CLAIMS:

1. A coating composition comprising:
   a corrosion and erosion resistant metal oxide selected from silicon oxide, aluminium oxide, zirconium oxide, mica, zinc oxide, or a mixture thereof;
   a high temperature resistant metal oxide selected from chromium oxide, titanium dioxide, or a mixture thereof; and
   a binder comprising alkali metal silicate and alkali metal feldspar,

wherein the weight ratio of alkali metal silicate to alkali metal feldspar is in the range 4.0 to 10.0 : 1;
the alkali metal silicate is a mixture of sodium silicate and potassium silicate, and the alkali metal feldspar is potassium feldspar; and
the weight ratio of sodium silicate to potassium silicate to potassium feldspar is in the range (2.1 to 5.0) : (1.5 to 5.0) : 1.

2. A coating composition according to claim 1, wherein the weight ratio of alkali metal silicate to alkali metal feldspar is in the range 4.0 to 7.5 : 1.

3. A coating composition according to claim 1 or claim 2, wherein the weight ratio of sodium silicate to potassium silicate to potassium feldspar is in the range (2.1 to 3.5) : (1.5 to 5.0) : 1.

4. A coating composition according to any one of claims 1 to 3, wherein the weight ratio of said binder to said high temperature resistant metal oxide is 3.0 to 8.0 : 1.

5. A coating composition according to claim 4, wherein the weight ratio of said binder to said high temperature resistant metal oxide is 3.0 to 7.0 : 1.

6. A coating composition according to any one of claims 1 to 5, wherein said corrosion and erosion resistant metal oxide is a mixture of silicon oxide and aluminium oxide, and said high temperature resistant metal oxide is chromium oxide.

7. A coating composition according to claim 6, wherein the weight ratio of silicon oxide to chromium oxide to aluminium oxide is in the range (0.1 – 0.9) : (0.1 – 0.9) : 1.

8. A coating composition according to claim 7, wherein the weight ratio of silicon oxide to chromium oxide to aluminium oxide is in the range (0.1 to 0.5) : (0.1 to 0.5) : 1.

9. A coating composition according to any one of claims 1 to 8, wherein the coating composition is an aqueous coating composition.

10. A container containing a coating composition according to any one of claims 1 to 9.

11. A kit for preparing a coating composition as claimed in any one of claims 1 to 9, comprising:

(i) a first container containing a mixture of a corrosion and erosion resistant metal oxide selected from silicon oxide, aluminium oxide, zirconium oxide, mica, zinc oxide, or a mixture thereof, and a high temperature resistant metal oxide selected from chromium oxide, titanium dioxide, or a mixture thereof;

(ii) a second container comprising a binder comprising alkali metal silicate and alkali metal feldspar, wherein the alkali metal silicate is a mixture of sodium silicate and potassium silicate, and the alkali metal feldspar is potassium feldspar; and

(iii) instructions to mix said mixture of said first container with said binder of said second container.

12. A method for preparing a coating composition as defined in any one of claims 1 to 9, comprising the steps of:

(i) preparing a mixture of a corrosion and erosion resistant metal oxide selected from silicon oxide, aluminium oxide, zirconium oxide, mica, zinc oxide, or a mixture thereof, and a high temperature resistant metal oxide selected from chromium oxide, titanium dioxide, or a mixture thereof; and

(ii) mixing said mixture with a binder comprising alkali metal silicate and alkali metal feldspar, wherein the alkali metal silicate is a mixture of sodium

silicate and potassium silicate, and the alkali metal feldspar is potassium feldspar.

13. A method for preparing a coated substrate, comprising the steps of:

(i) providing a substrate; and

(ii) applying a coating composition as defined in any one of claims 1 to 9 onto at least one surface of said substrate.

14. A coated substrate comprising a coating composition as defined in any one of claims 1 to 9.

15. A boiler (e.g. a coal or biomass boiler) comprising a coated substrate according to claim 14.

16. Use of a coating composition as defined in any one of claims 1 to 9 to coat a substrate.

17. Use of a coating composition as defined in any one of claims 1 to 9 to prevent or reduce erosion and/or corrosion of a substrate and/or slag deposition on a substrate.