CLAIMS

1. A cold-cured briquette comprising:

(i) a particulate material; and

(ii) a binder, the binder comprising (a) 0.01 to 0.8 % by weight of the briquette at least partially saponified polyvinyl alcohol (PVA) and (b) an alkali metal alkyl siliconate or polyalkylsilicic acid;

wherein the particulate material is selected from a carbonaceous material, metal, metal ore, mineral waste or a mixture thereof.

2. A briquette according to claim 1 comprising 0.01 to 1.0% by weight of the alkali metal alkyl siliconate or the polyalkylsilicic acid.

3. A briquette according to claims 1 or 2 wherein the alkali metal alkyl siliconate is an alkali metal C_1 to C_4 alkyl siliconate or the polyalkylsilicic acid is a poly C_1 to C4 alkyl silicic acid.

4. A briquette according to claim 3 wherein comprising potassium methyl siliconate or poly methyl silicic acid.

5. A briquette according to any preceding claim comprising up to 99% by weight particulate material.

6. A briquette according to any preceding claim comprising a carbonaceous material and up to 15% by weight of a particulate metal ore or a particulate metal waste.

7. A briquette according to any preceding claim wherein the particulate material has a particle size of 4 mm diameter or less.

8. A briquette according to claim 7 wherein at least 10% by weight of the particulate material is capable of passing through a 100 µm sieve prior to forming into a briquette.

9. A briquette according to claims 1 to 5, additionally comprising up to 5% by weight of a cross-linking agent, typically 2% by weight.

10. A briquette according to any preceding claim additionally comprising a waterproofing agent, combined with the particulate material or as a layer on the external surface of the briquette.

°°°

11. A briquette according to any preceding claim having a moisture content of < 15% by weight.

12. A method for producing a briquette according to any preceding claim comprising:
(i) mixing particulate, a material carbonaceous material, metal, metal ore, metal waste or mixtures thereof with the binder to form a;
(ii) compressing the mixture to form a briquette; and
(iii) cold-curing the briquette.

13. A method according to claim 12 wherein the coal, metal and/or metal ore has a moisture content of < 15% by weight.

14. A method according to claims 12 or 13, comprising the step of mixing a cross-linking agent with the coal, metal, metal ore or mixture prior to curing.

15. A method according to claims 12 to 14 comprising alkali metal alkyl siliconate which is a C_1 – C_4 alkyl alkali metal siliconate.

16. A method according to claim 15 wherein the C_1 – C_4 alkyl alkali metal siliconate is potassium methyl siliconate.

17. A method according to claims 12 to 16 wherein the briquette is coated with a waterproofing agent.

18. A method according to claim 17 wherein the waterproofing agent is sprayed on to the briquette.

19. A method according to claims 17 or 18 wherein the waterproofing agent comprises a styrene-acrylate copolymer or a bitumen emulsion.

°°°