AMENDED CLAIMS

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1. A non-corrosive process for cleaning a recyclable material comprising the following steps:
(a) providing a contaminated recyclable material;
(b) treating the contaminated recyclable material at a temperature in the range of from 45-130 °C with a non-corrosive solution that contains one or more polyols to remove contaminants from the contaminated recyclable material, wherein the one or more polyols is (are) present in an amount of at least 15 wt.%, based on the total weight of the non-corrosive solution, thereby forming a liquid mixture which comprises one or more polyols, contaminants removed from the recyclable material, and treated recyclable material;
(c) separating at a temperature in the range 10-55 °C at least part of the recyclable material as obtained in step (b) from the liquid mixture as obtained in step (b);
(d) allowing at least part of the remaining liquid mixture as obtained in step (c) to phase-separate into a polyol phase and a phase which contains contaminants removed from the contaminated recyclable material;
(e) recovering the polyol phase as obtained in step (d);
(f) recovering the phase which contains contaminants removed from the recyclable material as obtained in step (d); and
(g) recovering the separated recyclable material as obtained in step (c).

2. The process according to claim 1, wherein at least part of the polyol phase as recovered in step (e) is recycled to step (b).

3. The process according claim 1 or 2, wherein the recyclable material is a recyclable clay material.

4. The process according to claim 1 or 2, wherein the recyclable material is a recyclable plastic material.

5. The process according to any one of claims 1-4, wherein step (b) the solution has a pH value of 7.

6. The process according to claim 1-3 or 5, wherein after step (g) a step (h) is carried out in which at least part of the recyclable clay material as recovered in step (g) is subjected to a thermal treatment which is carried out at a temperature in the range of from 300-950 °C.

7. The process according to any one of claims 1-6, wherein in step (b) the recyclable material is treated with one or more non-corrosive solutions, wherein at least one of the non-corrosive solutions contains one or more polyols to remove contaminants from the contaminated recyclable material.

8. The process according to any one of claims 1-7, wherein in step (b) the solution is a pure polyol solution that consists of one or more polyols.

9. The process according to any one of claims 1-7, wherein in step (b) the solution is an aqueous solution that contains one or more water soluble polyols.

10. The process according to claim 9, wherein in the aqueous solution the one or more water soluble polyols (is (are) present in an amount in the range of from 60-99.5 wt.%, based on total weight of the aqueous solution.

11. The process according to any one of claims 1-10, wherein in step (b) the weight ratio of the solution that contains one or more polyols (A) to the contaminated recyclable material (B) is in the range of from 1-3 (A/B).

12. The process according to any one of claims 1-11, wherein the one or more polyols is (are) selected from the group consisting of meso-erythritol, pentaerythritol, xylitol, sorbitol and glycerol.

13. The process according to claim 12, wherein at least one of the polyols is xylitol or glycerol.

14. The process according to claim 11, wherein the at least one of the polyols is glycerol.

15. The process according to any one of claims 1-14, wherein in step (b) the recyclable material is contacted with a single non-corrosive solution in a single step.