

CLAIMS

1. A method of purifying biomass-based lipid material, comprising the steps of
- 5 (a) providing a feed of biomass-based lipid material;
- (c) drying the feed of biomass-based lipid material;
- (d) removing oxygen from the feed of biomass-based lipid material under reduced pressure;
- (e) heat treating the feed of biomass-based lipid material at 180 to 300°C under reduced pressure to solidify at least part of phosphorous and/or metal containing impurities comprised in the biomass-based lipid material, simultaneously distilling off at least part of free fatty acids and low molecular weight nitrogen compounds comprised in the biomass-based lipid material,
- 10 to obtain at least
- a fraction comprising free fatty acids and low molecular weight nitrogen compounds, and
- 15 heat treated biomass-based lipid material comprising degraded phosphorous and/or metal containing impurities in solid form; and
- f) removing the solid degraded phosphorous and/or metal containing impurities from the second fraction;
- 20 to obtain purified biomass-based lipid material.
2. A method as claimed in claim 1, comprising the steps of
- (a) providing a feed of biomass-based lipid material;
- (b) pretreating the feed of biomass-based lipid material
- (c) drying the feed of biomass-based lipid material;
- 25 (d) removing oxygen from the feed of biomass-based lipid material under reduced pressure;
- (e) heat treating the feed of biomass-based lipid material at 180 to 300°C under reduced pressure to solidify at least part of phosphorous and/or metal containing impurities comprised in the biomass-based lipid material, simultaneously distilling off at least part of free fatty acids and low molecular weight nitrogen compounds comprised in the biomass-based lipid material,
- 30 to obtain at least
- a fraction comprising free fatty acids and low molecular weight nitrogen compounds, and
- 35 heat treated biomass-based lipid material comprising degraded phosphorous and/or metal containing impurities in solid form; and

(f) removing the solid degraded phosphorous and/or metal containing impurities from the second fraction;

to obtain purified biomass-based lipid material.

3. A method as claimed in claim 1, comprising the steps of

- 5 (a) providing a feed of biomass-based lipid material;
(b) optionally pretreating the feed of biomass-based lipid material
(c) drying the feed of biomass-based lipid material;
(d) removing oxygen from the feed of biomass-based lipid material under reduced pressure;

- 10 (e) heat treating the feed of biomass-based lipid material at 180 to 300°C under reduced pressure to solidify at least part of phosphorous and/or metal containing impurities comprised in the biomass-based lipid material, simultaneously distilling off at least part of free fatty acids and low molecular weight nitrogen compounds comprised in the biomass-based lipid material,

- 15 to obtain at least
a fraction comprising free fatty acids and low molecular weight nitrogen compounds, and

heat treated biomass-based lipid material comprising degraded phosphorous and/or metal containing impurities in solid form; and

- 20 f) removing the solid degraded phosphorous and/or metal containing impurities from the second fraction;

to obtain purified biomass-based lipid material; and

(g) post treating the purified biomass-based lipid material.

4. A method as claimed in any one of claim 1 to 3, wherein step (e) is
25 performed at 240 to 280°C.

5. A method as claimed in any one of claim 1 to 4, wherein the pressure in step (e) is from 0.01 to 50 kPa, preferably from 0.1 to 4 kPa.

6. A method as claimed in any one of claim 1 to 5, wherein the water content of the biomass-based lipid material to be treated in step (e) is lower than
30 5 ppm.

7. A method as claimed in any one of claim 1 to 6, wherein step (c) is accomplished at any temperature from 80 to 120°C under reduced pressure, preferably from 5 to 10 kPa.

8. A method as claimed in any one of claims 1 to 7, wherein step (d) is
35 accomplished by heating at any temperature from 80 to 120°C under reduced pressure, preferably from 0.2 to 1.5 kPa, more preferably from 0.2 to 0.5 kPa.

9. A method as claimed in any one of claims 1 to 8, wherein the biomass-based lipid material to be purified comprises iii) a phosphorous content (P) of more than 20 ppm, preferably more than 50 ppm, more preferably more than 70 ppm.

10. A method as claimed in any one of claims 1 to 9, wherein the heat
5 treated biomass-based lipid material is subjected to bleaching.

11. A method as claimed in any one of claims 1 to 10, wherein the purified biomass-based lipid material is combined with the first fraction comprising free fatty acids and low molecular weight nitrogen compounds prior a catalytic upgrading.