

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference SASOL US-1330-PCT	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/US2021/018198	International filing date (<i>day/month/year</i>) 16.02.2021	Priority date (<i>day/month/year</i>) 19.02.2020	
International Patent Classification (IPC) or national classification and IPC INV. A01N25/30			
Applicant Sasol Chemicals GmbH			
1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of <u>9</u> sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: a. ☒ (<i>sent to the applicant and to the International Bureau</i>) a total of <u>11</u> sheets, as follows: ☒ sheets of the description, claims and/or drawings which have been amended and/or sheets containing rectifications authorized by this Authority, unless those sheets were superseded or cancelled, and any accompanying letters (see Rules 46.5, 66.8, 70.16, 91.2, and Section 607 of the Administrative Instructions). ☐ sheets containing rectifications, where the decision was made by this Authority not to take them into account because they were not authorized by or notified to this Authority at the time when this Authority began to draw up this report, and any accompanying letters (Rules 66.4bis, 70.2(e), 70.16 and 91.2). ☐ superseded sheets and any accompanying letters, where this Authority either considers that the superseding sheets contain an amendment that goes beyond the disclosure in the international application as filed, or the superseding sheets were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in item 4 of Box No. I and the Supplemental Box (see Rule 70.16(b)). b. ☐ (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing, in the form of an Annex C/ST.25 text file, as indicated in the Supplemental Box Relating to Sequence Listing (see paragraph 3ter of Annex C of the Administrative Instructions).			
4. This report contains indications relating to the following items: ☒ Box No. I Basis of the report ☐ Box No. II Priority ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability ☐ Box No. IV Lack of unity of invention ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement ☐ Box No. VI Certain documents cited ☒ Box No. VII Certain defects in the international application ☐ Box No. VIII Certain observations on the international application			
Date of submission of the demand 10.12.2021	Date of completion of this report 24.05.2022		
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Fax: +49 89 2399 - 4465	Authorized officer Hateley, Martin Telephone No. +49 89 2399-5638 		

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US2021/018198

Box No. I Basis of the report

1. With regard to the **language**, this report is based on
- ☒ the international application in the language in which it was filed
 - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3(a) and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4(a))
 - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a) and (b))
2. With regard to the **elements*** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

Description, Pages

1-18 as originally filed

Claims, Numbers

1-24 filed with the demand for preliminary international examination

Drawings, Sheets

1/13-13/13 as originally filed

- ☐ a sequence listing - see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since either they are considered to go beyond the disclosure as filed, or they were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in the Supplemental Box (Rules 70.2(c) and (c-bis)):
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
5. ☐ This report has been established:
- ☐ taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rules 66.1(d-bis) and 70.2(e)).
 - ☐ without taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91(Rules 66.4bis and 70.2(e)).

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/US2021/018198

6. ☒ With regard to top-up searches (Rules 66.1 *ter* and 70.2(f)):
- ☒ A top-up search was carried out by this Authority on 18.01.2022 (all discovered documents are listed in the Supplemental Box Relating to Top-up Search).
 - ☐ Additional relevant documents have been discovered during the top-up search.
 - ☐ No top-up search was carried out by this Authority because it would serve no useful purpose.
7. ☐ Supplementary international search report(s) from Authority(ies) has/have been received and taken into account in establishing this report (Rule 45bis.8(b) and (c)).

* If item 4 applies, some or all of those sheets may be marked "superseded".

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	<u>1-24</u>
	No: Claims	
Inventive step (IS)	Yes: Claims	<u>1-24</u>
	No: Claims	
Industrial applicability (IA)	Yes: Claims	<u>1-24</u>
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

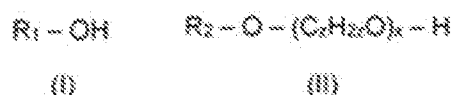
Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to documents **D1-D5** as cited in the International Search Report; the numbering will be adhered to during the rest of the procedure:

- D1** WO 2015/103192 A1 (Rhodia Operations [FR]) 9 July 2015
- D2** WO 2015/091617 A1 (BASF SE [DE]) 25 June 2015
- D3** EP 0 968 649 A1 (Du Pont [US]) 5 January 2000
- D4** WO 99/26472 A1 (Henkel Corp [US]) 3 June 1999
- D5** EP 1 875 803 A2 (Oxiteno SA Ind e Comercio [BR]) 9 January 2008

The patent application relates to a crop husbandry composition comprising (i) an alcohol or mixture of alcohols of the formula (I); and (ii) an alcohol alkoxylate or mixture of alcohol alkoxylates of the formula (II), wherein R_1 and R_2 are independently linear or branched C_{20} - C_{32} alkyl groups; $z = 2 - 3$; $x = 1 - 150$, wherein the mass ratio of the alcohol of formula (I) to the alcohol alkoxylate of formula (II) is between 99:1 to 51:49



Furthermore the patent application also relates to a crop husbandry emulsion comprising the crop husbandry composition and water; to a field solution comprising the crop husbandry composition and 90 - 99.9 wt.% water; to a method for cultivation, treatment and/or protection of plants, crops, seeds, plant propagation material, aquatic environments, soil with the crop husbandry emulsion or the field solution as well as to the use of the crop husbandry composition for cultivation, treatment, and/or protection of plants, crops, seeds, plant propagation material, aquatic environments or soil.

1. Amendments (Art. 34 PCT)

Amended claims 1-24 filed with the demand for Preliminary International Examination do not appear to introduce subject-matter which extends beyond the content of the application as originally filed, and are thus considered to conform to the requirements of Article 34(2)(b) PCT.

1.1 Amended claim 1 is based on original claim 1 in which (i) the definition of the total number of carbon atoms in R_1 and R_2 has been modified to 20 to 32 (original claim 2; page 2, lines 27-28); (ii) the mass ratio of the alcohol of formula (I) to the alcohol alkoxylate of formula (II) has been defined to be 99:1 to 51:49 (original claim 14). Amended claim 2 finds a basis in the description (page 2, lines 30). Amended claim 13 is based on original claim 13 in which the unclear term '*or any other active ingredients useful in crop husbandry*' has been deleted. Amended claim 14 is based on original claim 14 in which the mass ratio of formula (I) to formula (II) introduced into amended claim 1 has been deleted. Amended claims 21-22 and 24 are based on original claims 21-22 and 24, respectively, from which the unclear term '*or the like*' has been deleted.

1.2 Amended claims 3-13, 15-20 and 23 correspond to original claims 3-13, 15-20 and 23, respectively.

2. Novelty (Art. 33(2) PCT)

The patent application meets the criteria of Article 33(1) PCT, because the subject-matter of amended claims 1-24 is considered to be novel in the sense of Article 33(2) PCT.

2.1 Amended claims 1-14 of the patent application are directed towards an entity, that is a crop husbandry composition, whereby the term '*crop husbandry*' has been understood to be the '*practice of combining agricultural crops or animal husbandry with the maintenance and cultivation of trees on the same patch of land*'. The novelty of a composition is determined solely by its components, with the intended use of the composition only constituting a limiting technical feature in terms of defining the composition to be in a form suitable for the said use. Thus the composition of amended claims 1-14 is regarded as a composition comprising the defined components which is in a form *suitable for use in crop husbandry* (PCT Guidelines 5.21).

2.2 Document **D1** discloses formulations for use in crop protection comprising a fatty alcohol (R_1 = linear or branched C_8 - C_{24} alkyl) falling within the scope of formula (I) of the patent application. Although the formulations of D1 may also comprise a surfactant, including a non-ionic surfactant such as an alcohol ethoxylate, there does not appear to be an explicit disclosure of a fatty alcohol alkoxylate of formula (II) as defined in the amended claims of the patent application.

2.3 Document **D2** discloses a formulation for use in crop protection comprising a fatty alcohol falling within the scope of formula (I) of the patent application (R_1 = C_{12} - C_{22} fatty alcohol, including arachidyl alcohol, a C_{20} -linear saturated alcohol), whereby this formulation may also comprise a fatty alcohol alkoxylate (page 2, lines 36-38; page 7,

line 35 - page 8, line 9), including a C₆-C₂₂ fatty alcohol alkoxylate and in particular a C₁₄-C₂₀ fatty alcohol (EO)₂₋₆ ethoxylate (page 13, lines 23-32), falling within the scope of formula (II) of the amended claims of the patent application. Moreover the formulation may comprise an agrochemically active ingredient, especially dicamba which possesses an aromatic ether moiety. Although the general combination of a fatty alcohol and a fatty alcohol ethoxylate is therefore disclosed, after careful consideration of the arguments provided by the Applicant, the combination of the *specific* fatty alcohol and *specific* fatty alcohol alkoxylate as defined in amended claim 1 of the patent application with respect to the defined chain length of R₁ and R₂ cannot be considered to be clearly and unambiguously disclosed since multiple choices in D2 are required to arrive at such a combination. Furthermore neither does the mass ratio of the alcohol of formula (I) to the fatty alcohol alkoxylate of formula (II) appear to be mentioned, nor do formulations comprising a fatty alcohol and a fatty alcohol alkoxylate appear to be exemplified in D2.

2.4 Document **D3** discloses formulations for use in crop protection comprising fatty alcohol ethoxylates falling within the scope of formula (II) of the patent application (linear or branched C₈-C₂₆ alkyl; z = 2; x = 6 - 50). The formulations of D3 do not appear to comprise a fatty alcohol as defined in formula (I) of the amended claims of the patent application.

2.5 Document **D4** discloses further formulations for use in crop protection comprising a fatty alcohol ethoxylate in which R is a C₈-C₂₆ alkyl group. Although the ethoxylation number is not explicitly disclosed, it would appear credible that it lies within the broad range of 1-150 defined by x in formula (II) of the patent application. The formulations of D4 do not however appear to comprise a fatty alcohol as defined in formula (I) of the amended claims of the patent application.

2.6 Document **D5** discloses formulations for use in crop protection comprising a pesticide, a C₆-C₂₀ straight, branched, saturated or unsaturated fatty alcohol and an alcohol ethoxylate having a C₁-C₃₀ alkyl group. A formulation comprising an alcohol of formula (I) and an alcohol alkoxylate of formula (II) as defined in the amended claims of the patent application does not appear to be mentioned in D5.

3. Inventive step (Art. 33(3) PCT)

After careful consideration of the arguments submitted by the Applicant, the patent application is deemed to meet the criteria of Article 33(1) PCT, because the subject-matter of amended claims 1-24 is considered to involve an inventive step (Article 33(3) PCT).

3.1 Document **D2** may be regarded as the closest prior art to the subject-matter of the amended claims of the patent application, as it discloses crop protection formulations comprising a fatty alcohol and a fatty alcohol alkoxylate (*i.e. same technical field of crop protection, same aim of providing enhanced efficacy of crop protection formulations, both main technical features in common*).

3.2 The difference between the subject-matter of D2 and that of the amended claims of the patent application is considered to lie in (i) the combination of the defined fatty alcohol with the defined fatty alcohol alkoxylate (Patent application: Combination of a fatty alcohol and fatty alcohol alkoxylate having chain length of R_1 and $R_2 = C_{20}-C_{32}$ vs. D2: No clearly disclosed combination of a fatty alcohol and fatty alcohol alkoxylate each possessing the defined $C_{20}-C_{32}$ chain length); and (ii) the mass ratio of the alcohol of formula (I) to the alcohol alkoxylate of formula (II) (Patent application: 99:1 to 51:49 as defined in amended claim 1 vs. D2: no mass ratio defined).

3.3 The technical effect of this difference appears to be the enhanced thermal and emulsion stability, rheological, foaming and UV absorbance properties of the formulation comprising the combination of the longer chain length ($C_{20}-C_{32}$) fatty alcohols and fatty alcohol alkoxylates as shown in the examples of the patent application. In this respect the comparative composition 1 appears to be close to the disclosure of D2 and thus enables an effective (internal) comparison.

3.4 The objective technical problem to be solved is therefore considered to be the provision of a composition suitable for use in crop husbandry and crop protection which displays increased thermal and emulsion stability, rheological, foaming and UV absorbance properties.

3.5 The solution to this problem presented in the patent application is the composition defined in amended claim 1 comprising a combination of a fatty alcohol (I) and a fatty alcohol alkoxylate (II) each having a chain length of $C_{20}-C_{32}$ and present in a mass ratio of 99:1 to 51:49.

3.6 The skilled person is aware of the use of both fatty alcohols and fatty alcohol alkoxylates falling within formulae (I) and (II) as adjuvants in crop protection formulations (*e.g.* D1 and D3). Furthermore an adjuvant composition for use in crop protection comprising both a fatty alcohol and a fatty alcohol alkoxylate is explicitly disclosed in D2, whereby although (i) some of the fatty alcohols mentioned, including arachidyl alcohol (C_{20}), heneicosyl alcohol (C_{21}) and benhenyl alcohol (C_{22}), fall under formula (I) of amended claim 1; and (ii) the preferred $C_{14}-C_{20}$ fatty alcohol (EO)₂₋₆ ethoxylate overlap with the fatty alcohol alkoxylates of formula (II), no combination of the *specific* $C_{20}-C_{32}$ fatty alcohols and the *specific* $C_{20}-C_{32}$ fatty alcohol alkoxylates is

disclosed. To the contrary the preferred fatty alcohol mixtures of D2 comprise shorter chain fatty alcohols having C₁₆-alkyl(cetyl) and C₁₈-oleyl(oleyl) chains, thus directing the skilled person away from the longer chains defined in amended claim 1, such that even if the skilled person *could* have chosen R to be an alkyl group and the carbon length of the alkyl group to be C₂₀ to C₃₂, he would not only have received no motivation to do so but would have been taught away therefrom. Furthermore no examples comprising any combination of a fatty alcohol and a fatty alcohol alkoxylate, let alone those with C₂₀-C₃₂ chains as defined in amended claim 1 of the patent application, are exemplified in D2. In contrast the examples of the patent application appear to show improved properties for the combination of a fatty alcohol and a fatty alcohol alkoxylate having chain lengths of are chosen to be C₂₀-C₃₂ compared to mixtures comprising the preferred C₁₆ and C₁₈ chain of the patent applications. Since therefore nothing points the skilled person to chose the fatty alcohol and fatty alcohol alkoxylates defined in amended claim 1 of the patent application and that such a choice appears to result in improved properties, an inventive step can be acknowledged for the subject-matter of amended claims 1-14 of the patent application directed to the crop husbandry composition, for the subject-matter of amended claims 15-18 directed to the crop husbandry emulsion, for the subject-matter of amended claims 19-20 directed to the field solution, for the subject-matter of method amended claims 21-24, and for the subject-matter of amended use claim 24 (Art. 33(3) PCT).

4. Industrial applicability (Art. 33(4) PCT)

Industrial applicability is acknowledged for the subject-matter of amended claims 1-24.

Re Item VII

Certain defects in the international application

1. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in documents D1-D5 has not been mentioned in the description, nor have these documents been identified therein.
2. References to other documents in international applications may relate directly to the disclosure of the invention. If the matter the documents refer to is essential to satisfy the requirements of Art. 5 PCT, this matter should be explicitly described and incorporated into the description since the patent specification must be self-contained with regard to the essential features of the invention, that is it should be capable of being understood

without reference to any other documents. As a consequence, expressions including '*..incorporated herein by reference.*' (page 1, lines 6-7) should not have been used (PCT Guidelines 4.26).

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INTELLECTUAL PROPERTY LAW
INCLUDING PATENT, TRADEMARK, COPYRIGHT
LAW, UNFAIR COMPETITION AND RELATED MATTERS

3 February 2022

European Patent Office
80298 Munich
Germany

PCT/US2021/018198
Our Ref: Sasol US-1330-PCT
International Filing Date 16 February 2021
SASOL CHEMICALS GMBH

Re: Response to the Written Opinion of the International Preliminary
Examination Authority

Dear Sir/Madam:

The Written Opinion dated 26 January 2022 is duly noted. Comments in response to the same are provided herein.

Inventive Step

The examiner has found that the claims are novel over the prior art.

The examiner found that the claims lack inventive step over D2 which is considered to be the closest prior art. The examiner is of the opinion that the difference between the subject-matter of D2 and that of the amended claims of the patent application is considered to lie in the mass ratio of the alcohol of formula (I) to the alcohol ethoxylate of formula (II) (patent application: 99:1 to 51:49 as defined in amended claim 1 vs. D2: no mass ratio defined). The examiner is of the opinion that no clear and unambiguous technical effect of this difference can be discerned from the patent application in the absence of appropriate experimental data comparing the mass ratios of the alcohol of formula (I) to the alcohol ethoxylate of formula (II) falling within and outside of the defined range of amended claim 1.

The applicant respectfully submits that **the mass ratio** of the alcohol of formula (I) to the alcohol ethoxylate of formula (II) (patent application: 99:1 to 51:49 as defined in amended claim 1 vs. D2: no mass ratio defined) **is not the only difference between D2 and the claims** of the present application. It is submitted that for the reasons set out below that **D2 also does not disclose the specific combination the specified alcohol of formula (I) and the specified alcohol alkoxylate of formula (II)** as set out in claim 1.

Although (as set found by the examiner in item 2.3 of the written opinion) D2 discloses an alcohol of formula (I) and an alcohol alkoxylate of formula (II) as set out in claim 1, it is submitted that D2 **does not disclose the specific combination** of the **specific** alcohol of formula (I) and the **specific** alcohol alkoxylate of formula (II) as set out in claim 1.

It is not disputed that D2 discloses arachidyl alcohol (C20 saturated linear fatty alcohol) as a preferred fatty alcohol which falls under formula (I) in claim 1. However, it is pointed out that in the disclosure on page 2, lines 23 – 25 and in claim 4 of D2 arachidyl alcohol is not listed as the only more preferred alcohol, but it is **listed as one alcohol in a list of more preferred alcohols**, namely the group consisting of cetyl alcohol, myristic alcohol, arachidyl alcohol and oleyl alcohol. Only arachidyl alcohol falls within the scope of formula (I) of claim 1 which claims C20 to C32 linear or branched alkyl alcohols. That is, these disclosures in D2 do not direct the person skilled in the art directly and specifically only to arachidyl alcohol (or other heavier alcohols falling within the scope of claim 1), but to a list of alcohols **wherein the other alcohols (making out the majority in the list) do not fall within the scope of formula (I) of claim 1**. From the disclosure on page 3, lines 9 to 18 and example 1 (especially page 24, lines 5 to 7) it is seen that the preferred fatty alcohol of D2 comprises a **combination of fatty alcohols (mostly oleyl alcohol, a C18 unsaturated alcohol)** wherein a **very small amount** (less than 3 wt% in the example, or a maximum of 6 wt% in the general disclosure) **is arachidyl alcohol** which falls within the scope of claim 1. That is, the full disclosure in D2 teaches a person skilled in the art that arachidyl alcohol is an minor component in D2 which is not used in high ratios, but is used in combination (small volumes) with other lighter alcohols (particularly oleyl alcohol), which lighter alcohols make up the major part of the alcohol

and which lighter alcohols do not fall within the scope of formula (I) of claim 1. The same argument applies to the disclosure of arachidyl alcohol (C20), heneicosyl alcohol (C21) and behenyl alcohol (C22) on page 13, lines 15 to 18, where these three alcohols are mentioned in a list of alcohols where all of the other the alcohols are lighter alcohols and not alcohols of formula (I) of claim 1. The same argument also applies to the disclosure of C12 to C22 fatty alcohols in D2. These can again be considered to be a very long list of alcohols wherein by far most of the alcohols (all those that are unsaturated and also all those that are lighter than C20) do not fall within the scope of formula (I) of claim 1.

With regard to the disclosure of alcohol alkoxylates of formula (II) of claim 1 in D2, it is again not disputed that D2 discloses preferred C14 -20 fatty alcohol (EO)₂₋₆ ethoxylates as set out on page 13, lines 23 – 32 and that when the chain length is chosen to be C20 that it **may** constitute an alcohol alkoxylate of formula (II) of claim 1. The alkoxylated fatty alcohols disclosed in D2 includes (see page 7, line 36 to page 8) compounds wherein the equivalent of R2 in claim 1 is an alkyl or alkenyl. Alkenyl is not a linear or branched alkyl as required by claim 1 and therefore does not fall within the scope of claim 1. Cyclic alkyls also do not fall within the scope of claim 1 which requires that R2 be a linear or branched alkyl. Where the equivalent R2 is alkyl in D2, D2 discloses that it is preferably C14 to C20 alkyl while amended claim 1 claims C20 to C32 alkyl. That is, the fatty alcohol alkoxylates in D2 which include an alkyl group overlap only partially (and very limited) with the range of C20 to C32 alkyls claimed in claim 1 and by far most of the range disclosed in D2 (C14 to C19) does not overlap with the claimed range. Furthermore, when the full disclosure of D2 is considered, D2 teaches that more preferably the equivalent of R2 in D2 is C16 to C18 alkyl or alkenyl, and oleyl (C18 alkenyl) and cetyl (C16 alkyl) are especially preferred (see page 8, lines 1 to 6). Thus, the more preferred and the especially preferred alcohol alkoxylates disclosed in D2 do not fall within the scope of claim 1 with the result that the most preferred embodiments of D2 direct away from the alcohol alkoxylates of amended claim 1. That is, the disclosure in D2 does not direct a person skilled in the art directly and specifically only to a C20 alcohol alkoxylate of formula (II) as set out in claim 1, but to a very long list of alcohol alkoxylates wherein all alkenyl and cyclic alkyl compounds and all C14 to C19 compounds (that is all compounds except C20) fall outside the scope of formula (II) of claim 1. Furthermore, as

set out on page 8, lines 5 and 6 of D2 is taken in consideration, it is seen that the most preferred teachings of D2 direct the person skilled in the art to C16 to C18 alkyl/alkenyl (all which fall outside the scope of claim 1), and especially oleyl and/or cetyl which also fall outside the scope of claim 1.

Although D2 discloses in general alcohols which may fall within the scope of amended claim 1 and alcohol alkoxylates which may fall within the scope of amended claim 1, **D2 does not disclose the specific combination of the specific alcohols claimed in amended claim 1 and the specific alcohol alkoxylates of amended claim 1. D2 discloses a list of alcohols and a list of alcohol alkoxylates wherein most of the alcohols and alcohol alkoxylates fall outside the parameters of claim 1.** That is, D2 does not clearly and unambiguously disclose (i) the combination of features of the specific alcohols and the specific alcohol alkoxylates as claimed in claim 1, and (ii) it also does not disclose the combination in the ratio (already confirmed by the examiner) as set out in amended claim 1. For these reasons amended claim 1 is novel over D2.

In order to arrive at the present invention from the teachings of D2 a person skilled in the art will have to select an alcohol alkoxylate of formula (II) as claimed in claim 1 from the long list of alcohol alkoxylates disclosed in D2, wherein the list of in D2 has a very minor overlap with the alcohol alkoxylates of claim 1 (only C20 out of C14 to C20, and only linear or branched alkyls from all alkyls and alkenyls). This is not an obvious selection since there is no teaching, suggestion or motivation in D2 to make this specific selection. In fact, the more preferable alcohol alkoxylates in D2 are C16 to C18 alkyl/alkenyl alkoxylates which fall outside the scope of claim 1 and the most preferred compounds of D2 are oleyl (a C18 alkenyl)/cetyl (a C16 alkyl) alkoxylate which fall outside the scope of claim 1.

Furthermore, a person skilled in the art would also have to select specifically arachidyl alcohol (or heneicosyl alcohol or behenyl alcohol) from the list of alcohols disclosed in D2 (see discussion above), where the rest of the alcohols in the list do not fall within the scope of claim 1 and it would have to be included in sufficiently high amounts to satisfy the ratios claimed in claim 1. As discussed above, this goes against the disclosure in D2 where arachidyl alcohol is included as a minor component in combination with oleyl alcohol (C18 unsaturated alcohol).

It is submitted that from the teachings of D2 the selection of an alcohol of formula (I) and an alcohol alkoxylate of formula (II) as claimed in claim 1 is not an obvious selection since a selection has to be made out of two lists and the full disclosure in D2 does not direct a person skilled in the art to the alcohol of claim 1 in sufficient amounts to satisfy the ratio as claimed in claim 1 or to the heavier alcohol alkoxylates of claim 1.

Furthermore, D2 provides no incentive to use an alcohol alkoxylate in combination with an alcohol of amended claim 1. In D2 it is optional to include an alkoxylated fatty alcohol. It is even emphasized on page 8, line 19 that in one embodiment an alkoxylated fatty alcohol is not included. No advantage of including an alkoxylated fatty alcohol is disclosed in D2 and the example of D2 does not include an alkoxylated fatty alcohol. Therefor D2 provides no incentive for including an alkoxylated fatty alcohol.

In view of the above it is submitted that that the combination of heavier alcohols and alcohol alkoxylates as claimed in claim 1 is novel and inventive over the teachings of D2. This combination also results in unexpected advantages not suggested in the prior art.

As set out above one of the main differences between amended claim 1 and D2 is that D2 does not disclose an alcohol with a R1 group as claimed in claim 1 in combination with an alcohol alkoxylate with a R2 group as claimed in claim 2. In the experimental data of the present application R1 and R2 of Comparative Composition 1 does not fall within the scope of amended claim 1, while R1 and R2 of inventive Compositions 2 and 3 do fall within the scope of claim 1. The experimental data presented in the present application shows that the compositions of the present invention (Composition 2 and Composition 3) as used in corresponding emulsions EW2 and EW3, and field solutions FS2 and FS3, have clearly superior thermal, emulsion stability, rheological, foaming, UV absorbance, and coating properties over Comparative Composition 1, emulsion comparative EW1 and field solution comparative FS1.

Thus, the crop husbandry composition of claim 1 solves a different problem from that of D2 (in D2 it is drift control). There is no indication in the prior art that the advantages of the present invention can be achieved by using a heavier alcohol with a

R1 group as claimed in amended claim 1 in combination with a heavier alcohol alkoxylate with a R2 group as claimed in amended claim 1.

That is, the specific combination of heavier alcohols and alcohol alkoxylates claimed in claim 1 result in unexpected advantages over the combination of lighter alcohols or alcohol alkoxylates (not falling within the scope of claim 1) which is not predictable from the disclosure in the prior art.

It is submitted that the examples and comparative examples of the present invention also show a technical advantage over the disclosure made in D2. As discussed above, the distinction between D2 and claim 1 of the present application resides in the specific combination of heavier alcohols and heavier alcohol alkoxylates as claimed in claim 1 and that they are combined in a mass ratio from 99:1 to 51:49. The preferred alcohol in D2 (Antidrift A in the examples) comprises a mixture of alcohols comprising 87 to 95 wt% oleyl alcohol (a C18 unsaturated alcohol), 2 to 10 wt% cetyl alcohol (a C16 alkyl alcohol), less than 2 wt% myristic alcohol (a C14 alcohol) and less than 3 wt% arachidyl alcohol (a C20 alkyl alcohol). That is, the Antidrift A alcohol of D2 comprises more than 97 wt% C14 to C18 alcohol (lighter alcohols all of which falls outside the scope of claim 1) and less than 3 wt% of arachidyl alcohol which falls within the scope of claim 1. Comparative Alcohol A in Comparative Composition 1 of the present application has a similar composition of lighter alcohols (61.5 wt% C16 alcohol and 35.3 wt% C18 alcohol). Alcohol A of the present application is different from Antidrift A of D2 in that in Antidrift A the ratio of C18 to C16 is different from that in Alcohol A in the present application and Antidrift A of D2 includes a very low amount (less than 3 wt%) of arachidyl alcohol (a C20 alkyl alcohol), whereas Alcohol A in the present application includes no C20 or heavier alcohol. However, for purposes of the present invention it is submitted that Antidrift A of D2 is sufficiently similar to Alcohol A of the present application in that in both cases nearly 97 wt% of the compositions comprise alcohols which are lighter than the C20 to C32 alcohols claimed in the present application.

D2 does not disclose any examples where the alcohol is combined with an alcohol alkoxylate. However, as set out above, D2 teaches that the most preferred alcohol alkoxylate is oleyl (C18 alkenyl) alcohol alkylate and/or cetyl (C16 alkyl) alcohol alkylate. This composition is again similar to Comparative Composition 1 of the present invention

which includes a C16/C18 alcohol ethoxylate. That is, it is submitted that a person skilled in the art considering D2 and deciding to include an alcohol alkoxylate in addition to an alcohol will prepare an alcohol and alcohol alkoxylate composition similar to Comparative Composition 1 in the present application which consists essentially of lighter alcohols and lighter alcohol alkoxylates (than claimed in claim 1 of the present application). It is submitted that a person skilled in the art would understand that such a composition made up from the teachings in D2 will have the same disadvantages as Comparative Composition 1 of the present application compared to Inventive Compositions 2 and 3 of the present application as discussed above. It is submitted that it will be understood that at levels below 3 wt% of arachidyl alcohol the concentration of this alcohol is too low to have any significant effect resulting in the advantages of the present application.

In view of the above it is submitted that the examples and comparative example of the present application also illustrates the advantages of the present invention over that of D2.

Summary

It is respectfully requested to issue an IPRP acknowledging novelty and inventiveness of the subject matter of all claims. If questions remain, issuance of a written opinion is requested whereupon applicant can respond.

Respectfully submitted,

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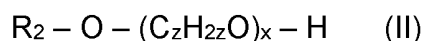
REPLACEMENT SHEET

CLAIMS

1. A crop husbandry composition, the crop husbandry composition comprising:
an alcohol or mixture of alcohols of the formula (I)



and an alcohol alkoxylate or mixture of alcohol alkoxylates of the formula (II)



wherein:

R_1 and R_2 are independently of one another a linear or branched alkyl, each having a total number of carbon atoms from 20 to 32, z has a value of 2 or 3, and x has a value of from 1 to 150, and

wherein the alcohol or mixture of alcohols and the alcohol alkoxylate or mixture of alcohol alkoxylates are in a mass ratio of from about 99:1 to about 51:49.

2. The crop husbandry composition according to claim 1, wherein R_1 and R_2 are the same.
3. The crop husbandry composition according to claim 1 or claim 2, wherein z is 2, so that the alcohol alkoxylate of formula (II) is an alcohol ethoxylate or the mixture of alcohol alkoxylates is a mixture of alcohol ethoxylates.
4. The crop husbandry composition according to any one of claims 1 to 3, wherein x has a value of from 10 to 50, preferably 15 to 35, most preferably 20 to 30.
5. The crop husbandry composition according to any one of claims 1 to 4, wherein the alcohols or mixture of alcohols is present in the crop husbandry composition in

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a mass percentage of from about 60wt% to about 90wt%, preferably about 70wt% to about 80wt%, based on the total weight of the crop husbandry composition.

6. The crop husbandry composition according to any one of claims 1 to 5, wherein the alcohol alkoxylate or mixture of alcohol alkoxylates is present in the crop husbandry composition in a mass percentage of from about 10wt% to about 40wt%, preferably from about 20wt% to about 30wt%, based on the total weight of the crop husbandry composition.
7. The crop husbandry composition according to any one of claims 1 to 6, wherein the alcohols present are greater than 50wt% linear alcohols, preferably between 60wt% and 90wt% linear alcohols, based on the total weight of linear and branched alcohols present.
8. The crop husbandry composition according to any one of claims 1 to 7, wherein the alcohol or mixture of alcohols includes additional components comprising paraffins, esters, ethers or mixtures thereof.
9. The crop husbandry composition according to claim 8, wherein the crop husbandry composition includes from about 0.7wt% to about 4wt% paraffins, preferably from about 0.7wt% to about 2.5wt% paraffins; from about 1.5wt% to about 9wt% esters, preferably from about 4wt% to about 9wt% esters; and from about 1wt% to about 6wt% ethers, based on the total weight of the alcohols or mixture of alcohols and the additional components.
10. The crop husbandry composition according to claim 8 or claim 9, wherein the alcohols are present in the alcohol or mixture of alcohols in a mass percentage of from about 65wt% to about 99wt%, preferably 70wt% to 95wt%, most preferably 75wt% to 85wt%, based on the total weight of the alcohols or mixture of alcohols and the additional components.

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11. The crop husbandry composition according to any one of claims 8 to 10, where in the additional components are present in the alcohol or mixture of alcohols in a mass percentage of from about 1wt% to about 35wt%, preferably 5wt% to 30wt%, most preferably 15wt% to 25wt%, based on the total weight of the alcohols or mixture of alcohols and the additional components.
12. The crop husbandry composition according to any one of claims 1 to 11, wherein the crop husbandry composition contains an agrochemically active ingredient in a mass percentage of from about 0.01 wt% to about 10 wt%, based on the total weight of the crop husbandry composition.
13. The crop husbandry composition according to claim 12, wherein the agrochemically active ingredient is a pesticide, a herbicide, a fungicide, a plant growth regulator, a nutrient, a fertilizer, a sun protection agent, or any combination of the aforesaid.
14. The crop husbandry composition according to any one of claims 1 to 13, wherein the alcohol or mixture of alcohols and the alcohol alkoxylate or mixture of alcohol alkoxylates are in a mass ratio of from about 70:30 to about 90:10.
15. A crop husbandry emulsion, comprising the crop husbandry composition according to any one of claims 1 to 14, and water.
16. The crop husbandry emulsion according to claim 15, wherein the crop husbandry emulsion includes from about 20wt% to about 99wt% water, preferably from about 70wt% to about 99% water, more preferably about 80wt% to about 99wt% water, based on the total weight of the crop husbandry emulsion.
17. The crop husbandry emulsion according to claim 15 or claim 16, wherein the crop husbandry emulsion is a stable self-emulsifying fluid which is viscoelastic at 25°C and has an elastic modulus of at least 75% of the viscous modulus.

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18. The crop husbandry emulsion according to any one of claims 15 to 17, wherein the crop husbandry emulsion absorbs or attenuates UV light in the wavelength range from about 190 nm to about 390 nm.
19. A field solution, comprising the crop husbandry composition according to any one of claims 1 to 14 and water, wherein the field solution includes from about 90wt% to about 99.9wt% water, based on the total weight of the field solution.
20. The field solution according to claim 19, where in the field solution absorbs or attenuates UV light in the wavelength range from about 190 nm to about 390 nm.
21. A method for the cultivation, treatment, and/or protection of plants, crops, seeds, plant propagation material, aquatic environments, or soil, the method including applying a crop husbandry emulsion according to any one of claims 15 to 18 or a field solution according to claim 19 or claim 20 to the plants, crops, seeds, plant propagation material, aquatic environment, or soil.
22. The method according to claim 21, wherein the crop husbandry emulsion or the field solution forms a coating on the plant, crop, seed or plant propagation material, aquatic environments, or soil, to which it is applied.
23. The method according to claim 21 or claim 22, wherein the coating absorbs or attenuates UV light in the wavelength range from about 190 nm to about 390 nm.
24. Use of a crop husbandry composition according to any one of claims 1 to 14 for the cultivation, treatment, and/or protection of plants, crops, seeds, plant propagation material, aquatic environments, or soil, to which the crop husbandry composition is applied.