

**AB Catalyst**

SUPERIOR COMBUSTION

# Radically Improved Combustion

AB CATALYST is a combustion catalyst that reduces fuel consumption, improves reliability, and reduces emissions for industries that burn coal and biofuels.



# The Future of Combustion

**AB Catalyst is a combustion catalyst designed to improve fuel efficiency, reduce emissions, and enhance the reliability of industrial boilers and kilns that burn coal or biofuels.**

The product minimises slagging and fouling, allowing for the use of lower-grade fuels without sacrificing performance. Scientifically validated by institutions like Inner Mongolia University and the China Coal Research Institute, AB Catalyst optimises combustion, leading to significant reductions in fuel consumption and harmful emissions. It is eco-friendly, non-toxic, and easy to use, requiring minimal maintenance.





**The catalyst  
reduced slag  
buildup on  
furnace and  
convection  
section tubes.  
We have no  
hesitation  
recommending  
this product.**

- Chief Engineer Mechanical  
Maintenance | Power Station

The catalyst has the ability to **reduce the initial ignition temperature of coal/wood/fossil fuel**. This in turn gives a head start to the actual commencement of the combustion process.

Normally, the hydrocarbons and soot/tars/Sulphur in the coal make-up, tend to evaporate before normal ignition temperature and thus before it is allowed to ignite/burn. **It then leaves the combustion zone as a wet unburnt and sticky substance to adhere to the interior walls and tubes as it moves toward the smoke stack.**

**This poor combustion also creates the black sooty emissions** of the unburnt soot plus a long-term **hard build-up inside the boiler. It bakes harder with further build-up in future.**

By reducing the ignition temperature, **combustion and burnout takes place at a lower temperature (and do not evaporate as before) into softer, drier more friable dust/fine ash**, if and when it attaches to the boiler tubes. The dry soot/hydrocarbons leave the smokestack as grey/white smoke, completely combusted. Remember this includes some of the SO<sub>2</sub> in the coal that is reduced to sulphates that are dumped in the ash.



### **FIRE TUBE BOILERS**

Westville Prison boiler 3 months without AB Catalyst.

With AB Catalyst after 6 months usage.



### **SUPERHEATER TUBES IN WATER TUBE BOILERS**

Hulett's Refinery without AB Catalyst for 5 weeks.

Hulett's Sugar Refinery 3 months using AB Catalyst.

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# How it Works

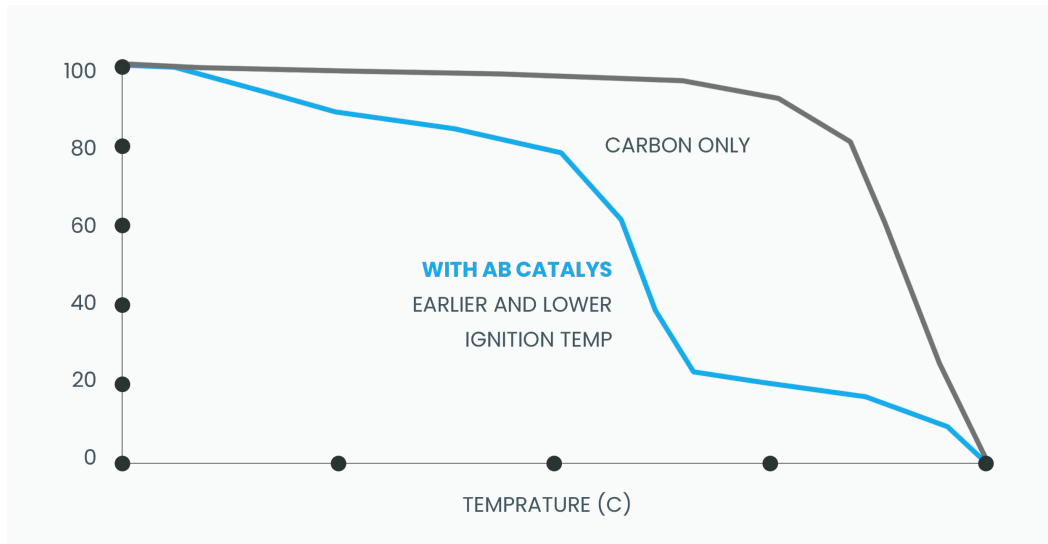


DIAGRAM ONE

Ignition Temperature

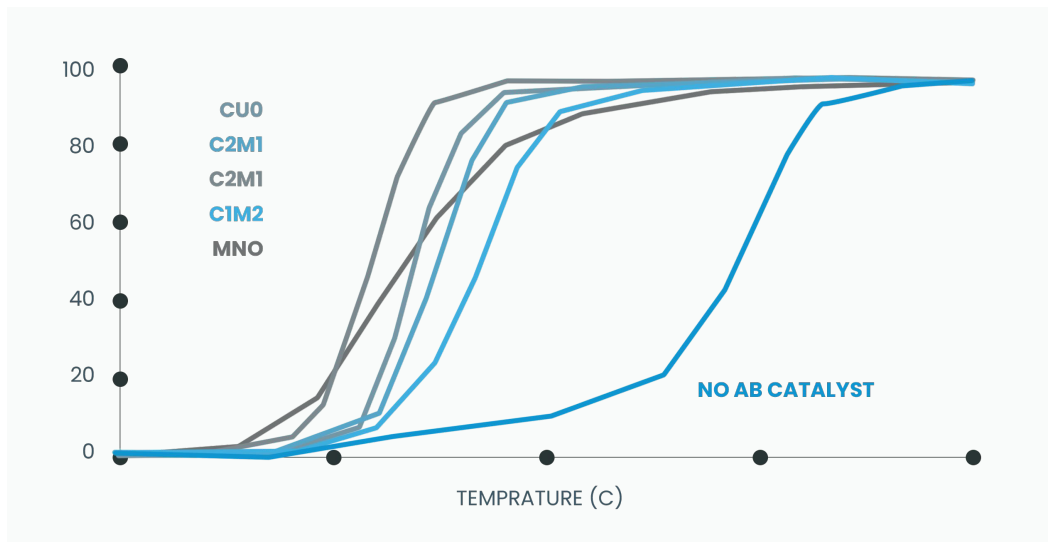


DIAGRAM TWO

Soot conversion with AB Catalyst

The fact that you are now combusting these hydrocarbons/soot, you are creating more heat with newfound “fuel” and in fact require smaller quantities of coal normally used to perform this.

Here is where we estimate the **3%** improvement of your coal savings, and this can be increased two or three-fold (as with other clients) with this improved combustion being utilized with efficient setting and fine tuning of your boilers.





## How it Works



At the same time the catalyst increases the fusion temperature of the ash. **This means the ash does not form molten “lava” because it now combusts before it melts.** In boiler terms it is the normal formation of hard molten clinker chunks that mess up the inside of your boiler that now “burn out” leaving fine soft ash instead.

Result is that the boiler tubes including the super heater section has very little build-up to restrict air flow and reduced clogged water tubes and stop tube walls from build up for heat penetration to the water. **The boilers have far longer operating periods between cleanings.**

# A few of the Sectors we Service



**MANUFACTURING**



**ENERGY**



**AGRICULTURAL**



**TRANSPORT**



**MINING**



**CONSTRUCTION**



**PETROCHEMICAL**



**MARINE**



**HOSPITAL**



**FOOD SERVICES**

# Backed by Science

**Our product is backed by extensive research and testing by top scientists and universities.** These studies confirm its effectiveness, proving it performs as claimed. Rooted in evidence-based science, our product delivers results you can trust.



 **中国中煤能源股份有限公司**  
中煤 CHINA COAL ENERGY COMPANY LIMITED

- 
- 4.37% increase in heating value
  - Stronger CO oxidation capability
  - Significant combustion improvement
  - Non-toxic, non-corrosive, safe for boilers
  - Lower ignition temperature
  - Increased combustion rate
  - Reduced carbon burnout temperature



"The catalyst combustion effect of AB Catalyst is obvious. No matter the indices of heating value of pulverised coal, or the conversion rate of CO and the burnout time of pulverised coal, the tests of each group all prove that AB Catalyst has significant combustion effects on pulverised coal."



China Coal Research Institute

# What Next?

Looking to optimise your energy solutions?

Book a consultation with our experts today and discover how we can enhance your operations with efficient and sustainable combustible energy strategies.

AB Catalyst Africa (PTY) Ltd  
Unit 3 and 4  
Inanda Business Park  
105 Brackenhill Road  
Waterfall | KZN | 3610 | South Africa



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+27 83 324 5404



info@abccatalyst.co.za



www.abccatalyst.co.za