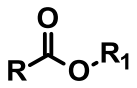
WE CLAIM:

1. A process for producing calcium propionate comprising:
    a. reacting water and calcium oxide to obtain a slurry;
    b. reacting the slurry with methyl propionate, wherein the calcium oxide is reacted in a molar excess compared to the methyl propionate, to obtain a reaction solution;
    c. heating the reaction solution to remove an amount of methanol from the reaction solution;
    d. neutralizing the reaction solution to a pH of from 7.0 to 9.5 by adding propionic acid; and
    e. filtering the reaction solution.
2. The process according to claim 1, further comprising adding nitrogen gas to the reaction solution during heating of the reaction solution.
3. The process according to claim 1 or claim 2, further comprising recovering the calcium propionate in a solid form from the filtered reaction solution.
4. The process according to claim 3, wherein the solid calcium propionate has a level of purity of 98.5% or greater.
5. The process according to any of claims 1 to 4, wherein the pH is from 7.0 to 8.0.
6. The process according to any of claims 1 to 5, wherein the filtered reaction solution contains from 23% to 28% (w/w) calcium propionate.
7. The process according to any of claims 1 to 6, wherein step b. is conducted at a temperature of from 50° C to 100° C.

8. A process for producing a calcium carboxylate comprising:

    a. reacting water, calcium oxide, and a compound of formula (I):



(I)

wherein

R is a C_1-C_3 alkyl and

R_1 is a C_1 or C_2 alkyl,

to obtain a reaction solution,

wherein the compound of formula (I) is methyl propionate; and

    b. heating the reaction solution to remove an amount of a co-product from the reaction solution.

9. The process according to claim 8, further comprising:

    c. filtering the reaction solution.

10. The process according to claim 8 or claim 9, wherein the compound of formula (I) has fewer than six carbon atoms.

11. The process according to any of claims 8 to 10, wherein the calcium oxide is reacted in a molar excess compared to the compound of formula (I).

12. The process according to any of claims 8 to 11, wherein the compound of formula (I) is ethyl propionate, methyl butanoate, or methyl acetate.

13. The process according to any of claims 8 to 12, further comprising adding nitrogen gas to the reaction solution during heating of the reaction solution.

14. The process according to any of claims 9 to 13, further comprising recovering the calcium carboxylate in a solid form from the filtered reaction solution.
15. The process according to claim 14, wherein the solid calcium carboxylate has a level of purity of 98.5% or greater.
16. The process according to any of claims 8 to 15, further comprising neutralizing the reaction solution to a pH of from 7.0 to 9.5 by adding an acid.
17. The process according to claim 16, wherein the pH is from 7.0 to 8.0.
18. The process according to any of claims 9 to 17, wherein the filtered reaction solution contains from 23% to 28% (w/w) calcium carboxylate.
19. The process according to any of claims 8 to 18, wherein step a. is conducted at a temperature of from 50° C to 100° C.