EUROPEAN CHEMICALS AGENCY

Helsinki, 14 May 2020

Addressees
Registrant of 930-936-3 listed in the last Appendix of this decision

Date of submission for the dossier subject of this decision
11 March 2019

Registered substance subject to this decision, hereafter 'the Substance'
Substance name: Mono-, and di-(sec-hexadecyl)naphthalene
EC number: 930-936-3
CAS number: Not specified

Decision number: [Please refer to the REACH-IT message which delivered this communication (in format CCH-D-XXXXXXXXXX-XX-XX/D)]

DECISION ON A COMPLIANCE CHECK

Based on Article 41 of Regulation (EC) No 1907/2006 (REACH), ECHA requests that you submit the information listed below by the deadline of ***21 November 2022***.

A. Requirements applicable to all the Registrants subject to Annex VII of REACH

1. In vitro gene mutation study in bacteria (Annex VII, Section 8.4.1.; test method: Bacterial reverse mutation test, EU B.13/14. /OECD TG 471), with the Substance;

2. Growth inhibition study aquatic plants (Annex VII, Section 9.1.2.; test method EU C.3./OECD TG 201) with the Substance;

B. Requirements applicable to all the Registrants subject to Annex IX of REACH

1. Pre-natal developmental toxicity study (Annex IX, Section 8.7.2.; test method OECD TG 414) in a first species (rat or rabbit), oral route with the Substance;

2. Long-term toxicity testing on aquatic invertebrates (Annex IX, Section 9.1.5.; test method EU C.20./OECD TG 211) with the Substance;

3. Long-term toxicity testing on fish (Annex IX, Section 9.1.6.1.; test method OECD TG 210) with the Substance;

4. Identification of degradation products (Annex IX, Section 9.2.3.) of each relevant constituent present in concentration at or above 0.1% (w/w), using an appropriate test method with the Substance;

5. Effects on soil micro-organisms (Annex IX, Section 9.4.2.; test method EU C.21/OECD TG 216) with the Substance;

C. Requirements applicable to all the Registrants subject to Annex X of REACH

1. Pre-natal developmental toxicity study (Annex X, Section 8.7.2.; test method OECD TG 414) in a second species (rabbit or rat), oral route with the Substance.

2. Extended one-generation reproductive toxicity study (Annex X, Section 8.7.3.; test method: OECD TG 443) in rats, oral route, specified as follows:
   - Ten weeks premating exposure duration for the parental (P0) generation;
   - Dose level setting shall aim to induce systemic toxicity at the highest dose level;
   - Cohort 1A (Reproductive toxicity);
   - Cohort 1B (Reproductive toxicity) without extension to mate the Cohort 1B animals to produce the F2 generation;

   You must report the study performed according to the above specifications. Any expansion of the study must be scientifically justified.

3. Long-term toxicity to terrestrial invertebrates (Annex X, Section 9.4.4.; test method: OECD TG 222 or OECD TG 220 with the Substance;

4. Long-term toxicity to plants (Annex X, Section 9.4.6.; test method OECD TG 208, with at least six species tested (with as a minimum two monocotyledonous species and four dicotyledonous species) or ISO 22030) with the Substance.

Conditions to comply with the requests

You are bound by the requests for information corresponding to the REACH Annexes applicable to your own registered tonnage of the Substance at the time of evaluation. Therefore you have to comply with the requirements of Annexes VII to X of REACH, if you have registered a substance at above 1000 tpa.

The Appendices state the reasons for the requests for information to fulfil the requirements set out in the respective Annexes of REACH. The Appendix entitled Observations and technical guidance addresses the generic approach for the selection and reporting of the test material used to perform the required studies and provides generic recommendations and references to ECHA guidance and other reference documents.

You must submit the information requested in this decision by the deadline indicated above in an updated registration dossier and also update the chemical safety report, where relevant, including any changes to classification and labelling, based on the newly generated information. The timeline has been set to allow for sequential testing where relevant.

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, has to 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] under the authority of Christel Schilliger-Musset, Director of Hazard Assessment

[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 A: Reasons for the requests to comply with Annex VII of REACH

Under Articles 10(a) and 12(1) of REACH, a technical dossier registered at 1 to 10 tonnes or more per year must contain, as a minimum, the information specified in Annex VII to REACH.

1. In vitro gene mutation study in bacteria (Annex VII, Section 8.4.1.)

An *In vitro* gene mutation study in bacteria is a standard information requirement in Annex VII to REACH.

You have provided a key study in your dossier, for *in vitro* gene mutation (Ames) test in bacteria (1989).

We have assessed this information and identified the following issue:

To fulfil the information requirement, the study has to meet the key parameters of OECD TG 471 (1997), which indicates that the test should be performed with 5 strains: four strains of *S. typhimurium* (TA98; TA100; TA1535; TA1537 or TA97a or TA97) and one strain which is either *S. typhimurium* TA102 or *E. coli* WP2 uvrA or *E. coli* WP2 uvrA (pKM101).

You have provided an Ames test with the following strains, TA 98, TA 100, TA 1535, TA 1537, and TA 1538 which all gave negative results.

The study you have provided was not conducted with the appropriate five strains as it does not include results in the required fifth strain, *S. typhimurium* TA102 or *E. coli* WP2 uvrA or *E. coli* WP2 uvrA (pKM101).

Therefore, the information provided does not cover a key parameter required by OECD TG 471.

To fulfil the information requirement for the Substance, the *in vitro* gene mutation study in bacteria (OECD TG 471) should be performed using one of the following strains: E. coli WP2 uvrA, or E. coli WP2 uvrA (pKM101), or S. typhimurium TA102.

2. Growth inhibition study aquatic plants (Annex VII, Section 9.1.2.)

Growth inhibition study aquatic plants is a standard information requirement in Annex VII to REACH.

You have provided a key study ([redacted] 1990) conducted according to EPA OTS 797.1050 with the Substance.

We have assessed this information and identified the following issue(s).

Tests on substances must be conducted in accordance with the OECD test guidelines or another recognised international test method (Article 13(3) of REACH). Appendix R.7.8-2 of ECHA Guidance R.7.b lists the acceptable alternatives to the OECD tests. OECD TG 201 is the preferred guideline to fulfil this information requirement. The guideline specifies that for difficult to test substances (UVCB, hydrophobic, adsorptive and poorly water-soluble), OECD GD 23 is to be followed. The OECD TG 201 and the OECD GD 23, require that you must (among others):

- provide evidence that the test solution preparation allowed achieving the maximum dissolved concentration under test conditions;
- provide evidence that exposure concentrations have been maintained throughout the test (within ±80-120 % of the nominal or initial measured concentration);
- perform analytical monitoring of the substance to verify the initial concentrations and maintenance of the exposure concentrations during the test.

The study ([redacted] 1990) is conducted in accordance with a test guideline listed as an acceptable alternative to OECD TG 201.

The Substance is a 'difficult to test' substance: it is a UVCB, hydrophobic with adsorptive properties (log Kow 11) and poorly water soluble (< 0.0005 mg/L) indicating difficulties for test solution preparation and testing based on Table 2 of OECD GD 23.

You report that the test solutions were prepared by direct addition of the test substance to nutrient enriched distillated water. You have not provided any justification for the methods used to prepare the test solutions.

You have not carried out any analytical monitoring of the test concentrations nor provided any evidence that the exposure concentrations have been maintained for the Substance during the study period.

You have not justified nor demonstrated that the method applied in the aquatic toxicity test allowed achieving maximum dissolved concentrations.

In the absence of analytical monitoring, you have not verified the initial concentrations nor demonstrated the maintenance of the exposure concentrations during the test.

Therefore, the information requirement is not fulfiled.

Study design

The Substance is difficult to test due to the low water solubility, hydrophobicity and adsorptive properties as explained above. OECD TG 201 specifies that for difficult to test substances, the OECD GD 23 is to be followed. To get reliable results, the substance properties need to be considered when performing the test, in particular in test design including exposure system and test solution preparation, and sampling. OECD GD 23 (Table 1) describes testing difficulties related to a specific property of the substance. You may use the approaches described in OECD GD 23 or other approaches if more appropriate for your substance. The approach selected must be justified and documented. Due to the substance properties it may be difficult to achieve and maintain the exposure concentrations. Therefore, you have to demonstrate that the concentration of the substance is stable throughout the test (i.e. measured concentrations remains within 80-120% of the nominal concentration). If it is not possible to demonstrate the stability, you must express the effect concentration based on measured values as described in the applicable test guideline. In case the dose-response relationship cannot established (no observed effects), you must demonstrate that the test solution preparation method applied was sufficient to maximise the concentration of the Substance in the test solution.

Appendix B: Reasons for the requests to comply with Annex IX of REACH

Under Articles 10(a) and 12(1) of REACH, a technical dossier registered at 100 to 1000 tonnes or more per year must contain, as a minimum, the information specified in Annexes VII to IX to REACH.

1. Pre-natal developmental toxicity study (Annex IX, Section 8.7.2.) in a first species

A Pre-natal developmental toxicity (PNDT) study (OECD TG 414) in one species is a standard information requirement under Annex IX to REACH.

You have provided Pre-natal developmental toxicity study in rats, oral-gavage (according to OECD TG 414, GLP, 2011).

We have assessed this information and identified the following issue(s):

To fulfil an information requirement or to be appropriate for an adaptation, the test material must be representative for the Substance (ECHA Guidance R.4).

The study you provided is claimed to be performed with the Substance (Mono-, and di-(sec-hexadecyl)naphthalene; EC: 930-936-3). However, ECHA notes that in the description of the design, results and conclusions in the robust study summary, you address an analogue substance (MCP 2484, EC: 410-190-0). Because of this contradicting information, currently the identity of the testing material and its impurity profile cannot be assessed using the information provided in the registration dossier.

Information on study design

A PNDT study according to the test method OECD TG 414 must be performed in rabbit as preferred non-rodent species/ rat as preferred rodent species.

The study shall be performed with oral[2] administration of the Substance.

In your comments to the draft decision you dispute ECHA's request for oral route of administration. You argue that the text in the ECHA guidance[2] pointing out that "*for reproductive toxicity which focus on the detection of reproductive hazards, the oral route (gavage, in diet, or in drinking water) is the "default" route, except for gases*" is not in line with the OECD TG 414 guideline which indicates "*The test substance or vehicle is usually administered orally by intubation. If another route of administration is used, the tester should provide justification and reasoning for its selection, and appropriate modifications may be necessary*". You also consider that ECHA's interpretation that oral route is the most appropriate route for reproductive toxicity is inconsistent with that for the repeated dose toxicity at Annex VIII, Section 8.6.1 and Annex IX, Section 8.6.2. You refer to Annex IX Column 1, section 8.7.2. of Annex IX and X which refers to the "*most appropriate route [...] having regard to the likely route of human exposure*" highlighting the different wording of that provision in comparison with column 2 for repeated dose toxicity. Based on the above you request ECHA to "*[...] explicitly indicate dermal exposure would also be an acceptable route of exposure for rabbit*". You provided the following justification: "*Given the intended uses of this substance in lubricants, the most likely route of human exposure is dermal*".

[2] ECHA Guidance R.7a, Section R.7.6.2.3.2.

According to the test method (OECD TG 414) and the ECHA guidance[2] alike, the oral route is the most appropriate route of administration, unless a scientific justification for other route (inhalation or dermal) is provided. Regarding your reference to information requirements for repeated dose toxicity under REACH, the criteria for route of administration are different, because the hazard classes for specific target organ toxicity (repeated dose toxicity) depend on dose levels but for reproductive toxicity on intrinsic properties of the Substance. According to the ECHA guidance[2] for reproductive toxicity *"Testing via dermal route might be necessary under specific circumstances, for example for substances with high dermal penetration and indications for a specific toxicity following dermal absorption".*

As also cited by you in your comments, for cases when the oral route is not considered suitable, the registrants have to provide a reasoning for selecting a different route of administration and *"appropriate modifications may be necessary"*. According to the OECD TG 414 *"Such adaptation is acceptable, when convincing scientific evidence suggests that the adaptation will lead to a more informative test. In such a case, this scientific evidence should be carefully documented in the study report"*.

ECHA notes that in your dossier you do not have any toxicokinetic data with the Substance and you did not provide any scientific evidence and/or reasoning why you consider dermal exposure *"an acceptable route of exposure for rabbit"* but not the oral route.

It is necessary for the purposes of the REACH regulation that intrinsic properties of the Substance are investigated in order to allow the determination of appropriate hazard classification. To achieve this, it is necessary to aim to the highest possible internal exposure of the Substance for reproductive toxicity and this is usually achieved for solids and liquids by using oral administration unless proven otherwise.

Hence, the study must be performed with oral administration of the Substance.

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

Long-term toxicity testing on aquatic invertebrates is a standard information requirement in Annex IX to REACH.

You have adapted this information requirement by using a Grouping of substances and read-across approach under Annex XI, Section 1.5. with the key study (2003) conducted with the analogue substance (Naphthalene, (1-methylnonadecyl, 135585-40-9).

Annex XI, Section 1.5. specifies two conditions which must be fulfilled whenever a read-across approach is used. Firstly, there needs to be structural similarity between substances which results in a likelihood that the substances have similar physicochemical, toxicological and ecotoxicological properties so that the substances may be considered as a group or category. Secondly, it is required that the relevant properties of a substance within the group may be predicted from data for reference substance(s) within the group. Additional information on what is necessary when justifying a read-across approach can be found in the ECHA Guidance R.6 and related documents.

You predict the properties of the Substance from the analogue substance: Naphthalene, (1-methylnonadecyl)- (CAS: 135585-40-9; i.e. the source substance).

You have provided a read-across justification that addresses the current endpoint in the Endpoint Summary of IUCLID Section 6.1.4.

We have assessed your adaptation and note the following shortcomings with regards to the prediction of long-term toxicity on aquatic invertebrates properties.

i) Read-across hypothesis only based on structural similarity

A read-across hypothesis needs to be provided, establishing why a prediction for a toxicological or ecotoxicological property is reliable. This hypothesis should be based on recognition of the structural similarities and differences between the source substance(s) and your Substance.[3] It should explain why the differences in the chemical structures should not influence the toxicological/ ecotoxicological properties or should do so in a regular pattern.

You have provided the following reasoning for the prediction of long-term toxicity on aquatic invertebrates: *"Justification for read-across stems from the fact that MCP 2395 (naphthalene, 1-methylnonadecyl) is a related C20 alkylnaphthalene structural analog of the study substance (mono-, and di-(sec-hexadecyl)naphthalene) and because of their close structural similarities (C16- versus C20- alkyl group) and expected similar properties. Physical-chemical properties like water solubility are expected to be very low for both these two long-chain alkylated naphthalene substances. Read-across effects on Daphnia magna are expected to be similar owing to the expected very low water-solubility and bioavailability for these related alkylated naphthalene materials (four carbon difference between the two materials)."*

Your read-across hypothesis is that the similarity in chemical structure between the source substance(s) and your Substance is a sufficient basis for predicting the properties of your Substance for other endpoints.

However, similarity in chemical structure does not necessarily lead to predictable or similar long-term toxicity on aquatic invertebrates properties. Additionally, there are structural differences between the source substance and the Substance and you have not considered the impact of the structural differences on the prediction.

Therefore, you have not provided a well-founded hypothesis to establish a reliable prediction for a long-term toxicity on aquatic invertebrates property.

ii) Source study(ies) not meeting Annex XI Section 1.5 Requirements

At last, according to Annex XI, Section 1.5., if the grouping concept is applied then in all cases the results to be read across must:

- be adequate for the purpose of classification and labelling and/or risk assessment;
- have adequate and reliable coverage of the key parameters addressed in the corresponding test method referred to in Article 13(3).

OECD TG 211 is the preferred guideline to fulfil this information requirement. The guideline specifies that for difficult to test substances (UVCB, hydrophobic, adsorptive and poorly water-soluble), OECD GD 23 is to be followed. The key parameters of OECD TG 211 and the OECD GD 23 include that you must (among others):

- provide evidence that the test solution preparation allowed achieving the maximum dissolved concentration under test conditions;
- provide evidence that exposure concentrations have been maintained throughout the

[3] ECHA Guidance R.6

test (within ±80-120 % of the nominal or initial measured concentration);
- perform analytical monitoring of the substance to verify the initial concentrations and maintenance of the exposure concentrations during the test. For this purpose, a sufficiently sensitive analytical method must be used for the analysis of the test chemical in the test solutions. For example, sum parameter methods (e.g. total organic carbon) will not demonstrate the stability of individual UVCB components during the test and are limited by relatively poor sensitivity (approximately 1 mg/L).

The Substance is a 'difficult to test' substance: it is a UVCB, hydrophobic with adsorptive properties (logKow 11) and poorly water soluble (< 0.0005 mg/L) indicating difficulties for test solution preparation and testing based on Table 2 of OECD GD 23.

You report that the test solutions were prepared by stirring the test mixtures for 22-24 hrs. allowing them to settle for 55 mins to 1 hr 25 min before the aqueous WAF solutions were removed. You have not provided any justification for the methods used to prepare the test solutions.

You have carried out total organic carbon (TOC) analyses, which did not indicate significant detectable dissolved test substances in any of the test solutions.

You have not justified nor demonstrated that the method applied in the aquatic toxicity test allowed achieving maximum dissolved concentrations.

The chemical analysis performed by TOC was limited by poor sensitivity and did not allow to detect the test substance in the test solutions. Therefore, you have not provided any evidence that exposure concentrations were maintained during the test.

Therefore, the information requirement is not fulfiled.

Due to the above mentioned deficiencies of the source study, it does not provide adequate and reliable coverage of the key parameters of OECD TG 211. Consequently, the study is not adequate for the purpose of classification and labelling and/or risk assessment.

iii) Conclusion

You have not established that relevant properties of the Substance can be predicted from data on the analogue substance. Your adaptation does not comply with the general rules of adaptation as set out in Annex XI, Section 1.5. and your adaptation based on a grouping and read-across approach is rejected.

Therefore, the information requirement is not fulfilled.

In your comments on the draft decision, you noted your intention to update your read-across justification in 2020 following the principles laid out in ECHA's RAAF. You have not submitted any information to support your read-across adaptation. You remain responsible for complying with this decision by the set deadline and ECHA expects you to submit the missing information required in the present decision.

Study design

The Substance is difficult to test due to the low water solubility, hydrophobicity, and adsorptive properties as explained above. OECD TG 211 specifies that for difficult to test substances, the OECD GD 23 is to be followed as explained above under request A.2.

3. Long-term toxicity testing on fish (Annex IX, Section 9.1.6.1.)

Long-term toxicity testing on fish is a standard information requirement in Annex IX to REACH.

You have provided an adaptation for this endpoint where you consider that long-term toxicity testing on fish is not needed since the Substance is not likely to pose chronic aquatic hazards based on the long-term toxicity to *Daphnia* study with an analogue substance and based on the lack of acute adverse effects in aquatic organisms.

We have assessed this information and identified the following issue(s).

As specified in Annex IX, Section 9.1., Column 2, long-term toxicity on fish must be performed unless the Chemical Safety Assessment demonstrates that risks towards the aquatic compartment arising from the use of the Substance are controlled (as per Annex I, section 0.1). The justification must be documented in the Chemical Safety Assessment.

In particular, the Chemical Safety Assessment must take into account all relevant hazard information from your registration dossier to support that long-term toxicity testing is not required.

The toxicity information must at least cover species of three trophic levels: algae/aquatic plants, invertebrates (*Daphnia* preferred), and fish.[4] For poorly water soluble and hydrophobic substances, risks cannot be reliably assessed based on short term toxicity tests (i.e. to derive a reliable PNEC for this substance).[5] Such substances require longer time to be significantly taken up by the test organisms and as a consequence steady state conditions are likely not reached within the duration of a short-term toxicity test. For this reason, short-term tests may not give a true measure of toxicity for this type of substances and long-term effects cannot be excluded.

Based on the information you provided, the Substance is poorly water soluble (water solubility < 0.0005 mg/L) and hydrophobic (log Kow 11).

You have provided short-term toxicity on fish and *Daphnia* studies, an algae growth inhibition and a read-across long-term toxicity on *Daphnia* study. You have not provided a long-term toxicity on fish study.

As indicated above, short-term studies are, due to the properties of the Substance, insufficient to assess the risks.

Furthermore, as specified in requests A.2 and B.2, the data on algae growth inhibition and the data on long-term toxicity to *Daphnia* are not compliant with the REACH relevant requirements.

Therefore, your dossier currently does not include adequate information to characterise the hazardous property of the Substance to aquatic organisms.

In conclusion, in absence of all this information, your Chemical Safety Assessment does not demonstrate that the risks of the Substance are adequately controlled. As a consequence,

[4] ECHA Guidance R.7b, Section R.7.8.5.3
[5] ECHA Guidance R.7b, Section R.7.8.4.3

your adaptation is rejected as it does not meet the specific rules for adaptation of Annex IX, Section 9.1., Column 2.

In your comments to the draft decision you refer to an existing OECD TG 305 study (*Dietary Bioaccumulation in Fish*) with the Substance, which you claim is relevant for the evaluation of long term toxicity to fish.

We have assessed the information provided in the comments and identified the following issue(s).

Tests on substances must be conducted in accordance with the OECD test guidelines or other recognised international test methods (Article 13(3) of REACH). OECD TG 210 is the preferred guideline to fulfil this information requirement since it is the most sensitive of the standard fish tests available (ECHA Guidance R.7b, Sections R.7.8.2 and R.7.8.4.1). It covers several life stages of the fish and also examines the potential toxic effects caused by bioaccumulation. Observational endpoints include, among others, hatching success, survival and growth.

You claim that OECD GD 23 indicates that to assess the toxicity of difficult to test substances information from dietary bioaccumulation study may be used. You therefore intend to incorporate information from an existing OECD TG 305 study where no treatment-related effects on growth or mortality were observed after 12 days of dietary exposure at a dose of 94 ppm.

You refer to advice in OECD GD 23 in using a bioaccumulation dietary study to support the assessment of fish toxicity. However your interpretation of the OECD GD 23 appears to be not correct as the GD does not foresee using a dietary bioaccumulation study to assess toxicity of difficult to test substances. Footnote 1 of Paragraph 38 only indicates that dietary exposure may be useful for difficult to test substances but that no such test for toxicity yet exists.

In addition, bioaccumulation studies do not provide information on the effect endpoints investigated in an OECD TG 210 study as listed above. As given in paragraphs 51 and 112 of the OECD TG 305, a bioaccumulation study must be performed at doses below those causing toxic effects. According to the validity criteria mortality and/or other adverse effects must be below 10% at the end of the test (paragraphs 113 of OECD TG 305). Therefore, absence of effects in a fish bioaccumulation study does not provide relevant information for this endpoint.

Due to the above, the study you refer to in your comments cannot be used to fulfil this standard information requirement. The information provided in your comments is not sufficient to demonstrate that the risks of the Substance are adequately controlled.

Based on the above, the information requirement is not fulfilled.

Study design

The Substance is difficult to test due to the low water solubility, hydrophobicity, and adsorptive properties as explained above. OECD TG 210 specifies that for difficult to test substances, the OECD GD 23 is to be followed as explained above under request A.2.

4. Identification of degradation products (Annex IX, Section 9.2.3.)

Identification of degradation products is a standard information requirement in Annex IX to REACH.

You have sought to adapt this information requirement based on Annex IX, Section 9.2, Column 2.

You justified the adaptation by stating that the chemical safety assessment according to Annex I has not indicated a need to investigate further the degradation of the test substance.

As specified in Annex IX, section 9.2., Column 2, testing on degradation must be performed unless the Chemical Safety Assessment demonstrates that risks arising from the use of the Substance are controlled (as per Annex I, section 0.1).

In particular according to Annex I elements to be taken into account for that demonstration include:

- PBT/vPvB assessment including information on constituents present in concentration at or above 0.1% (w/w) and on relevant degradation products (ECHA Guidance R.11, Sections R.11.4 and R.11.3.2.1).

You specify that the Substance is not expected to cause acute or chronic toxicity to aquatic organisms in the aqueous environment and that the Substance is not readily biodegradable but it is expected to be inherently biodegradable under environmental conditions and therefore further simulation testing would provide only little additional information.

However, you have not provided any information on the identity and PBT properties of the degradation products of the Substance and you consider only the PBT properties of the parent substance in your Chemical Safety Assessment (CSA) and in your justification for the adaptation.

Taking into account the above, without the information on relevant degradation products no definitive conclusion can be reached for the PBT/vPvB assessment. Therefore, ECHA concludes that your CSA does not demonstrated that the risks of the Substance are adequately controlled. Therefore, your adaptation does not meet the specific rules for adaptation of Annex IX, Section 9.2., Column 2.

Therefore, the information requirement is not fulfilled.

Study selection and design

You are advised to consult ECHA Guidance R.7b (Section R.7.9.4) which describes the appropriate and suitable test method for the determination of degradation products. You may obtain information on degradation/transformation products from the applicable simulation test OECD TG 309 "pathway part", OECD TG 308, OECD TG 307 or by some other measures such as enhanced screening level degradation test. You will need to provide a scientifically valid justification for the chosen method. The provided information should include, identification, stability, behaviour, molar quantity of metabolites relative to the parent compound. In addition, degradation half-life, log Kow and potential toxicity of the metabolites may be investigated.

Under Annex XIII, you must assess the PBT/vPvB properties of the relevant constituents of the Substance. Therefore, the transformation/degradation producst of each relevant

constituent present in concentrations at or above 0.1% (w/w) or, if not technically feasible, in concentrations as low as technically detectable must be assessed. Alternatively, you would have to justify why you consider these not relevant for the PBT/vPvB assessment.

5. Effects on soil micro-organisms (Annex IX, Section 9.4.2.)

Effects on soil micro-organisms is a standard information requirement in Annex IX to REACH.

You have provided an adaptation for this endpoint where you consider that, based on the lack of adverse effects to aquatic microorganisms in the available activated sludge respiration inhibition study, the Substance is not expected to cause adverse effects to soil microorganisms and hence effects on soil micro-organisms testing is not required.

In order to adapt this information requirement, an adaptation has to comply with specific rules for adaptation in accordance with column 2 of Annex IX, Sections 9.4 or 9.4.2. or with the general rules of Annex XI to REACH.

The reasons that you provided for the waiving of the standard information requirement do not form any adaptation option as foreseen in the legal text.

As the conditions for adapting this information requirement are not fulfilled - neither in accordance with column 2 of Annex IX, Sections 9.4 or 9.4.2. nor with the general rules of Annex XI to REACH – your adaptation is rejected.

Therefore, the information requirement is not fulfilled.

Appendix C: Reasons for the requests to comply with Annex X of REACH

Under Articles 10(a) and 12(1) of REACH, a technical dossier at a tonnage abve 1000 tonnes per year must contain, as a minimum, the information specified in Annexes VII to X to REACH.

1. Pre-natal developmental toxicity study (Annex X, Section 8.7.2.) in a second species

A pre-natal developmental toxicity (PNDT) study in a two species is a standard information requirement in Annex X to REACH.

You have provided a pre-natal developmental toxicity (according to OECD TG 414) conducted in rats. This study is rejected as explained under B.1 above.

For the information requirement on a PNDT study in a second species, you have adapted the information requirement by using weight of evidence with reference to Annex XI, Section 1.2.

You have provided the following information:

A.1. Summary information from toxicokinetic studies with structural analogues:

- 2-isopropylnaphthalene (EC: 217-976-0; CAS: 2027-17-0): toxicokinetic studies in rat (1984) and rabbit (1987)
- sec-hexadexylnaphthalene (EC: 304-232-6; CAS: 94247-63-9): toxicokinetic study in rat (OECD TG 417, 2002)
- Naphthalene reaction product with tetradecene (EC: 410-190-0): toxicokinetic studies (oral and dermal) in rat (OECD TG 417; OECD TG 427, 2013)

A.2. Results from reproductive and developmental toxicity studies with structural analogues:

(i) 2-generation reproductive toxicity study in mice via oral-gavage (no guideline, no GLP; 1977; KL 4) performed with diisopropylnaphthalene
(ii) pre-natal developmental toxicity study in rats, oral-gavage (according to OECD TG 414, GLP, 2012) with Naphthalene reaction product with tetradecene (EC: 410-190-0)
(iii) pre-natal developmental toxicity study in rat, oral-gavage (EPA OPPTS 870.3700; GLP, 1999; KL 4), performed with 2,6-diisopropylnaphthalene (EC: 246-045-1)
(iv) pre-natal developmental toxicity study in rat, oral-gavage (OECD TG 414, GLP, 1993, KL 4), performed with 1,2–di-isopropyl naphthalene EC: 254-052-6

Based on the presented lines of evidence you argue that the developmental toxicity for the Substance "*has been adequately assessed by read-across to studies on the analogues Naphthalene reaction product with tetradecene and 2,6-diisopropylnaphthalene*" and based on the assessment, the Substance is of "*low order of toxicity and the lack of biovailability is expected to be conserved across species*". Therefore, you conclude that "*a prenatal developmental toxicity test in a second species is scientifically not justified*".

Annex XI, Section 1.2 states that there may be sufficient weight of evidence from several independent sources of information leading to assumption/conclusion that a substance has or has not a particular dangerous (hazardous) property, while information from a single source alone is insufficient to support this notion.

In accordance with the ECHA Guidance R.4.4, a WoE adaptation involves an assessment of the relative values/weights of different pieces of the available information which is defined by e.g. the reliability of the data, consistency of results/data, nature and severity of effects, and relevance of the information for the given regulatory endpoint. Subsequently, the lines of evidence should be integrated considering their relative values or weights in order to draw a conclusion. Adequate and reliable documentation shall be provided to describe your WoE approach, the assessment of relative weights of individual piece of information and the subsequent conclusions drawn.

In order to allow concluding on no prenatal developmental toxicity in two species for the Substance in a weight of evidence adaptation, the justification must cover the key elements (parameters) foreseen to be investigated in an OECD TG 414 study in two species. The key parameter(s) of this test guideline include, among others: external, skeletal and soft tissue alterations (variations and malformations).

ECHA assessed to what extent the information submitted enables a conclusion of hazardous properties for prenatal developmental toxicity in a second species and identified the following deficiencies:

1. Reliability of the information

Firstly, ECHA notes that all provided information, studies (i) – (iv), is with analogue substances.

Read-across adaptation can be used to adapt the standard information requirement, provided that the criteria in Annex XI, Section 1.5. are fulfilled.

According to Annex XI, Section 1.5., two conditions shall be necessarily fulfilled. Firstly, there needs to be structural similarity between substances which results in a likelihood that the substances have similar physicochemical, toxicological and ecotoxicological properties so that the substances may be considered as a group or category. Secondly, it is required that the relevant properties of a substance within the group may be predicted from data for reference substance(s) within the group (read-across approach).

A read-across hypothesis needs to be provided, establishing why a prediction for a toxicological or ecotoxicological property is reliable. This hypothesis should be based on recognition of the structural similarities and differences between the source substance(s) and your Substance[6]. It should explain why the differences in the chemical structures should not influence the toxicological/ ecotoxicological properties or should do so in a regular pattern.

You have not provided detailed information on the identity of the source substance(s), a read-across hypothesis and in particular any reasoning establishing why information from analogue substance(s) can reliably contribute to the WoE adaptation to conclude on the presence or absence of the particular dangerous property of the Substance.

As explained above, you have not established that relevant properties of the Substance can be predicted from data on the analogue substance(s). Therefore, the information from the analogue substances does not comply with Annex XI, Section 1.5 and thereby cannot be used as part of the WoE adaptation.

[6] ECHA Guidance R.6

In the absence of the information explained above ECHA cannot contribute any weight to this information in its assessment of the compliance of your adaptation based on WoE.

2. Relevance of the information

Firstly, with regard to the experimental data provided, ECHA notes that study (i) is the only study that provides information on a second species (mouse). However, the OECD TG 416 does not cover key parameters: external, skeletal and soft tissue alterations (variations and malformations), foreseen to be investigated in an OECD TG 414 study.
All the other studies (ii) – (iv), covering key parameters foreseen to be investigated in an OECD TG 414 study are performed on one species (rat). Therefore they do not provide information on a second species. Further, studies (iii)-(iv) reported dose-dependent malformations: cartilage anomalies and reduced skeletal ossification. You claim that the observed effects are treatment-related but not toxicologically relevant, due to maternal toxicity (reduced body weight and food consumption) observed at the same dose levels. ECHA notes that you have disregarded the studies (reliability score of 4) due to limited documentation. ECHA agrees that the documentation provided does not allow to assess their reliability. Furthermore, as explained above, your read-across approach does not fulfil the criteria in Annex XI, Section 1.5 and studies ((ii) – (iv) cannot be used as part of weight of evidence adaptation according to Annex XI, Section 1.2.

Secondly, with regard to the toxicokinetic data, most of the studies provide information on one species (rat). You have provided only one source study in rabbit (publication, 1987; assigned reliability score 3 (not reliable). ECHA agrees with the reliability score of 3, assigned by you, because the documentation provided does not allow to assess the reliability of the study. Hence, it is not possible to compare the toxicokinetic between different species (rat and rabbit) and your claim that "*species-specific differences are unlikely*" is not substantiated with relevant data on the two species.

In addition, your claim that the Substance is not biovailable is not supported by the sub-chronic (90-day) toxicity studies after oral ([redacted] 1991) and dermal exposure ([redacted] 1994), performed with the Substance. In both studies, systemic effects, such as changes in hematological and biochemical parameters, organ weights and histopathological changes are reported. Such effects prove that the Substance is absorbed and bioavalable.

In conclusion, none of the provided sources of information alone or together allows to conclude whether the Substance has or has not hazardous properties related to prenatal developmental toxicity in a second species. Therefore, your adaptation is rejected and the information requirement is not fulfilled.

Information on study design

The test in the first species, performed in rat, is rejected as explained in appendix B.1.

A PNDT study according to the test method OECD TG 414 must be performed in rabbit as preferred non-rodent species and rat as preferred rodent species.

In your comments to the draft decision you state that "*Based on prior experience with developmental toxicity testing in rabbits, it is likely the rabbit will not be a suitable species for toxicity testing*". You "*request that ECHA expand the decision to explicitly identify mouse as a potentially suitable second species [...]*".

ECHA points out that according to the OECD TG 414 "*The preferred rodent species is the rat and the preferred non-rodent species is the rabbit. Justification should be provided if another species is used*".
You did not provide any information on studies with rabbits or other scientific explanation why the rabbit is not suitable species for prenatal developmental toxicity testing of your Substance, as well as you did not provide a scientifically solid justification why you consider mouse as more suitable second species.
Therefore, ECHA considers that the PNDT study according to the test method OECD TG 414 must be performed in rabbit as preferred non-rodent species. You can deviate from this only by providing solid scientific substance-specific evidence (e.g. a tolerability and/or a range-finding study) that rabbits are not suitable for oral administration of your Substance. In this specific situation another species is acceptable when selection is scientifically justified.

Administration route

In your justification for the weight of evidence adaptation you suggest that dermal route is the most approriate route to test the Substance, without further explanation. However, the oral route is the most appropriate route of administration to investigate reproductive toxicity[7]. Hence, the study shall be performed with oral administration of the Substance.

2. Extended one-generation reproductive toxicity study (Annex X, Section 8.7.3.)

The basic test design of an Extended one-generation reproductive toxicity (EOGRT) study (OECD TG 443) is a standard information requirement under Annex X to REACH. Furthermore Column 2 of Section 8.7.3. defines when the study design needs to be expanded.

You have provided the following information under this endpoint in your dossier:

With the Substance:

(i) 90-day dermal toxicity study in rats (supporting study, equivalent OECD TG 411, GLP; 1994);
(ii) 90-day dietary study (supporting study, equivalent to OECD TG 408, GLP; 1991);

With analogue substances:

(iii) 2-generation reproductive toxicity study in mice via oral-gavage (supporting study, no guideline, no GLP; 1977; KL 4) performed with diisopropylnaphthalene
(iv) pre-natal developmental toxicity study in rat, oral-gavage (supporting study, OECD TG 414, GLP, 1993, KL 4), performed with 1,2–di-isopropyl naphthalene EC: 254-052-6
(v) two-generation reproductive toxicity study in rat (key study, according to OECD 416, GLP, 2013) with Naphthalene reaction product with tetradecene (EC: 410-190-0)
(vi) screening for reproduction/developmental toxicity study in rat (supporting study, according to OECD TG 421, GLP, 2012) with Naphthalene reaction product with tetradecene (EC: 410-190-0)

[7] ECHA Guidance R.7a, Section R.7.6.2.3.2.

Althought, you have not explicitly said, based on the provided information, we understand that you sought to adapt this information requirement according Annex XI, section 1.5. (read-across) of REACH regulation.

Therefore, first we have addressed the grouping and read-across approach and have identified the following issue(s):

Annex XI, Section 1.5. specifies two conditions which must be fulfilled whenever a read-across approach is used. Firstly, there needs to be structural similarity between substances which results in a likelihood that the substances have similar physicochemical, toxicological and ecotoxicological properties so that the substances may be considered as a group or category. Secondly, it is required that the relevant properties of a substance within the group may be predicted from data for reference substance(s) within the group. Additional information on what is necessary when justifying a read-across approach can be found in the ECHA Guidance R.6 and the ECHA RAAF document.

Absence of read-across documentation

Annex XI, Section 1.5 requires that whenever read-across is used adequate and reliable documentation of the applied method must be provided. Such documentation must provide a justification for the read-across including a hypothesis, explanation of the rationale for the prediction of properties and robust study summary(ies) of the source study(ies).[8]

You have provided studies conducted with other substances than your Substance in order to comply with the REACH information requirements. You have not provided documentation as to why this information is relevant for your Substance.

In the absence of such documentation, ECHA cannot verify that the properties of your Substance can be predicted from the data on the source substance(s).

In your comments on the draft decision, you noted your intention to update your read-across justification in 2020 following the principles laid out in ECHA's RAAF. You have not submitted any information to support your read-across adaptation. You remain responsible for complying with this decision by the set deadline and ECHA expects you to submit the missing information required in the present decision.

In addition, we have assessed the provided information and have identified the following issues:

To be considered compliant and enable concluding if the Substance is a reproductive toxicant, the study has to meet the requirements of OECD TG 443 as specified in REACH. The following key parameter(s) of this test guideline include, for example:

- examination of relevant life stages
- dosing of the Substance should cover all the life stages from full spermatogenesis and folliculogenesis, mating, gestation, lactation, and exposure of the F1 generation up to the adulthood

With regard to the sources of information you have provided, studies (i)-(iv) and (vi) do not cover the relevant stages and do not investigate the 'toxicity to offspring' with regard post-

[8] ECHA Guidance R.6, Section R.6.2.6.1

natal investigations of the F1 generation up to adulthood nor functional fertility of the F1 generation and post natal-development of the F2 generation.

Based on the above, the information you provided does not fulfil the information requirement.

The specifications for the study design

Premating exposure duration and dose-level setting

The length of premating exposure period must be ten weeks to cover the full spermatogenesis and folliculogenesis before the mating, allowing meaningful assessment of the effects on fertility.

Ten weeks premating exposure duration is required to obtain results adequate for classification and labelling and /or risk assessment. There is no substance specific information in the dossier supporting shorter premating exposure duration.

Therefore, the requested premating exposure duration is ten weeks.

In order to be compliant and not to be rejected due to too low dose levels, the highest dose level shall aim to induce systemic toxicity, but not death or severe suffering of the animals, to allow comparison of reproductive toxicity and systemic toxicity. The dose level selection should be based upon the fertility effects. A descending sequence of dose levels should be selected in order to demonstrate any dose-related effect and to establish NOAELs.

If there is no relevant data to be used for dose level setting, it is recommended that range-finding results are reported with the main study.

You have to provide a justification with your study results that demonstrates that the dose level selection meets the conditions described above.

Cohorts 1A and 1B

Cohorts 1A and 1B belong to the basic study design and must be included.

Species and route selection

The study must be performed in rats with oral[9] administration.

The conditions to include the extension of Cohort 1B are currently not met. No triggers for the inclusion of Cohorts 2A and 2B (developmental neurotoxicity) and Cohort 3 (developmental immunotoxicity) were identified. However, you may expand the study by including the extension of Cohort 1B, Cohorts 2A and 2B and/or Cohort 3. if relevant information becomes available from other studies or during the conduct of this study. Inclusion is justified if the available information meets the criteria and conditions which are described in Column 2, Section 8.7.3., Annex X. You may also expand the study due to other scientific reasons in order to avoid a conduct of a new study. The study design, including any added expansions, must be fully justified and documented. Further detailed guidance on study design and triggers is provided in ECHA Guidance[10].

[9] ECHA Guidance R.7a, Section R.7.6.2.3.2.
[10] ECHA Guidance R.7a, Section R.7.6.

3. Long-term toxicity to terrestrial invertebrates (Annex X, Section 9.4.4.)

Long-term toxicity to terrestrial invertebrates is a standard information requirement in Annex X to REACH.

You have not provided any study on Long-term toxicity to terrestrial invertebrates, but you have provided a key study with the Substance on short-term toxicity to terrestrial invertebrates according to OECD TG 207.

For substances that have a high potential to adsorb to soil or that are highly persistent, the effect of long-term exposures must be estimated for the hazard assessment (ECHA Guidance R.7c, Table R.7.11-2, and Column 2 of section 9.4 of Annex IX).

Based on the information you provided, the Substance is adsorptive (Log Koc 7.43, logKow 11).

You have provided a key study for short-term toxicity on terrestrial invertebrates. You have not provided any long-term toxicity studies on terrestrial invertebrates.

As indicated above, due to the properties of the Substance, short-term terrestrial toxicity studies are not sufficient and long-term terrestrial toxicity studies are necessary to assess the hazards.

Therefore, the information requirement is not fulfilled.

4. Long-term toxicity to plants (Annex X, Section 9.4.6.)

Long-term toxicity to plants is a standard information requirement in Annex X to REACH.

You have provided an adaptation for this endpoint where you consider that based on the available information (i.e. short-term toxicity to terrestrial plants endpoint, lack of acute and chronic adverse effects in aquatic organisms), the Substance is not expected to pose a chronic hazard and hence long-term terrestrial toxicity to plants testing is not required.

We have assessed this information and identified the following issue(s).

As specified in Annex X, Section 9.4.6., Column 2, long-term toxicity on plants must be performed unless the Chemical Safety Assessment demonstrates that risks towards the terrestrial compartment arising from the use of the Substance are controlled (as per Annex I, section 0.1). The justification must be documented in the Chemical Safety Assessment.

In particular, the Chemical Safety Assessment must take into account all relevant hazard information from your registration dossier to support that long-term toxicity testing is not required.

The effects on terrestrial organisms must be addressed for different taxonomic groups: invertebrates, soil micro-organisms and terrestrial plants. For substances that have a high potential to adsorb to soil or that are very persistent, the effect of long-term exposures must be estimated for the hazard assessment (ECHA Guidance R.7c, Table R.7.11-2, and Column 2 of section 9.4 of Annex IX).

Based on the information you provided, the Substance is adsorptive (Log Koc 7.43, logKow 11).

You have provided a short-term toxicity study on terrestrial invertebrates. You have not provided a soil micro-organisms study. You have provided a study on short-term toxicity to plants according to OECD TG 208, in which three species were tested, *i.e. Triticum aestivum* (monocotyledonous species), *Phaseolus aureus* and *Brassica campestris var. chinensis* (dicotyledonous species), conducted on the Substance.

As indicated above, due to the properties of the Substance, long-term terrestrial toxicity studies are necessary to assess the hazards.

You have not provided any long-term terrestrial toxicity studies, and specifically only short-term toxicity study on plants.

Finally, in your justification referring to lack of chronic and acute effects to aquatic organisms, you do not explain how the aquatic data can be used to adapt this standard information requirement. Furthermore, as specified in request B.3, there is currently no adequate information to conclude on the aquatic hazards of the Substance and new aquatic toxicity data is requested (requests A.1, C.2 and C.3).

Therefore, your dossier currently does not include adequate information to characterise the hazardous property of the Substance to terrestrial organisms.

In conclusion, in absence of all this information, your Chemical Safety Assessment does not demonstrate that the risks of the Substance are adequately controlled. As a consequence, your adaptation is rejected as it does not meet the specific rules for adaptation of Annex IX, Section 9.4.6., Column 2.

Based on the above, the information requirement is not fulfilled.

Test design

OECD TG 208 with six species or ISO 22030 is the preferred guideline to fulfil this information requirement. OECD guideline 208 (Terrestrial plants, growth test) considers the need to select the number of test species according to relevant regulatory requirements, and the need for a reasonably broad selection of species to account for interspecies sensitivity distribution. For long-term toxicity testing, ECHA considers six species as the minimum to achieve a reasonably broad selection. Testing shall be conducted with species from different families, as a minimum with two monocotyledonous species and four dicotyledonous species, selected according to the criteria indicated in the OECD 208 guideline.

Appendix D: Procedural history

For the purpose of the decision-making, this decision does not take into account any updates of registration dossiers after the date on which you were notified the draft decision according to Article 50(1) of REACH.

The compliance check was initiated on 7 May 2019.

ECHA followed the procedure detailed in Articles 50 and 51 of REACH.

ECHA notified you of the draft decision and invited you to provide comments within 30 days of the notification.

ECHA took into account your comments and did not amend the requests.

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

As no amendments were proposed, ECHA adopted the decision under Article 51(3) of REACH.

Appendix E: Observations and technical guidance

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

2. Failure to comply with the requests in this decision, or to otherwise fulfil the information requirements with a valid and documented adaptation, will result in a notification to the enforcement authorities of the Member States.

3. Test guidelines, GLP requirements and reporting

   Under Article 13(3) of REACH, all new data generated as a result of this decision needs to be conducted according to the test methods laid down in a European Commission Regulation or according to international test methods recognised by the Commission or ECHA as being appropriate.

   Under Article 13(4) of REACH, ecotoxicological and toxicological tests and analyses shall be carried out according to the GLP principles (Directive 2004/10/EC) or other international standards recognised by the Commission or ECHA.

   Under Article 10 (a) (vi) and (vii) of REACH, all new data generated as a result of this decision must be reported as study summaries, or as robust study summaries, if required under Annex I of REACH. See ECHA Practical Guide: 'How to report robust study summaries'[11].

4. Test material

   Selection of the test material(s) for UVCB substances

   While selecting the test material you must take into account the impact of each constituent/ impurity on the test results for the endpoint to be assessed. For example, if a constituent/ impurity of the Substance is known to have an impact on (eco)toxicity, the selected test material must contain that constituent/ impurity. Any constituents that have harmonised classification and labelling according to the CLP Regulation (Regulation (EC) No 1272/2008) must be identified and quantified using the appropriate analytical methods.

   The OECD Series on Principles of Good Laboratory Practice and Compliance Monitoring, Number 11 [ENV/MC/CHEM(98)16] requires a careful identification of the test material and description of its characteristics. In addition, the Test Methods Regulation (EU) 440/2008, as amended by Regulation (EU) 2016/266, requires that "if the test method is used for the testing of a [...] UVCB [...] sufficient information on its composition should be made available, as far as possible, e.g. by the chemical identity of its constituents, their quantitative occurrence, and relevant properties of the constituents".

   In order to meet this requirement, all the constituents of the test material used for each test must be identified as far as possible.

   Technical Reporting of the test material for UVCB substances

[11] https://echa.europa.eu/practical-guides

The composition of the selected test material must be reported in the respective endpoint study record, under the Test material section. The composition must include all constituents of the test material and their concentration values. Without such detailed reporting, ECHA may not be able to confirm that the test material is relevant for the Substance and to all the registrants of the Substance.

Technical instructions are available in the manual "How to prepare registration and PPORD dossiers" on the ECHA website (https://echa.europa.eu/manuals).

5. Testing strategy for the terrestrial toxicity testing

You are advised to consult ECHA Guidance R.7c, (Section R.7.11.6) which describes the Integrated Testing Strategy for toxicity testing on terrestrial organisms.

6. List of references of the ECHA Guidance and other guidance/ reference documents[12]

Evaluation of available information
Guidance on information requirements and chemical safety assessment, Chapter R.4 (version 1.1., December 2011), referred to as ECHA Guidance R.4 in this decision.

QSARs, read-across and grouping
Guidance on information requirements and chemical safety assessment, Chapter R.6 (version 1.0, May 2008), referred to as ECHA Guidance R.6 in this decision.

ECHA Read-across assessment framework (RAAF, March 2017)[13]

Physical-chemical properties
Guidance on information requirements and chemical safety assessment, Chapter R.7a (version 6.0, July 2017), referred to as ECHA Guidance R.7a in this decision.

Toxicology
Guidance on information requirements and chemical safety assessment, Chapter R.7a (version 6.0, July 2017), referred to as ECHA Guidance R.7a in this decision.

Guidance on information requirements and chemical safety assessment, Chapter R.7c (version 3.0, June 2017), referred to as ECHA Guidance R.7c in this decision.

Environmental toxicology and fate
Guidance on information requirements and chemical safety assessment, Chapter R.7a (version 6.0, July 2017), referred to as ECHA Guidance R.7a in this decision.

Guidance on information requirements and chemical safety assessment, Chapter R.7b (version 4.0, June 2017), referred to as ECHA Guidance R.7b in this decision.

Guidance on information requirements and chemical safety assessment, Chapter R.7c (version 3.0, June 2017), referred to as ECHA Guidance R.7c in this decision.

PBT assessment

[12] https://echa.europa.eu/guidance-documents/guidance-on-information-requirements-and-chemical-safety-assessment
[13] https://echa.europa.eu/support/registration/how-to-avoid-unnecessary-testing-on-animals/grouping-of-substances-and-read-across

Guidance on information requirements and chemical safety assessment, Chapter R.11 (version 3.0, June 2017), referred to as ECHA Guidance R.11 in this decision.

Guidance on information requirements and chemical safety assessment, Chapter R.16 (version 3.0, February 2016), referred to as ECHA Guidance R.16 in this decision.

OECD Guidance documents[14]
Guidance Document on aqueous-phase aquatic toxicity testing of difficult test chemicals – No 23, referred to as OECD GD23.
Guidance Document on Mammalian Reproductive Toxicity Testing and Assessment – No 43, referred to as OECD GD43.

[14] http://www.oecd.org/chemicalsafety/testing/series-testing-assessment-publications-number.htm

Appendix F: List of the registrants to which the decision is addressed and the corresponding information requirements applicable to them

Registrant Name	Registration number	(Highest) Data requirements to be fufilled
[redacted]	[redacted]	[redacted]

Note: where applicable, the name of a third party representative (TPR) may be displayed in the list of recipients whereas the decision is sent to the actual registrant.