in section 1.1 refers to a substance where the organic part of the substance consists of [redacted].

The IUPAC name is not consistent with the EC number, EC name and CAS number provided in section 1.1.

Therefore, please revise the identifiers reported in section 1.1 and ensure that the identifiers are consistent with each other and with the information provided in other sections of the IUCLID dossier.

Regarding how to report the identifiers of the substance, the information shall be included in the reference substance assigned in IUCLID section 1.1.

In your comments on the draft decision you indicated a willingness to provide the requested information.

2. High-pressure liquid chromatogram, gas chromatogram (Annex VI, Section 2.3.6.)

Pursuant to Article 10(a)(ii) of the REACH Regulation, the technical dossier shall contain information on the identity of the substance as specified in Annex VI, Section 2 of the REACH Regulation. In accordance with Annex VI, Section 2 the information provided shall be sufficient to enable the identification of the registered substance.

"High-pressure liquid chromatogram, gas chromatogram" is an information requirement as laid down in Annex VI, Section 2.3.6. of the REACH Regulation. Adequate information needs to be present in the registration dossier to meet this information requirement.

The composition reported in section 1.2 indicates that the registered substance consists of two main constituents, [redacted]. However, information on how these constituents have been quantified has not been included in section 1.4. In particular, you have not provided a chromatogram in the registration dossier.
Therefore, the information provided is not sufficient to support the quantification of the constituents required to be reported in the IUCLID dossier.

ECHA notes that you have provided a ^{1}HNMR spectrum in section 1.4 of the IUCLID dossier (document [redacted]) that may have been used for the quantification of the registered substance. ECHA notes that from the described analysis and interpretation of the results it is not possible to establish the concentration levels of the constituents required to be reported in the dossier.
You are accordingly requested to provide a description of the analytical methods used for the identification and quantification of the constituents required to be reported in the composition of the registered substance.

The description shall be sufficient for the methods to be reproduced and shall therefore include details of the experimental protocol followed, any calculation made, and the results obtained.

You shall derive the composition on the basis of the most appropriate method that shall be chosen taking into account experience and knowledge of the robustness of the method used. For this purpose, you should submit an appropriate chromatographic analysis including the chromatogram and a peak table containing the retention times, peak areas and peak area % of the constituents. If other analytical methods such as quantitative NMR are more suitable for quantification of the constituents required to be reported in section 1.2, such methods may also be used.

When reporting the composition of registered substance you shall take into account the uncertainty of the results obtained. You shall ensure that the concentration levels of the constituents present in the substance are not underestimated.

As for the reporting of the data in the registration dossier, the information should be included in section 1.4 of the IUCLID dossier.

In your comments on the draft decision you indicated a willingness to provide the requested information.

3. Description of the analytical methods (Annex VI, Section 2.3.7.)

Pursuant to Article 10(a)(ii) of the REACH Regulation, the technical dossier shall contain information on the identity of the substance as specified in Annex VI, Section 2 of the REACH Regulation. In accordance with Annex VI, Section 2 the information provided shall be sufficient to enable the identification of the registered substance.

Annex VI, section 2.3.7 of the REACH Regulation requires that each registration dossier contains a sufficiently detailed description of the analytical method used for establishing the composition of the registered substance and therefore its identity. This information shall be sufficient to allow the method to be reproduced.

You have identified your substance with EC name "1,3-dihydro-4(or 5)-methyl-2H-benzimidazole-2-thione, zinc salt", which indicates that zinc is present as a counter-ion in your substance and must be identified and quantified. You have provided a titration analysis for the quantification of the zinc counter-ion in section 1.4 (document "[redacted]"). However you have not provided a description of the analytical methods to identify the zinc counter-ion.

Therefore, your dossier does not have sufficient information to establish the composition of the registered substance and therefore its identity.

Accordingly, you are required to provide the description of the analytical method for the identififcation of the zinc counter-ion. Examples of suitable methods include spectral methods such as Atomic Adsorption Spectroscopy and Optical Emission Spectroscopy.

The description shall be sufficient for the methods to be reproduced and shall therefore include details of the experimental protocol followed, any calculation made and the results obtained.

As for the reporting of the data in the registration dossier, the information should be included in section 1.4 of the IUCLID dossier.

In your comments on the draft decision you indicated a willingness to provide the requested information.

4. In vitro gene mutation study in mammalian cells (Annex VIII, Section 8.4.3.)

Pursuant to Articles 10(a) and 12(1) of the REACH Regulation, a technical dossier registered at 100 to 1000 tonnes per year shall contain as a minimum the information specified in Annexes VII to IX of the REACH Regulation. The information to be generated for the dossier must fulfil the criteria in Article 13(4) of the same regulation.

An "*In vitro* gene mutation study in mammalian cells" is an information requirement as laid down in Annex VIII, Section 8.4.3. of the REACH Regulation, "if a negative result in Annex VII, Section 8.4.1. and Annex VIII, Section 8.4.2." is obtained.

ECHA notes that the registration dossier contains negative results for both these information requirements. Therefore, adequate information *on in vitro* gene mutation in mammalian cells needs to be present in the technical dossier for the registered substance to meet this information requirement.

You have sought to adapt this information requirement according to Annex XI, Section 1.5. of the REACH Regulation by providing a study record for a "Gene mutation assay in Chinese hamster V79 cells in vitro (V79/HPRT)" (OECD TG 476) with the analogue substance 1,3-Dihydro-4(or 5)-methyl-2H-benzimidazole-2-thione (EC no 258-904-8).

However, as explained above in Appendix 1, section A.1, of this decision, your adaptation of the information requirement is rejected.

As explained above, the information provided on this endpoint for the registered substance in the technical dossier does not meet the information requirement. Consequently, there is an information gap and it is necessary to provide information for this endpoint.

ECHA considers that the *in vitro* mammalian cell gene mutation tests using the *Hprt* and *xprt* genes (OECD TG 476) and the *in vitro* mammalian cell gene mutation tests using the thymidine kinase gene (OECD TG 490) are appropriate to address the standard information requirement of Annex VIII, Section 8.4.3.

In your comments on the draft decision you indicated a willingness to provide the requested information.

Therefore, pursuant to Article 41(1) and (3) of the REACH Regulation, you are requested to submit the following information derived with the registered substance subject to the present decision: *In vitro* mammalian cell gene mutation test (test method: OECD TG 476 *or* OECD TG 490).

5. Long-term toxicity testing on aquatic invertebrates (Annex IX, Section 9.1.5.)

Pursuant to Articles 10(a) and 12(1) of the REACH Regulation, a technical dossier registered at 100 to 1000 tonnes per year shall contain as a minimum the information specified in Annexes VII to IX of the REACH Regulation. The information to be generated for the dossier must fulfil the criteria in Article 13(4) of the same regulation.

"Long-term toxicity testing on aquatic invertebrates" is a standard information requirement as laid down in Annex IX, Section 9.1.5. of the REACH Regulation. Adequate information on this endpoint needs to be present in the technical dossier for the registered substance to meet this information requirement.

You have sought to adapt this information requirement according to Annex XI, Section 1.3. and Section 1.5. of the REACH Regulation by providing the following study records:

i. Key Study (read-across with the analogues substance "1,3-dihydro-4(or 5)-methyl-2H-benzimidazole-2-thione" (named "MB2", EC no 258-904-8)): "*MB2 was found to have a 21 day NOEC (reproduction) value of 0.0346 mg/L (measured) to Daphnia magna ([redacted], 2012).*"

ii. Weight of Evidence ((Q)SAR prediction on an analogue substance "1,3-dihydro-5-methyl-2H-benzimidazole-2-thione" (also named "MB2", EC no 248-350-5)): *"MB2 was estimated to have a Chronic Value (ChV) to Daphnia of 0.09 mg/l using the ECOSAR Class (Thioureas) method (ECOSAR, 2013)."*

iii. Weight of Evidence ((Q)SAR prediction on the registered substance): *"ZMB2 was estimated to have a Chronic Value (ChV) to Daphnia of 0.079 mg/l using the ECOSAR Class (Thioureas) method (ECOSAR, 2013)."*

However, ECHA notes that your adaptation does not meet the general rule for adaptation of Annex XI, Section 1.3. and Section 1.5., of the REACH Regulation because of the reasons outlined in Appendix 1, section A.1 and A.2 of this decision. Because of the deficiencies of the read across approach and the (Q)SAR data, ECHA does not consider the read across and (Q)SAR data as valid sources of information for a weight of evidence approach according to Annex XI, Section 1.2, of the REACH Regulation.

Therefore, your adaptation of the information requirement cannot be accepted.

In your comments on the draft decision you indicate an intention to modify the adaptation for this information requirement by stating that "*Based on the CSA, the identified uses are safe which according to Annex IX, column 2 does not necessitate to perform long-term toxicity testing on aquatic invertebrates. If a PNEC aqua (freshwater) is derived solely based on acute studies, a PNEC value of 1.4 µg/L results applying an assessment factor of 1000. This value is even slightly higher than the current value in the dossier of 1.38 µg/L which considers the long-term daphnia study with the source substance MB2. Accordingly, the registrant considers that waiving of this requested information requirement is fully in accordance with the REACH regulation*".

ECHA notes that the current CSA is not appropriate as the PNEC is derived using read across data which is rejected in the present decision. Consequently, any column 2 adaptation would have to be made on the basis of an updated CSA.

A PNEC derived using the short-term Daphnia EC50 and an assessment factor of 1000 seems appropriate, however the short term Daphnia EC50 value of 1.4mg/L has confidence limits of 1.1 – 1.6 mg/L which leads to some uncertainty as to the safe use, since a PNEC derived using the lower confidence limit and an assessment factor of 1000 would result in some RCRs greater than 1 on the basis of the current PEC values in the CSR. This should be carefully considered in the updated CSA before any column 2 adaptation is applied.

As explained above, the information provided on this endpoint for the registered substance in the technical dossier does not meet the information requirement. Consequently there is an information gap and it is necessary to provide information for this endpoint.

According to ECHA *Guidance on information requirements and chemical safety assessment, Chapter R.7b* (version 3.0, February 2016) *Daphnia magna* reproduction test (test method EU C.20. / OECD TG 211) is the preferred test to cover the standard information requirement of Annex IX, Section 9.1.5.

Therefore, pursuant to Article 41(1) and (3) of the REACH Regulation, you are requested to submit the following information derived with the registered substance subject to the present decision: Daphnia magna reproduction test (test method: EU C.20./OECD TG 211).

Notes for your consideration

According to ECHA *Guidance on information requirements and chemical safety assessment* (version 3.0, February 2016), Chapter R7b (Section R.7.8.5., including Figure R.7.8-4) if based on acute aquatic toxicity data neither fish nor invertebrates are shown to be substantially more sensitive, long-term studies may be required on both. In such case, according to the integrated testing strategy, the *Daphnia* study is to be conducted first.

6. Simulation testing on ultimate degradation in surface water (Annex IX, Section 9.2.1.2.)

Pursuant to Articles 10(a) and 12(1) of the REACH Regulation, a technical dossier registered at 100 to 1000 tonnes per year shall contain as a minimum the information specified in Annexes VII to IX of the REACH Regulation. The information to be generated for the dossier must fulfil the criteria in Article 13(4) of the same regulation.

"Simulation testing on ultimate degradation in water" is a standard information requirement as laid down in Annex IX, section 9.2.1.2. of the REACH Regulation. Column 2 of Section 9.2.1.2 of Annex IX further indicates that the study needs to be conducted if the chemical safety assessment (CSA) according to Annex I indicates the need to investigate further the degradation of the substance and its degradation products and that the choice of the appropriate test(s), which may include simulation degradation tests in appropriate media, depends of the results of the CSA. Column 2 indicates that the study does not need to be conducted if the substance is highly insoluble in water or if the substance is readily biodegradable. Adequate information on this endpoint needs to be present in the technical dossier for the registered substance to meet this information requirement.

You have sought to adapt this information requirement according to Annex IX, Section 9.2.1.2., column 2. You provided the following justification for the adaptation *"Based on the use pattern of ZMB2, intentional releases into the sediment compartment are not expected. In accordance with Column 2 of Annex IX of the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) legislation, if direct and indirect exposure of sediment is unlikely, a biodegradation in water and sediment study does not need to be conducted, therefore the endpoint is being waived. ZMB2 is not considered readily biodegradable ([redacted], 2003)".*

However, ECHA notes that your adaptation does not meet the specific rules for adaptation of Annex IX, Section 9.2.1.2., column 2 because the compartment of relevance to this information requirement is the aquatic compartment and not sediment; furthermore, xposure of the aquatic compartment cannot be excluded because the substance is not readily biodegradable, has a water solubility of 32 mg/L and is used in industrial, professional and consumer applications where environmental release is likely.

In response to a Member State Competent Authority (MSCAs) proposal for amendment (PfA), ECHA notes that further information on the degradation of the substance and its degradation products is needed for the PBT/vPvB assessment and for the identification of the degradation products in relation to the PBT/vPvB assessment. ECHA notes further that information on relating endpoints of bioaccumulation and aquatic toxicity are also requested in this decision. The PBT/vPvB status of the registered substance is hence unclear and with the current information gaps the chemical safety assessment (CSA) cannot be used to justify why there is no need to investigate further the degradation of the substance and its degradation products.

Therefore, your adaptation of the information requirement cannot be accepted.

As explained above, the information provided on this endpoint for the registered substance in the technical dossier does not meet the information requirements. Consequently there is an information gap and it is necessary to provide information for this endpoint.

According to ECHA *Guidance on information requirements and chemical safety assessment, Chapter R.7b* (version 3.0, February 2016) Aerobic mineralisation in surface water – simulation biodegradation (test method EU C.25. / OECD TG 309) is the preferred test to cover the standard information requirement of Annex IX, Section 9.2.1.2.

One of the purposes of the simulation test is to provide the information that must be considered for assessing the P/vP properties of the registered substance in accordance with Annex XIII of the REACH Regulation to decide whether it is persistent in the environment. Annex XIII also indicates that "*the information used for the purposes of assessment of the PBT/vPvB properties shall be based on data obtained under relevant conditions*". The Guidance on information requirements and chemical safety assessment R.7b (version 3.0, February 2016) specifies that simulation tests "attempt to simulate degradation in a specific environment by use of indigenous biomass, media, relevant solids [...], and a typical temperature that represents the particular environment". The Guidance on information requirements and chemical safety assessment Chapter R.16 on Environmental Exposure Estimation, Table R.16-8 (version 3.0 February 2016) indicates 12°C (285K) as the average environmental temperature for the EU to be used in the chemical safety assessment. Performing the test at the temperature of 12°C is within the applicable test conditions of the Test Guideline OECD TG 309. Therefore, the test should be performed at the temperature of 12°C.

In your comments on the draft decision you indicated a willingness to conduct this test.

In response to MSCAs PfA, ECHA clarifies the following. In the OECD TG 309 Guideline, two test options, the "pelagic test" and the "suspended sediment test", are described. ECHA considers that the "pelagic test" option, with a natural water sample, should be followed as that is the recommended option for P assessment. The amount of suspended solids in the pelagic test should be representative of the level of suspended solids in EU surface water. The concentration of suspended solids in the surface water sample used in the "pelagic test" should therefore be approximately 15 mg dw/L. Testing natural surface water containing between 10 and 20 mg SPM dw/L is considered acceptable.

In your comments on MSCAs PfA, you indicated that the study should be performed under environmentally relevant conditions, and that concern over NER formation would not compromise the interpretation of results. Concerning NER formation, you indicate that according to a CEFIC LRI ECO-18 project this was not an issue in a suspended sediment test with shaking approach. However, ECHA notes that as no final report on the CEFIC project has been published, ECHA cannot verify this information. Nevertheless, ECHA would like to clarify that in the "pelagic study" requested, the amount of suspended solids should be representative of the level of suspended solids in EU surface water, as further specified above.

Furthermore, you state that it is important to select suitable extraction methods for the conduct of simulation studies and to justify and document the extraction procedure and solvent choice appropriately. ECHA agrees and further specifies that when reporting the non-extractable residues (NER) in your test results, you are requested to explain and scientifically justify the extraction procedure and solvent used to obtain a quantitative measure of NER.

Therefore, pursuant to Article 41(1) and (3) of the REACH Regulation, you are requested to submit the following information derived with the registered substance subject to the present decision: Aerobic mineralisation in surface water – simulation biodegradation test (test method: EU C.25./OECD TG 309).

Notes for your consideration

Before conducting the requested test you are advised to consult the ECHA Guidance on information requirements and chemical safety assessment, Chapter R7b, Sections R.7.9.4 and R.7.9.6 (version 3.0, February 2016) and Chapter R.11, Section R.11.4.1.1 (version 2.0, November 2014) on PBT assessment.

In accordance with Annex I, Section 4, of the REACH Regulation you should revise the PBT assessment when results of the test detailed above is available. You are also advised to consult the ECHA Guidance on information requirements and chemical safety assessment (version 2.0, November 2014), Chapter R.11, Section R.11.4.1.1. and Figure R. 11-3 on PBT assessment for the integrated testing strategy for persistency assessment in particular taking into account the degradation products of the registered substance.

7. Identification of degradation products (Annex IX, 9.2.3.)

Pursuant to Articles 10(a) and 12(1) of the REACH Regulation, a technical dossier registered at 100 to 1000 tonnes per year shall contain as a minimum the information specified in Annexes VII to IX of the REACH Regulation. The information to be generated for the dossier must fulfil the criteria in Article 13(4) of the same regulation.

The identification of the degradation products is a standard information requirement according to column 1, Section 9.2.3. of Annex IX of the REACH Regulation. Column 2 of Section 9.2.3. of Annex IX further states that the information does not need to be provided if the substance is readily biodegradable.

There is no information provided in the registration dossier to fulfil this information requirement. The substance is not readily biodegradable, has a water solubility of 32 mg/L and is used in industrial, professional and consumer applications where environmental release is likely. Consequently, ECHA considers that the adaptation rules of Column 2 of Annex IX, section 9.2.3, or the general adaptation rules of Annex XI are not applicable.

In response to a MSCAs PfA, ECHA notes further that as explained fully in section (6) above, ECHA considers that with the current information gaps the CSA cannot be used to justify that there is no need to investigate further the degradation of the substance and its degradation products. ECHA notes further that the information requested here is needed for the PBT/vPvB assessment and for the identification of the degradation products in relation to the PBT/vPvB assessment. In your comments to the MSCAs PfA, you indicated you agree with the PfA.

Regarding appropriate and suitable test method, the methods will have to be substance specific. When analytically possible, identification, stability, behaviour, molar quantity of metabolites relative to the parent compound should be evaluated. In addition degradation half-life, log Kow and potential toxicity of the metabolite may be investigated. You may obtain this information from the simulation study also requested in this decision, or by some other measure. You will need to provide a scientifically valid justification for the chosen method.

In your comments on the draft decision you requested clarification on the above text stating that "*Concerning the following part of the information requirement "[...] log Kow and potential toxicity of the metabolite may be investigated.", the registrant kindly requests ECHA to remove this part from the decision or alternatively to justify this specific information request based on the REACH legal text*".

ECHA notes that as outlined in ECHA Guidance on information requirements and chemical safety assessment, Chapter R.11. (Version 2.0, November 2014) where only primary degradation is observed, it is necessary to identify the degradation products and to assess whether they possess PBT properties.

As explained above, the information provided on this endpoint for the registered substance in the technical dossier and your comments on the draft decision does not meet the information requirements. Consequently, there is an information gap and it is necessary to provide information for this endpoint.

Therefore, pursuant to Article 41(1)(a) and (3) of the REACH Regulation, you are requested to submit the following information derived with the registered substance subject to the present decision:

Identification of the degradation products (Annex IX, Section 9.2.3.) by using an appropriate and suitable test method, as explained above in this section.

Notes for your consideration

Before providing the above information you are advised to consult the ECHA *Guidance on information requirements and chemical safety assessment* (version 3.0, February 2016), Chapter R.7b., Sections R.7.9.2.3 and R.7.9.4. These guidance documents explain that the data on degradation products is only required if information on the degradation products following primary degradation is required in order to complete the chemical safety assessment. Section R.7.9.4. further states that when substance is not fully degraded or mineralised, degradation products may be determined by chemical analysis.

8. Bioaccumulation in aquatic species (Annex IX, Section 9.3.2.)

Pursuant to Articles 10(a) and 12(1) of the REACH Regulation, a technical dossier registered at 100 to 1000 tonnes per year shall contain as a minimum the information specified in Annexes VII to IX of the REACH Regulation. The information to be generated for the dossier must fulfil the criteria in Article 13(4) of the same regulation.

"Bioaccumulation in aquatic species, preferably fish" is a standard information requirement as laid down in Annex IX, Section 9.3.2.of the REACH Regulation. Adequate information on this endpoint needs to be present in the technical dossier for the registered substance to meet this information requirement.

You have sought to adapt this information requirement according to Annex XI, Section 1.3. and Section 1.5. of the REACH Regulation by providing a (Q)SAR prediction for the registered substance (supporting study, EPI Suite, calculated BCF 38.28) and a (Q)SAR prediction for an analogue substance *"1,3-dihydro-4(or 5)-methyl-2H-benzimidazole-2-thione"* (EC no 258-904-8), (key study, EPI Suite, calculated BCF 1.017). You have also stated that the (Q)SAR information provided on the registered substance may be relevant as part of a weight of evidence approach.

However, ECHA notes that your adaptation does not meet the general rule for adaptation of Annex XI; Section 1.3. and Section 1.5. because of the reasons outlined in Appendix 1, section A.1 and A.2 of this decision. Because of the deficiencies of the read across approach and the (Q)SAR data, ECHA does not consider the read across and (Q)SAR data as valid sources of information for a weight of evidence approach according to Annex XI, Section 1.2, of the REACH Regulation.

Therefore, your adaptation of the information requirement cannot be accepted.

In your comments on the draft decision you state as follows *"Formally the registrant agrees that the BCF study is triggered based on REACH Annex IX. However the experimentally determined log Kow of 3.07 if very close to the threshold value of log Kow ≤ 3 mentioned in Annex IX column 2 for the relevant endpoint. In addition, the experimentally determined value is well below the screening criterion for B/vB of log Kow ≤ 4.5. Based on above argumentation, the registrant does not consider the BCF study to have relevance for the PBT/vPvB-assessment.*

Additionally, the registrant suggests not to perform this vertebrate study for animal welfare reasons. Should ECHA, however, disapprove the registrant`s assessment strategy and justify that based on the REACH legal text a study on bioaccumulation of ZMB2 is still needed then the registrant would ask to incorporate this study into a tiered ITS concept. This would mean to first investigate the P/vP criterion and delay all testing on B/vB (in particular with respect to vertebrate testing) until there is final confirmation that the substance is P/vP".

ECHA notes that although the experimentally derived value is close to the column 2 adaptation threshold of log Kow ≤ 3, the value is still above 3 and so the column 2 adaptation is not applicable. The QSAR adaptation applied in the dossier also fails for reasons explained above.

ECHA acknowledges that it may be relevant to determine the potential persistence of the substance before proceeding with bioaccumulation testing. The note for consideration below is updated to clarify this.

As explained above, the information provided on this endpoint for the registered substance in the technical dossier and your comments does not meet the information requirement. Consequently there is an information gap and it is necessary to provide information for this endpoint.

According to ECHA *Guidance on information requirements and chemical safety assessment, Chapter R.7c* (version 2.0, November 2014) bioaccumulation in fish: aqueous and dietary exposure (test method EU C.13. / OECD TG 305) is the preferred test to cover the standard information requirement of Annex IX, Section 9.3.2.

In response to MSCAs PfA, providing a preferred route of aqueous exposure, ECHA notes that ECHA Guidance defines further that results obtained from a test with aqueous exposure can be used directly for comparison with the B and vB criteria of Annex XIII of REACH Regulation and can be used for hazard classification and risk assessment. Comparing the results of a dietary study with the REACH Annex XIII B and vB criteria is more complex and has higher uncertainty. Therefore, the aqueous route of exposure is the preferred route and shall be used whenever technically feasible. If you decided to conduct the study using the dietary exposure route, you shall provide scientifically valid justification for your decision. You shall also attempt to estimate the corresponding BCF value from the dietary test data by using the approaches given in Annex 8 of the OECD 305 TG. In any case you shall report all data derived from the dietary test as listed in the OECD 305 TG.

In your comments on the MSCAs PfA, in summary, you indicate you disagree that conducting the OECD TG 305 using the aqueous exposure route has relevance for the PBT/vPvB-assessment and you remain concerned about performing this study, as amended by the MSCA, for animal welfare reasons. However, ECHA notes the MSCAs PfA stated that the aqueous exposure route is to be considered as the preferred route, whenever technically feasible. In addition, concerning the PBT/vPvB-assessment and the suggested additional text to further clarify the ITS concept, please note that we have included under "Notes for your consideration" a reference to Chapter R.11. PBT/vPvB assessment, in order to make you aware of the importance and the use of the ITS concept under a PBT assessment.

Therefore, pursuant to Article 41(1) and (3) of the REACH Regulation, you are requested to submit the following information derived with the registered substance subject to the present decision: Bioaccumulation in fish: aqueous exposure bioconcentration fish test (test method: OECD TG 305-I)

Notes for your consideration

Before conducting testing, you are advised to consult the ECHA Guidance on the information requirements and chemical safety assessment (version 2.0, November 2014), Chapter R.11. PBT/vPvB assessment, in particular to first conclude on whether the registered substance is not persistent (P) and not very persistent (vP) or whether it may fulfil Annex XIII of the REACH Regulation criteria of being P or vP and to consult the PBT assessment for Weight-of-Evidence determination and the integrated testing strategy for bioaccumulation assessment, in particular concerning relevant constituents, impurities, additives and degradation/transformation products. Also, you need to carefully consider the potential formation of stable degradation products with PBT/vPvB properties.

In addition, you are advised to consult the ECHA Guidance on information requirements and chemical safety assessment, Chapters R.4, 5, 6, R.7b and R.7c. If you decide to adapt the testing requested according to the specific rules outlined in Annexes VI to X and/or according to general rules contained in Annex XI of the REACH Regulation, you are referred to the advice provided in practical Guides on "How to use alternatives to animal testing to fulfil your information requirements for REACH registration" and on "How to use and report (Q)SARs".

Appendix 2: Procedural history

For the purpose of the decision-making, this decision does not take into account any updates of your registration after the date when the draft decision was notified to you under Article 50(1) of the REACH Regulation.

The compliance check was initiated on 11 May 2016.

The decision making followed the procedure of Articles 50 and 51 of the REACH Regulation, as described below:

ECHA notified you of the draft decision and invited you to provide comments.

ECHA took into account your comments and did not amend the request(s).

ECHA notified the draft decision to the competent authorities of the Member States for proposals for amendment.

ECHA received proposals for amendment and modified the draft decision.

ECHA invited you to comment on the proposed amendments.

ECHA referred the draft decision to the Member State Committee.

Your comments on the proposed amendment(s) were taken into account by the Member State Committee

The Member State Committee reached a unanimous agreement on the draft decision during its MSC-52 meeting and ECHA took the decision according to Article 51(6) of the REACH Regulation.

Appendix 3: Further information, observations and technical guidance

1. The substance subject to the present decision is provisionally listed in the Community rolling action plan (CoRAP) for start of substance evaluation in 2018.

2. This compliance check decision does not prevent ECHA from initiating further compliance checks on the present registration at a later stage.

3. Failure to comply with the request(s) in this decision, or to fulfil otherwise the information requirement(s) with a valid and documented adaptation, will result in a notification to the enforcement authorities of your Member State.

4. In carrying out the test(s) required by the present decision it is important to ensure that the particular sample of substance tested is appropriate to assess the properties of the registered substance, taking into account any variation in the composition of the technical grade of the substance as actually manufactured or imported. If the registration of the substance covers different grades, the sample used for the new test(s) must be suitable to assess these. Furthermore, there must be adequate information on substance identity for the sample tested and the grade(s) registered to enable the relevance of the test(s) to be assessed.