Claims:

1. A method for preparing an alkoxylated fatty acid alkyl ester in a one-pot reaction comprising the steps of:

a) providing a fatty acid alkyl ester,

b) adding a catalyst to said fatty acid alkyl ester to obtain a first mixture, wherein said catalyst is an alkaline earth metal oxide/mineral acid combination or a Lewis acid,

c) adding one or more alkylene oxides to said first mixture to obtain a second mixture and

(d) isolating the alkoxylated fatty acid alkyl ester.

2. A method according to claims 1 or 2, wherein the alkoxylated fatty acid alkyl ester has the formula:

$$R_1\text{-}COO\text{-}[(CH_2\text{-}CHR_3\text{-}O)_x\text{-}(CH_2\text{-}CHR_4\text{-}O)_y]_z\text{-}R_2$$

wherein R_1 and R_2 are independently of each other a linear or branched, saturated or unsaturated, aliphatic or aromatic hydrocarbon radical having from 1 to 30 carbon atoms,

R_3 and R_4 are independently of each other H, (C1-C10)alkyl, preferably H, methyl or ethyl,

x, y and z are independently of each other an integer having an average value from 1 to 100,

with the proviso that $(x+y) \bullet z \leq 100$.

3. A method according to any preceding claim, wherein the alkaline earth metal oxide and the mineral acid are added simultaneously or sequentially.

4. A method according to any preceding claim, wherein the alkaline earth metal oxide is an oxide of Group II elements, preferably barium oxide.

5. A method according to any preceding claim, wherein the alkaline earth metal oxide is at a concentration of less than 5 wt% preferably 0.5 to 1.5 wt%

6. A method according to any preceding claim, wherein the mineral acid is selected from sulfuric acid, hydrochloric acid, perchloric acid, nitric acid, phosphoric acid, preferably sulfuric acid.

7. A method according to any preceding claim, wherein the mineral acid is at a concentration of less than 5 wt% preferably less than 2 wt%

8. A method according to any preceding claim, wherein the ratio of alkaline earth metal oxide to mineral acid is from 1.5-2.5 to 0.5-1.5, preferably about 2 to 1

9. A method according to any preceding claim, wherein the Lewis acid is a tin halide, preferably fuming $SnCl_4$.

10. A method according to any preceding claim, wherein the Lewis acid is at a concentration of less than 0.2 to 1.5 wt% preferably 0.5-1.0 wt%

11. A method according to any preceding claim, wherein said first mixture of step (b) is dried in vacuo at a temperature of from 40° to 140°C, preferably 80° to 140°C, prior to conducting step (c).

12. A method according to any preceding claim, wherein step (c) is conducted at a pressure of 0.1 to 10 bar, preferably 0.1 to 2.0 bar and at a temperature of from 40°C to 200°C, preferably 160° to 200°C.

13. A method according to any preceding claim, wherein the alkoxylated fatty acid alkyl ester is isolated by filtration

14. A method according to any preceding claim, wherein the second mixture is acidified for neutralization prior to conducting step (d).

Claims:

1. A method for preparing an alkoxylated fatty acid alkyl ester in a one-pot reaction comprising the steps of:

   a) providing a fatty acid alkyl ester,

   b) adding a catalyst to said fatty acid alkyl ester to obtain a first mixture, wherein said catalyst is an alkaline earth metal/mineral acid combination or a Lewis acid,

   c) adding one or more alkylene oxides to said first mixture to obtain a second mixture and

   (d) isolating the alkoxylated fatty acid alkyl ester

   wherein the Lewis acid is a halide, particularly a chloride, of the elements of the 3rd and 4th main group and 4th and 8th secondary group of the periodic system of elements.

2. A method according to claims 1 or 2, wherein the alkoxylated fatty acid alkyl ester has the formula:

   $$R_1\text{-}COO\text{-}[(CH_2\text{-}CHR_3\text{-}O)_x\text{-}(CH_2\text{-}CHR_4\text{-}O)_y]_z\text{-}R_2$$

   wherein R_1 and R_2 are independently of each other a linear or branched, saturated or unsaturated, aliphatic or aromatic hydrocarbon radical having from 1 to 30 carbon atoms,

   R_3 and R_4 are independently of each other H, (C1-C10)alkyl, preferably H, methyl or ethyl,

   x, y and z are independently of each other an integer having an average value from 1 to 100,

   with the proviso that $(x+y) \cdot z \leq 100$.

3. A method according to any preceding claim, wherein the alkaline earth metal oxide and the mineral acid are added simultaneously or sequentially.

4. A method according to any preceding claim, wherein the alkaline earth metal oxide is an oxide of Group II elements, preferably barium oxide.

5. A method according to any preceding claim, wherein the alkaline earth metal oxide is at a concentration of less than 5 wt% preferably 0.5 to 1.5 wt%

6. A method according to any preceding claim, wherein the mineral acid is selected from sulfuric acid, hydrochloric acid, perchloric acid, nitric acid, phosphoric acid, preferably sulfuric acid.

7. A method according to any preceding claim, wherein the mineral acid is at a concentration of less than 5 wt% preferably less than 2 wt%

8. A method according to any preceding claim, wherein the ratio of alkaline earth metal oxide to mineral acid is from 1.5-2.5 to 0.5-1.5, preferably 2 to 1

9. A method according to any preceding claim, wherein the Lewis acid is a tin halide, preferably fuming $SnCl_4$.

10. A method according to any preceding claim, wherein the Lewis acid is at a concentration of less than 0.2 to 1.5 wt% preferably 0.5-1.0 wt%

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12. A method according to any preceding claim, wherein step (c) is conducted at a pressure of 0.1 to 10 bar, preferably 0.1 to 2.0 bar and at a temperature of from 40°C to 200°C, preferably 160° to 200°C.

13. A method according to any preceding claim, wherein the alkoxylated fatty acid alkyl ester is isolated by filtration

14. A method according to any preceding claim, wherein the second mixture is acidified for neutralization prior to conducting step (d).