CLAIMS

~~1. A method to protect iron ore pellets during their slag phase aging~~ process, **CHARACTERIZED** by the fact that it includes the phase during which hydration reaction inhibitors for the slag phase of heat-treated iron ore agglomerates are added.

2. In accordance with Claim 1, a method **CHARACTERIZED** by the fact that the inhibitors are added to the pulp before the cold agglomeration process (pelletizing or microagglomeration).

3. In accordance with Claim 1, a method **CHARACTERIZED** by the fact that the aging inhibitors include metal oxides.

4. In accordance with Claim 3, a method **CHARACTERIZED** by the fact that aforementioned metal oxides are selected from a group of materials that consist of aluminum, kaolinite ($Al_2O_3.2SiO_2.2SH_2O$), fine silica, titanium oxides, Mg, and Zn.

5. In accordance with Claim 3, a method **CHARACTERIZED** by the fact that the aforementioned metal oxides are preferably selected from any other oxides that reduce the silicate's K, Na, and Ca content.

6. In accordance with Claim 3, a method **CHARACTERIZED** by the fact that the aforementioned metal oxides shall be introduced and tested at an increasing rate until a maximum limit has been reached, depending on the product's desired chemical stability.

~~7. In accordance with Claim 6, a method **CHARACTERIZED** by the fact~~

~~that the aforementioned metal oxides shall be introduced and tested at an~~ increasing rate, preferably to the effect that the slag's composition in the agglomerate after firing simultaneously meets the conditions of $(CaO+Na_2O+K_2O)$ <45% and

$$\frac{(SiO_2/60) + (Al2O3/102)}{(CaO/56) + (Na2O/62) + (K2O/94)} > 0,6$$

8. In accordance with Claim 7, a method **CHARACTERIZED** by the fact that, at the end of the process, the pellets have a chemical quality that is acceptable in the iron and steel market.

9. In accordance with Claim 6, a method **CHARACTERIZED** by the fact that the inhibiting material shall be applied as particulate material <45 μm or preferably 80% <20 μm to ensure the stabilizing elements' greater reactivity and integration in the slag.

10. In accordance with Claim 9, a method **CHARACTERIZED** by the fact that the inhibiting materials may be added as a powder or diluted in the pulp.

11. In accordance with Claim 1, a method **CHARACTERIZED** by the fact that the method may be applied to other types of iron ore agglomerates whose ~~resistance depends on the type of calcium silicate and iron in the slag phase.~~

Replaced by New Claims 1 to 9.

CLAIMS

1. A method to protect iron ore pellets during their slag phase aging process, CHARACTERIZED by the fact that it includes the phase during which hydration reaction inhibitors that are composed of metal oxides, for the slag phase of heat-treated iron ore agglomerates are added.

2. In accordance with Claim 1, a method CHARACTERIZED by the fact that the inhibitors are added to the pulp before the cold agglomeration process (pelletizing or microagglomeration).

3. In accordance with Claim 1, a method CHARACTERIZED by the fact that aforementioned metal oxides are selected from a group of materials that consist of aluminum, kaolinite ($Al_2O_3.2SiO_2.2SH_2O$), fine silica, titanium oxides, Mg, and Zn.

4. In accordance with Claim 1, a method CHARACTERIZED by the fact that the aforementioned metal oxides are preferably selected from any other oxides that reduce the silicate's K, Na, and Ca content.

5. In accordance with Claim 6, a method CHARACTERIZED by the fact that the aforementioned metal oxides shall be introduced and tested at an increasing rate, preferably to the effect that the slag's composition in the agglomerate after firing simultaneously meets the conditions of ($CaO+Na_2O+K_2O$) <45% and

$$\frac{(SiO_2/60) + (Al2O3/102)}{(CaO/56) + (Na2O/62) + (K2O/94)} > 0,6$$

6. In accordance with Claim 7, a method CHARACTERIZED by the fact that, at the end of the process, the pellets have a chemical quality that is acceptable in the iron and steel market.

7. In accordance with Claim 6, a method CHARACTERIZED by the fact that the inhibiting material shall be applied as particulate material <45 μm or preferably 80% <20 μm to ensure the stabilizing elements' greater reactivity and integration in the slag.

8. In accordance with Claim 9, a method CHARACTERIZED by the fact that the inhibiting materials may be added as a powder or diluted in the pulp.

9. In accordance with Claim 1, a method CHARACTERIZED by the fact that the method may be applied to other types of iron ore agglomerates whose resistance depends on the type of calcium silicate and iron in the slag phase.