WE CLAIM:

1. **A method of manufacturing a plastic-containing emulsion** comprising

mixing a plastic source with a solvent, a polymerising cross-linker and a cross-linker promotor in a mixing tank,

the solvent selected from two or more monoethylenically unsaturated monomers,

wherein the two or more monoethylenically unsaturated monomers comprise at least (a) two or more hard monomers or (b) one hard monomer and one soft monomer, and

wherein the emulsion is absent any bitumen,

to produce a plastic-containing emulsion.

2. A method of claim 1 wherein the plastic source is dissolved in the solvent.

3. A method of claim 2 wherein the plastic source is
   - dissolved prior to its addition into the mixing tank, or
   - dissolved in the mixing tank.

4. A method of any one of claims 1 to 3 wherein the ratio of plastic source to solvent is between a ratio of 40:60 to 60:40.

5. A method of any one of claims 1 to 4 wherein the plastic source comprises a plastic that comprises a styrene unit.

6. A method of claim 5 wherein the plastic source comprises at least 30% by weight of total plastic of a plastic that comprises a styrene unit.

7. A method of any one of claims 1 to 5 wherein the monoethylenically unsaturated monomer comprises an acrylate monomer.

8. A method of claim 7 wherein the acrylate monomer comprises a soft monomer.

9. A method of claim 7 wherein the acrylate monomer is selected from one or more of 2-EHA, Butyl Acrylate, Ethyl Acrylate, VEOVA 10, 2-Hydroxy Ethyl Acrylate, Dibutyl Maleate, Hydroxy Propyl Acrylate, AAEM, Methyl Acrylate, DMAEMA, Butyl Methacrylate, Sipomer WAM, Vinyl Acetate, WAM IV, Allyl methacrylate, Hydroxy Ethyl Methacrylate, n-Methylolmethacrylamide, Isobutyl Methacrylate, GMA, Diacetone Acrylamide, Plex 6844-O, DMAPMA, Acrylonitrile, Itaconic Acid, Styrene, TMPTA, Methyl Methacrylate, Acrylic Acid, Acrylamide, Methacrylic Acid, Methacrylamide and n-Methylolacrylamide.

10. A method of any one of claims 1 to 9 wherein the monomer comprises a styrene monomer.

11. A method of claim 10 wherein the styrene monomer is polystyrene.

12. A method of any one of claims 1 to 11 wherein the plastic source is present at about 30 to about 50% by weight of the emulsion.

13. A method of any one of claims 1 to 12 wherein the emulsion comprises about 30 to about 70% by weight of a monomer.

14. A method of any one of claims 1 to 13 wherein the cross-linker comprises a bi- or tri- functional ester monomer.

15. A method of any one of claims 1 to 14 wherein the emulsion comprises about 5 to about 30% by weight of a cross-linker.

16. A method of any one of claims 1 to 15 wherein the cross-linker comprises a peroxide based cross-linker.

17. A method of claim 16 wherein the peroxide cross-linker is present at about 2 to about 5% by weight of the emulsion.

18. A method of claim 16 or 17 wherein the peroxide cross-linker is selected from inorganic peroxides, diacyl peroxides, peroxyesters, peroxydicarbonates, dialkyl peroxides, ketone peroxides, peroxyketals, cyclic peroxides, peroxymonocarbonates, hydroperoxides, dicumyl peroxide, benzoyl peroxide, 2,5-Di(tert-butylperoxy)-2,5-dimethyl-3-hexyne, 3,3,5,7,7-pentamethyl 1 ,2,4-trioxepane, dilauryl peroxide, methyl ether ketone peroxide, t-amyl peroxyacetate, t-butyl hydroperoxide, t-amyl peroxybenzoate, D-t- amyl peroxide, 2,5-Dimethyl 2,5-Di(t-butylperoxy)hexane, t-butylperoxy isopropyl carbonate, succinic acid peroxide, cumene hydroperoxide, 2,4-pentanedione peroxide, t-butyl perbenzoate, diethyl ether peroxide, acetone peroxide, arachidonic acid 5-hydroperoxide, carbamide peroxide, tert-butyl hydroperoxide, t-butyl peroctoate, t-butyl cumyl peroxide, Di-sec-butyl-peroxydicarbonate, D-2-ethylhexylperoxydicarbonate, 1 ,1 -Di(t-butylperoxy)cyclohexane, 1 ,1 -Di(tert-butylperoxy)-3,3,5-trinnethylcyclohexane, 2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane, 3,3,5,7,7-Pentamethyl-1 ,2,4-trioxepane, Butyl 4,4-di(tert-butylperoxy)valerate, Di(2,4-dichlorobenzoyl) peroxide, Di(4-methylbenzoyl) peroxide, Di(tert-butylperoxyisopropyl)benzene, tert-Butyl cumyl peroxide, tert-Butyl peroxy-3,5,5-trimethylhexanoate, tert-Butyl peroxybenzoate, tert-Butyl peroxy 2-ethylhexyl carbonate, and mixtures thereof.

19. A method of any one of claims 1 to 17 wherein the cross-linker comprises a silane cross-linking agent.

20. A method of claim 19 wherein the silane cross-linker is selected from an acetoxy silane crosslinker, an oximino silane based crosslinker, a methylethylketoxime (MEKO) based crosslinker, a methylisobutylketoxime (MIBKO) based crosslinker, an acetoxime based crosslinker, an alkoxy silane based crosslinker, or a combination thereof. In some examples, the crosslinker includes a methyl tris(MEKO)silane, a tetra(MEKO)silane, a vinyl tris(MEKO)silane, a methylvinyl di(MEKO)silane, a phenyl tris(MEKO) silane, a methyl tris(MIBKO)silane, a tetra(MIBKO)silane, a vinyl tris(MIBKO)silane, a methyl tris(acetoxime)silane, a vinyl tris(acetoxime)silane, or a mixture thereof.

21. A method of any one of claims 1 to 20 wherein the emulsion comprises about 0.25 to 0.5% by weight of promotor.

22. A method of any one of claims 1 to 21 wherein the promotor is an amine based compound.

23. A method of any one of claims 1 to 21 wherein the promotor is an aniline derivative or analouge.

24. A method of any one of claims 1 to 21 wherein the promotor is selected from N,N-dimethyl-p-toluidine (DMPT), N,N-dieethyl-p-toluidine (DEPT) or a combination thereof.

25. A method of any one of claims 1 to 24 wherein the emulsion is mixed with an aggregate, wherein the emulsion comprises about 8 to about 16% by weight of the total mixture.

26. The use of an emulsion as claimed in any one of claims 1 to 24 in the manufacture of a roading product.

27. A method of claim 26 comprising combining the emulsion with a coarse aggregate to form a roading mixture, the coarse aggregate having a particle size of less than about 60 mm.

28. A method of any one of claims 25 to 27 wherein the ratio of aggregate to emulsion is about 7 to about 12% emulsion to aggregate.

29. The use of an emulsion as claimed in any one of claims 1 to 25 in the manufacture of a plastic-concrete composite product.