~~Confidential~~

Helsinki, 24 March 2022

Addressees
Registrant(s) as listed in the last Appendix of this decision

Date of submission of the dossier subject to this decision
30/05/2018

Registered substance subject to this decision ("the Substance")
Substance name: Esterification product of castor oil fatty acids and pentaerythritol
EC number: 948-027-5

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

DECISION ON A COMPLIANCE CHECK

Under Article 41 of Regulation (EC) No 1907/2006 (REACH), you must submit the information listed below, by the deadline of ***3 July 2023***.

Requested information must be generated using the Substance unless otherwise specified.

A. Information required from all the Registrants subject to Annex VII of REACH

1. Long-term toxicity testing on aquatic invertebrates (triggered by Annex VII, Section 9.1.1., column 2; test method: EU C.20./OECD TG 211);

2. Ready biodegradability (Annex VII, Section 9.2.1.1.; test method: OECD TG 301B/C/D/F or OECD TG 310) on relevant constituent(s)/fraction(s) of the Substance, as described under Appendix A, Section 2.

B. Information required from all the Registrants subject to Annex VIII of REACH

1. Long-term toxicity testing on fish (triggered by Annex VIII, Section 9.1.3., column 2; test method: OECD TG 210)

Reasons for the request(s) are explained in the appendices entitled "Reasons to request information required under Annexes VII to VIII of REACH", respectively.

Information required depends on your tonnage band

You must provide the information listed above for all REACH Annexes applicable to you, and in accordance with Articles 10(a) and 12(1) of REACH:

- the information specified in Annexes VII and VIII to REACH, for registration at 10-100 tpa.

How to comply with your information requirements

To comply with your information requirements you must submit the information requested by this decision in an updated registration dossier by the deadline indicated above. You must also update the chemical safety report, where relevant, including any changes to classification and labelling, based on the newly generated information.

You must follow the general testing and reporting requirements provided under the Appendix entitled "Requirements to fulfil when conducting and reporting new tests for REACH purposes". For references used in this decision, please consult the Appendix entitled "List of references".

Appeal

This decision, when adopted under Article 51 of REACH, may be appealed to the Board of Appeal of ECHA within three months of its notification to you. Please refer to http://echa.europa.eu/regulations/appeals for further information.

Failure to comply

If you do not comply with the information required by this decision by the deadline indicated above, ECHA will notify the enforcement authorities of your Member State.

Authorised[1] under the authority of Mike Rasenberg, 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 to request information required under Annex VII of REACH

1. Long-term toxicity testing on aquatic invertebrates

Short-term toxicity testing on aquatic invertebrates is an information requirement under Annex VII to REACH (Section 9.1.1.). Long-term toxicity testing on aquatic invertebrates must be considered (Section 9.1.1., Column 2) if the substance is poorly water soluble.

A substance is regarded as poorly water soluble if, for instance, it has a water solubility below 1 mg/L or below the detection limit of the analytical method of the test material (ECHA Guidance R.7.8.5).

Your registration dossier indicates that most of the constituents of the Substance are poorly water soluble (water solubility reported as 0.0661 mg/L). Therefore, long-term toxicity testing must be considered to fulfil the information requirement.

You have provided the following information:

i. OECD TG 211 key study with the analogue substance Fatty acids, C16-18 and C18-unsatd., esters with pentaerythritol (EC 288-305-7, CAS 85711-45-1)
ii. OECD TG 211 key study with the analogue substance 3-hydroxy-2,2-bis(hydroxymethyl)propyl (R)-12-hydroxyoleate (EC 201-095-3, CAS 78-22-8)

We have assessed this information and identified the following issues:

Under Annex XI, Section 1.5., the results to be read across must have an adequate and reliable coverage of the key parameters addressed in the corresponding test method referred to in Article 13(3), in this case OECD TG 211, and meet the requirements of OECD GD 23 (ENV/JM/MONO(2000)6/REV1) if the substance is difficult to test. Therefore, the following specifications must be met:

- a reliable analytical method for the quantification of the test material in the test solutions with reported specificity, recovery efficiency, precision, limits of determination (i.e. detection and quantification) and working range must be available;
- at least five test concentrations are used. If fewer than five test concentrations are used a justification must be provided.

Your registration dossier provides two OECD TG 211 both showing the following:

- no analytical monitoring of exposure was conducted;
- only one concentration (1mg/L, nominal) was tested and you have not provided a justification.

Based on the above, there are critical methodological deficiencies resulting in the rejection of the studies results. Specifically, information on analytical monitoring and analytical method is missing. Without analytical monitoring, it is not possible to determine whether and to what extent the tested organisms were exposed to the test material and thus the study is not reliable. Furthermore, without any justification, it is unclear why only one concentration of 1 mg/L was chosen for the limit test.

Therefore, the studies submitted in your adaptation do not provide an adequate and reliable coverage of some key parameters of OECD TG 211. On this basis, the information requirement is not fulfilled.

Study design

The Substance is difficult to test due to the low water solubility (0.0661mg/L) and adsorptive properties (estimated log Koc above 3.98). OECD TG 211 specifies that, for difficult to test substances, you must consider the approach described in OECD GD 23 or other approaches, if more appropriate for your substance. In all cases, the approach selected must be justified and documented. Due to the properties of Substance, it may be difficult to achieve and maintain the desired exposure concentrations. Therefore, you must monitor the test concentration(s) of the Substance throughout the exposure duration and report the results. If it is not possible to demonstrate the stability of exposure concentrations (i.e. measured concentration(s) not within 80-120% of the nominal concentration(s)), you must express the effect concentration based on measured values as described in OECD TG 211. In case a dose-response relationship cannot be established (no observed effects), you must demonstrate that the approach used to prepare test solutions was adequate to maximise the concentration of the Substance in the test solution.

For multi-constituents/UVCBs, the analytical method must be adequate to monitor qualitative and quantitative changes in exposure to the dissolved fraction of the test material during the test (e.g. by comparing mass spectral full-scan GC or HPLC chromatogram peak areas or by using targeted measures of key constituents or groups of constituents).

If you decide to use the Water Accommodated Fraction (WAF) approach, in addition to the above, you must:

- use loading rates that are sufficiently low to be in the solubility range of most constituents (or that are consistent with the PEC value). This condition is mandatory to provide relevant information for the hazard and risk assessment (ECHA Guidance, Appendix R.7.8.1-1, Table R.7.8-3);
- provide a full description of the method used to prepare the WAF (including, among others, loading rates, details on the mixing procedure, method to separate any remaining non-dissolved test material including a justification for the separation technique);
- prepare WAFs separately for each dose level (i.e. loading rate) and in a consistent manner.

2. Ready biodegradability

Ready biodegradability is an information requirement in Annex VII to REACH (Section 9.2.1.1.).

You have adapted this information requirement according to Annex XI, Section 1.2. of REACH (weight of evidence).

In support of your adaptation, you have provided:

i. An OECD 301B key study with the analogue substance Fatty acids, C16-18 and C18-unsatd., esters with pentaerythritol (EC 288-305-7, CAS 85711-45-1)
ii. An OECD 301B study with the analogue substance 3-hydroxy-2,2-bis(hydroxymethyl)propyl (R)-12-hydroxyoleate (EC 201-095-3, CAS 78-22-8)
iii. A weight of evidence study (QSAR with BIOWIN v4.10) with the analogue substance 3-hydroxy-2,2-bis(hydroxymethyl)propyl (R)-12-hydroxyoleate (EC 201-095-3, CAS 78-22-8)

Based on the presented sources of information, you argue that the available data gives sufficient information to conlude on the ready biodegradability of the Substance because: ready biodegradability was observed in both studies (i) and (ii) and because ready biodegradability was predicted by the QSAR calculation (iii).

Annex XI, Section 1.2 states that there may be sufficient weight of evidence 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.

According to ECHA Guidance R.4, a weight of evidence adaptation involves an assessment of the relative values/weights of the different sources of information submitted. The weight given is based on the reliability of the data, consistency of results/data, nature and severity of effects, and relevance and coverage of the information for the given regulatory information requirement. Subsequently, relevance, reliability, coverage, consistency and results of these sources of information must be balanced in order to decide whether they together provide sufficient weight to conclude that the Substance has or has not the (dangerous) property investigated by the required study.

Annex XI, section 1.2 requires that adequate and reliable documentation is provided to describe your weight of evidence adaptation.

You have not included a justification with an assessment, integration and weighing of the individual sources of information for relevance, reliability, coverage, consistency and results, and subsequently decided whether they together provide sufficient weight to conclude that the Substance has or has not the property investigated by the required study.

Irrespective of the above mentioned deficiencies on the documentation, which in itself could lead to the rejection of the adaptation, ECHA has assessed the provided sources of information.

The key element for the assessment of ready biodegradability is the ultimate aerobic biodegradation of an adequate test material, under a low inoculum concentration, and measured at sufficiently frequent intervals to allow the identification of the beginning and end of biodegradation.

These three pieces of information provide information on ultimate aerobic biodegradation. However, their reliability is significantly affected by the following issues:

The recommendations given in OECD "*Guidelines for the Testing of Chemicals, Revised Introduction To The OECD Guidelines For Testing Of Chemicals, Section 3 Part I: Principles And Strategies Related To The Testing Of Degradation Of Organic Chemicals*" (OECD, 2006b) must be considered for the assessment of ready biodegradability.

That OECD document indicates that ready biodegradability tests are intended for pure substances and are generally not applicable for complex mixtures or complex compositions containing different types of constituents, like UVCB. It further recommends that "*a case by case evaluation should take place on whether a biodegradability test on such a complex mixture would give valuable information regarding the biodegradability of the mixture as such (i.e. regarding the degradability of all the constituents) or whether instead an investigation of the degradability of carefully selected individual components of the mixture is required.*" For a UVCB substance, observed biodegradation may indeed represent the biodegradation of only some constituents.

Therefore, for UVCB substances, a single ready biodegradability test does not necessarily provide an unequivocal conclusion that all constituents can safely be regarded as readily biodegradable. As a consequence, for such substances, the result of a single test on the whole substance may not be sufficient to conclude on 'rapid degradability' for the purpose of classification and labelling (Article 10(a)(iv)), 'ready biodegradable' for the purpose of the

exposure assessment (Article 14(3)(c)), and 'not persistent/very persistent' for the purpose of the PBT/vPvB assessment (Article 14(3)(d)).

You submitted two ready biodegradability tests on two source substances and one QSAR prediction on one of the two source substances.

Source substance Fatty acids, C16-18 and C18-unsatd., esters with pentaerythritol (EC 288-305-7, CAS 85711-45-1) used for study (i) is a UVCB substance. No further information is provided to characterise further that source substance, in particular on the concentration ranges of its different constituents.

The second source substance, 3-hydroxy-2,2-bis(hydroxymethyl)propyl (R)-12-hydroxyoleate (EC 201-095-3, CAS 78-22-8), which is used for study (ii) and for the QSAR prediction (iii), is a well-defined substance. It is a monoester and it is a major constituent of the Substance.

The Substance is an organic UVCB substance that contains constituents with different degree of esterification (monoesters, diesters, triesters, tetraesters). Based on the information provided in section 1.2 of your dossier, the concentration ranges for the different constituents can be very variable.

Several substances have been used, either as test material or as basis for the QSAR prediction.

Study (i) has been performed with a source substance which is a UVCB substance. The detailed composition of that source substance is unknown. Therefore, it is not possible to conclude whether the constituents of that substance are homogeneous in terms of their biodegradability. Therefore, the biodegradation observed in study (i) is not sufficient to conclude that all the constituents of that source substance are readily biodegradable. Consequently, the results from study (i) do not demonstrate ready biodegradability of all the constituents of the Substance.

Study (ii) and the QSAR prediction (iii) cover only one of the possible monoester constituents of the Substance. Different degree of esterification can affect differently the biodegradability of the different constituents of the Substance. In particular, monoester constituents are expected to be more biodegradable compared to di-, tri- or tetraester constituents. Therefore, you have not investigated the degradability of carefully selected individual constituents of the Substance which, for example, would represent a worst-case in respect to their biodegradability. Therefore, study (ii) and the QSAR prediction (iii) does not demonstrate either ready biodegradability of all the constituents of the Substance.

The three pieces of information you have provided relate to ultimate aerobic biodegradation. However, these three pieces of information alone or considered together do not provide reliable information to conclude on the ready biodegradability of all the constituents of the Substance. Therefore, your adaptation is rejected and the information requirement is not fulfilled.

Study design

For the reasons provided above, testing on the Substance as a whole does not fulfil the information requirement. For the generation of information on ready biodegradability, you must consider the level of information required for the purposes of classification and labelling and, if applicable to your registration, the PBT/vPvB assessment and the exposure assessment/risk characterisation. In order to conclude on which of constituents of the

Substance are and which are not readily biodegradable, you may have to consider conducting more than one study using selected individual constituents and/or fractions. If you choose to test one (or more) fraction(s) of the Substance, you must provide a justification that their constituents within chosen fraction(s) are similar enough so that similar degradation kinetics can be assumed. If you decide to conduct a single study in order to prove that all constituents of the Substance are readily biodegradable, you must provide a justification that the selected constituent/fraction can be considered a reasonable worst-case for the Substance as a whole in terms of degradation kinetics.

Justification for selection of relevant constituent and/or fractions for the testing, must consider degradation kinetics of constituents of the Substance based, as minimum, on the similarity/differences of the chemical structures and the physico-chemical properties of constituents of the Substance. For that purpose, tools and approaches mentioned in ECHA Guidance R.7b and R.11 should be considered.

The test guideline must be applicable to the properties of the test item. The constituents of the Substance are poorly water soluble (water solubility < 0.0661 mg/L). For poorly soluble substances, test guidelines OECD TG 301 B, C, D and F, as well as OECD TG 310 can apply.

Appendix B: Reasons to request information required under Annex VIII of REACH

1. Long-term toxicity testing on fish

Short-term toxicity testing on fish is an information requirement under Annex VIII to REACH (Section 9.1.3.). Long-term toxicity testing on fish must be considered (Section 9.1.3., Column 2) if the substance is poorly water soluble.

You have provided two OECD TG 203 studies on two analogue substances (Fatty acids, C16-18 and C18-unsatd., esters with pentaerythritol (EC 288-305-7, CAS 85711-45-1); and 3-hydroxy-2,2-bis(hydroxymethyl)propyl (R)-12-hydroxyoleate (EC 201-095-3, CAS 78-22-8)), but no information on long-term toxicity on fish for the Substance.

We have assessed this information and identified the following issue:

Poorly water soluble substances require longer time to reach steady-state conditions. As a result, the short-term tests does not give a true measure of toxicity for this type of substances and the long-term test is required. A substance is regarded as poorly water soluble if, for instance, it has a water solubility below 1 mg/L or below the detection limit of the analytical method of the test material (ECHA Guidance R.7.8.5).

As already explained under Section A.1, the Substance is poorly water soluble and information on long-term toxicity on fish must be provided.

Study design

To fulfil the information requirement for the Substance, the Fish, Early-life Stage Toxicity Test (test method OECD TG 210) is the most appropriate (ECHA Guidance R.7.8.2.).

OECD TG 210 specifies that for difficult to test substances OECD GD 23 must be followed. As already explained above, the Substance is difficult to test. Therefore, you must fulfil the requirements described in 'Study design' under Section A.1.

Appendix C: Requirements to fulfil when conducting and reporting new tests for REACH purposes

A. Test methods, GLP requirements and reporting

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

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

3. 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 on How to report robust study summaries[2].

B. Test material

1. Selection of the Test material(s)

   The Test Material used to generate the new data must be selected taking into account the following:
   - the boundary composition(s) of the Substance,
   - the impact of each constituent on the test results for the endpoint to be assessed. For example, if a constituent of the Substance is known to have an impact on (eco)toxicity, the selected Test Material must contain that constituent.

2. Information on the Test Material needed in the updated dossier
   - You must report the composition of the Test Material selected for each study, under the "Test material information" section, for each respective endpoint study record in IUCLID.
   - The reported composition must include all constituents of each Test Material and their concentration values and other parameters relevant for the property to be tested.

This information is needed to assess whether the Test Material is relevant for the Substance.

Technical instructions on how to report the above is available in the manual on How to prepare registration and PPORD dossiers[3].

[2] https://echa.europa.eu/practical-guides
[3] https://echa.europa.eu/manuals

Appendix D: Procedure

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

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

The compliance check was initiated on 04 March 2021.

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

In your comments you agreed to the draft decision. ECHA took your comments into account and did not amend the request(s).

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: List of references - ECHA Guidance[4] and other supporting documents

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 where relevant.

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 where relevant.

Read-across assessment framework (RAAF, March 2017)[5]

RAAF - considerations on multiconstituent substances and UVCBs (RAAF UVCB, March 2017)[6]

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
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.

Data sharing
Guidance on data-sharing (version 3.1, January 2017), referred to as ECHA Guidance on data sharing in this decision.

OECD Guidance documents[7]

[4] https://echa.europa.eu/guidance-documents/guidance-on-information-requirements-and-chemical-safety-assessment
[5] https://echa.europa.eu/support/registration/how-to-avoid-unnecessary-testing-on-animals/grouping-of-substances-and-read-across
[6] https://echa.europa.eu/documents/10162/13630/raaf_uvcb_report_en.pdf/3f79684d-07a5-e439-16c3-d2c8da96a316
[7] http://www.oecd.org/chemicalsafety/testing/series-testing-assessment-publications-number.htm

Guidance Document on aqueous–phase aquatic toxicity testing of difficult test chemicals – No 23, referred to as OECD GD 23.

Guidance document on transformation/dissolution of metals and metal compounds in aqueous media – No 29, referred to as OECD GD 29.

Guidance Document on Standardised Test Guidelines for Evaluating Chemicals for Endocrine Disruption – No 150, referred to as OECD GD 150.

Guidance Document supporting OECD test guideline 443 on the extended one-generation reproductive toxicity test – No 151, referred to as OECD GD 151.

Appendix F: Addressees of this decision and their corresponding information requirements

You must provide the information requested in this decision for all REACH Annexes applicable to you.

Registrant Name	Registration number	Highest REACH Annex applicable to you
[redacted]	[redacted]	[redacted]

Where applicable, the name of a third party representative (TPR) may be displayed in the list of recipients whereas ECHA will send the decision to the actual registrant.