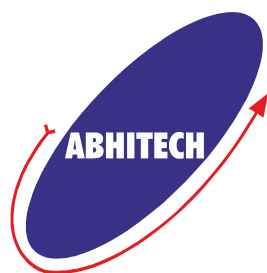


THERMACT-SITM

Multifunctional Catalyst



ABHITECH ENERGYCON LIMITED

Introduction

Cost of coal in Sponge Iron industry forms the major part of the total production cost. With the continued escalation in the price of coal the manufacturing cost of Sponge Iron has been increasing. In such a scenario, the need of the hour is to reduce the cost of fuel as well as the emission levels by using innovative and state of art technologies.

THERMACT-SI, a multifunctional solid fuel catalyst, developed in association with IIT, Mumbai, is one such technology which can provide significant benefits to Sponge Iron industries.

What is **THERMACT-SI** ?

THERMACT-SI, is a multifunctional thermo-active catalyst in powder form, to improve the combustion efficiency of coal. It is specially formulated for Sponge Iron Industry. It is added directly into the klin. Use of THERMACT-SI is primarily aimed at reducing the coal consumption as well as the rate of accretion.

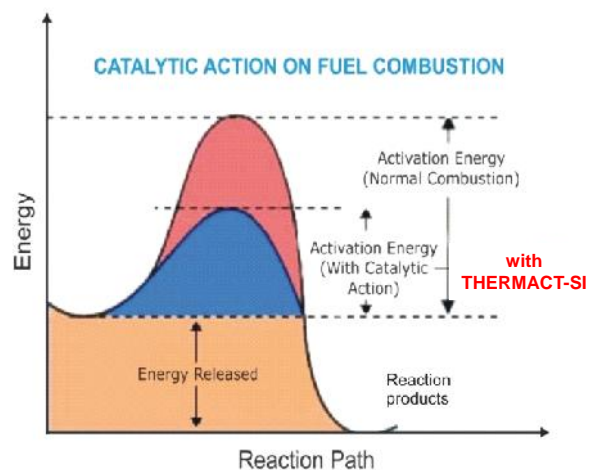
THERMACT-SI, is dosed from the injection side on the coal conveyor belt using screw feeder.



20 Kg Packing

Working Principle of **THERMACT-SI**

THERMACT-SI is a formulation of different types of catalysts. One of the catalysts reduces the Activation energy required for various reactions that take place in Carbonization process, thus accelerating the rate of these reactions.



THERMACT-SI reduces the activation energy required for various reactions, such as combustion of Coal & reduction reactions.

Hence,

- Combustion of Coal starts at a lower temperature.
- Reduction reactions of Iron ore with Coal are initiated at a lower temperature.
- The rate of Reduction of Iron ore is increased.

Catalyst in THERMACT-SI also converts inherent moisture in coal or coke to combustible by-products.



Benefits of **THERMACT-SI**

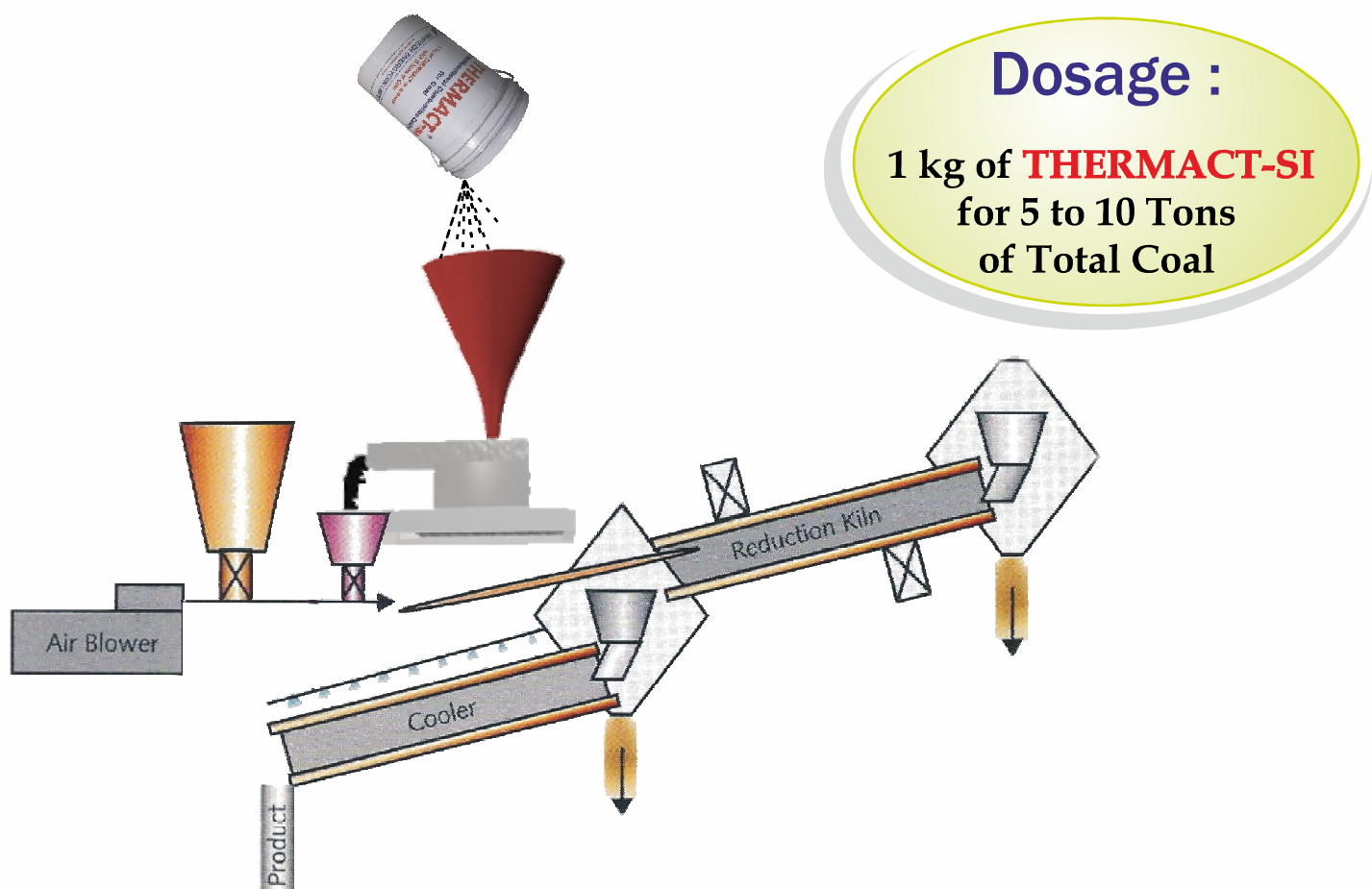
- Increases yield of CO, thereby aiding reduction process.
- Reduced cycle time and hence increase in through-put.
- Increases ash fusion temperature, thereby retarding accretion in Klin & increasing productivity.
- Reduces coal consumption by 2 to 5%.

Evaluation Procedure

A initial study (without THERMACT-SI) will be conducted for a period of 10 to 15 days during which, key parameters like Temperature profile, input feed quality, Coal consumption & Metalization ratio and any other relevant parameters will be measured. Thereafter, THERMACT-SI will be dosed at a suitable location for a period of 30 to 60 days and the same parameters will be measured again. The changes in the above parameters, after dosing, will be noted.

The Economics or Cost benefit analysis of the use of THERMACT-SI can be calculated based on the benefits obtained.

Method of Dosing



Technical Manpower

Our Technical services team comprising of skilled & qualified manpower will provide the necessary services to establish the performance of THERMACT-SI.

Reduction in Accretion or Ring Formation

Indian coal has high percentage of ash. This ash with other impurities fuses at high temperature. Due to this fusion, there is a ring formation or Accretion. The thickness of this ring gradually increases with more and more ash fusing on the kiln surface. When the thickness crosses certain critical limit, various problems such as overheating of the charge & restriction to the uniform flow of charge occur. In the extreme case, the plant has to go for shut down. Increase in the accretion ring leads to the gradual reduction in productivity before the shut down. Removal of this ring involves huge manpower and expenditure.

With the usage of THERMACT-SI, since the ash fusion temperature is increased, ash is not allowed to fuse on the kiln surface. This leads to reduction in ring formation, which increases the period between shut downs thereby increasing productivity and saving substantial amount of money.

Abhitech's Global Presence



ABHITECH ENERGYCON LIMITED

A/1020, Oberoi Garden Estates, Chandivali, Mumbai - 400 072. INDIA
Tel.: + 91-22 2847 9999 ● Fax: + 91-22 2847 9988
E-mail: abhitech@abhitechenergycon.com
www.abhitechenergycon.com



ABHITECH ENERGYCON GHANA LIMITED

A2/2, Coastal Estates D.T.D., Spintex Road,
Baatsona / Accra, Greater Accra Region, Ghana
Tel.: + 233 2671 59120 / 2626 10228
E-mail: abhitech.wa@abhitechmail.com



ABHITECH ENERGYCON s.r.o.

Gen. Píky 2901/22, 1B/3036, Moravská 70100,
Ostrava, CZECH REPUBLIC
Tel.: + 420 606 241 274
E-mail: europa@abhitechenergycon.com

