



We'll NOx your SOx Off!

Fireside Combustion Catalyst



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The Problem

**SO_x & NO_x emissions caused by
Industrial boilers & power stations:**

- Pollute the Environment**
- Toxic & Poisonous**
- Creates Smog**



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**Chinco Fireside
Treatment**

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Solutions

SO₂ Reduction Treatments available

- Flue Gas Desulphurisation (FGD) System
- Pre Combustion Coal Washing
- Chinco Fireside Catalyst



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Flue Gas Desulphurisation (FGD) System

- ✓ Installation of an FGD system is extremely expensive
- ✓ Extreme amounts of water is required
- ✓ Current normal use is 3 million m³ on a power station
- ✓ Major quantities of sorbent will have to be added.
- ✓ Cost of sorbent will rise exponentially with demand
- ✓ Shutdown of unit to retrofit FGD system is approx 3 months



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Pre Combustion Coal Washing



- ✓ Removes mineral and not organic Sulphur
- ✓ Washed coal is more expensive than unwashed coal
- ✓ Supplier washing plants will need to be upgraded if and when sufficient water supply is available
- ✓ Washed coal prices will increase. Demand determines cost
- ✓ The impact on environment would be enormous
- ✓ There will be a significant wastage of an already scarce water supply for this purpose.
- ✓ Coal washing is not sustainable

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Our solution - Chinco Fireside Catalyst



- ✓ **NO** capital outlay
- ✓ **NO** shutdown needed
- ✓ Efficiency & combustion will be increased
- ✓ Conforms to ALL local & international standards
- ✓ Most cost effective solution available
- ✓ Sustainable – 100% Organic-Metallic Compound
- ✓ Non-Toxic, Non-Poisonous & Non-Magnetic
- ✓ No damage to ecosystem if spilled

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Our solution - Chinco Fireside Catalyst

***... an effective process, cleanly and safely
combusting coal or other carbonaceous
material in a manner which enhances the
environment by reducing emission of
pollutants such as nitrogen oxide (NO_x) &
sulphur dioxide (SO_x & black smoke) during
the combustion process.***

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Tried & Tested

Chinco Fireside contains natural environmentally friendly additives which result in a highly effective combustion catalyst.

Tried and tested in the South African industrial market over many years.

sappi



mondi

Tiger Brands



sasol
reaching new frontiers



DUNLOP

Clover
It's all you need

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How does it Work?

**Chinco Fireside Catalyst drastically minimises
bi-products of combustion:**

**SULPHUR DIOXIDE (SO₂)
OXIDES OF NITROGEN (NO_x)**



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OXIDES OF NITROGEN (NO_x)

NO_x is a by-product of combustion – pollutant contributing to ozone, particulate matter and acid rain. Thermal NO_x is the largest contributor to the overall total NO_x.

Under high temperature of combustion (1 425 °Celsius) Thermal NO_x is formed. $\text{N}_2 + \text{O}_2 + \text{Heat} \rightarrow \text{NO}_x$

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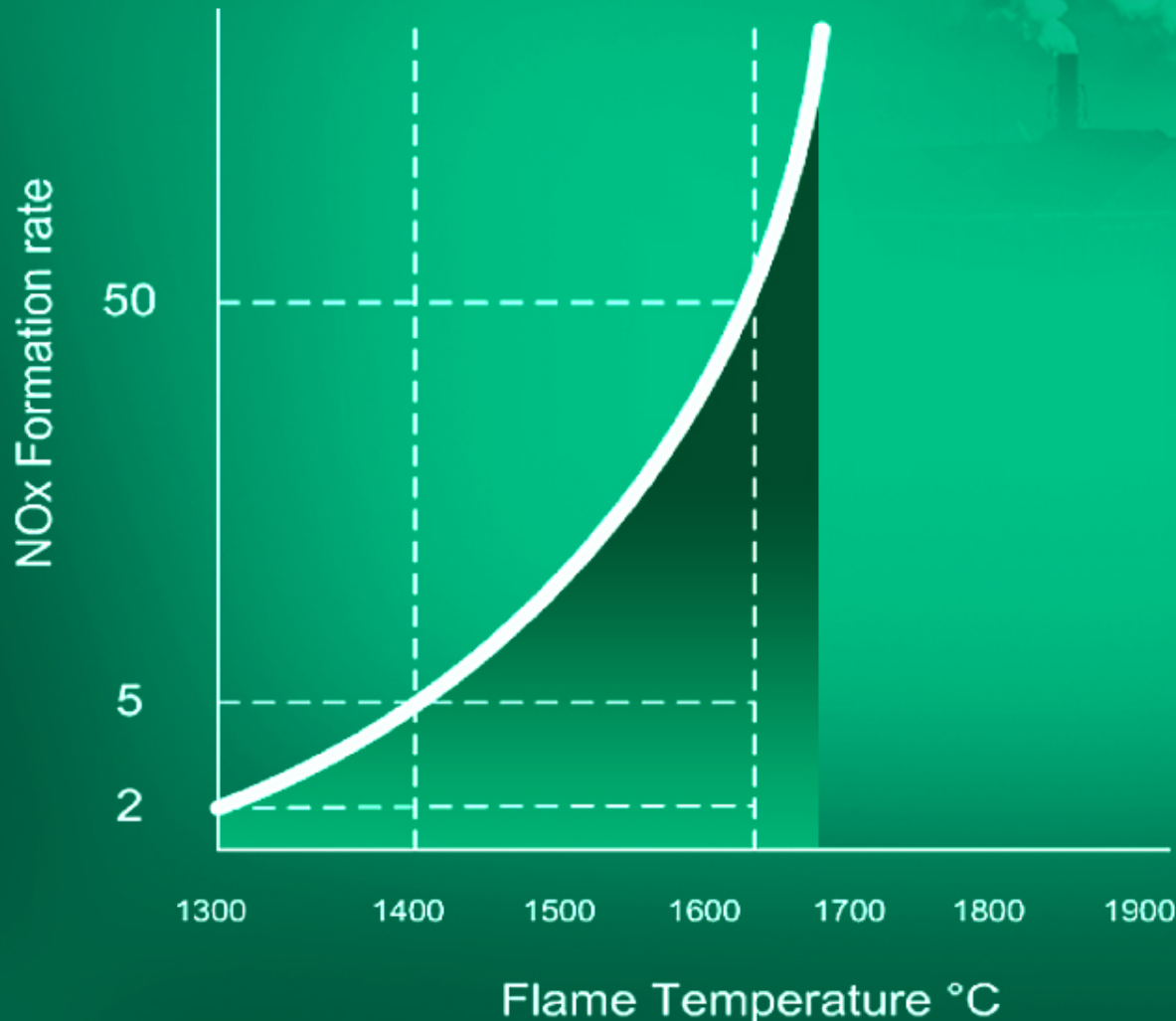


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OXIDES OF NITROGEN (NO_x)

Boiler NO_x formation



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How does a Coal Catalyst Work?

- ✓ Chinco enhances combustion, improving boiler efficiency by reducing the carbon in ash after combustion.
- ✓ Reduce fuel costs
- ✓ Carbon in Bottom ash at Rooiwal Power Station reduced from 1.97% to 0.72% by using Chinco.
- ✓ Efficiency improved by 1.25%.



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How does it Work?

- ✓ Chinco has a high specific surface area value and a high environmental pollutant removal performance. It is useful in the absorption and oxidation/removal of the odour components discharged from the stacks such as NO_x, SO_x, VOC, together with unburned components, hydrocarbons, aldehydes and the like which are generated by incomplete combustion.
- ✓ Ash fusion temperature is raised resulting in a more friable compound instead of the very hard clinker formation. This is more easily removed with soot blowers.
- ✓ Less insulating fireside deposits and thus less transfer problems.

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How does it Work?

- ✓ Less soot blowing needs to be done due to improved combustion process. This saves wasted energy in producing less steam for soot blowing.
- ✓ Reduction of particulate emissions.
- ✓ Improved combustion means less carbon in ash thus less handling and disposal of ash.
- ✓ Chinco improves precipitator efficiency by causing more particles becoming positively charged and hence increases removal rates

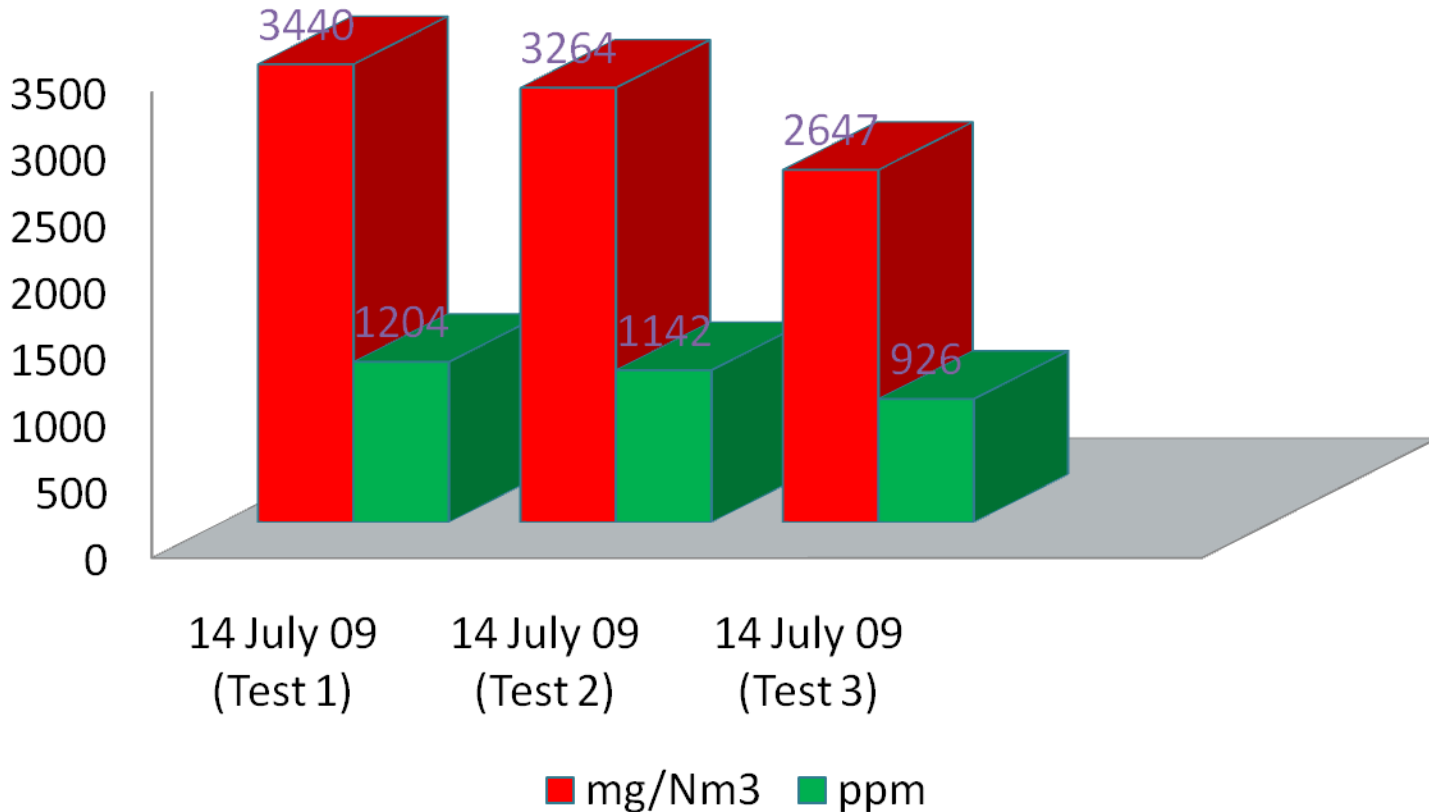
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SOx Emissions before Catalyst

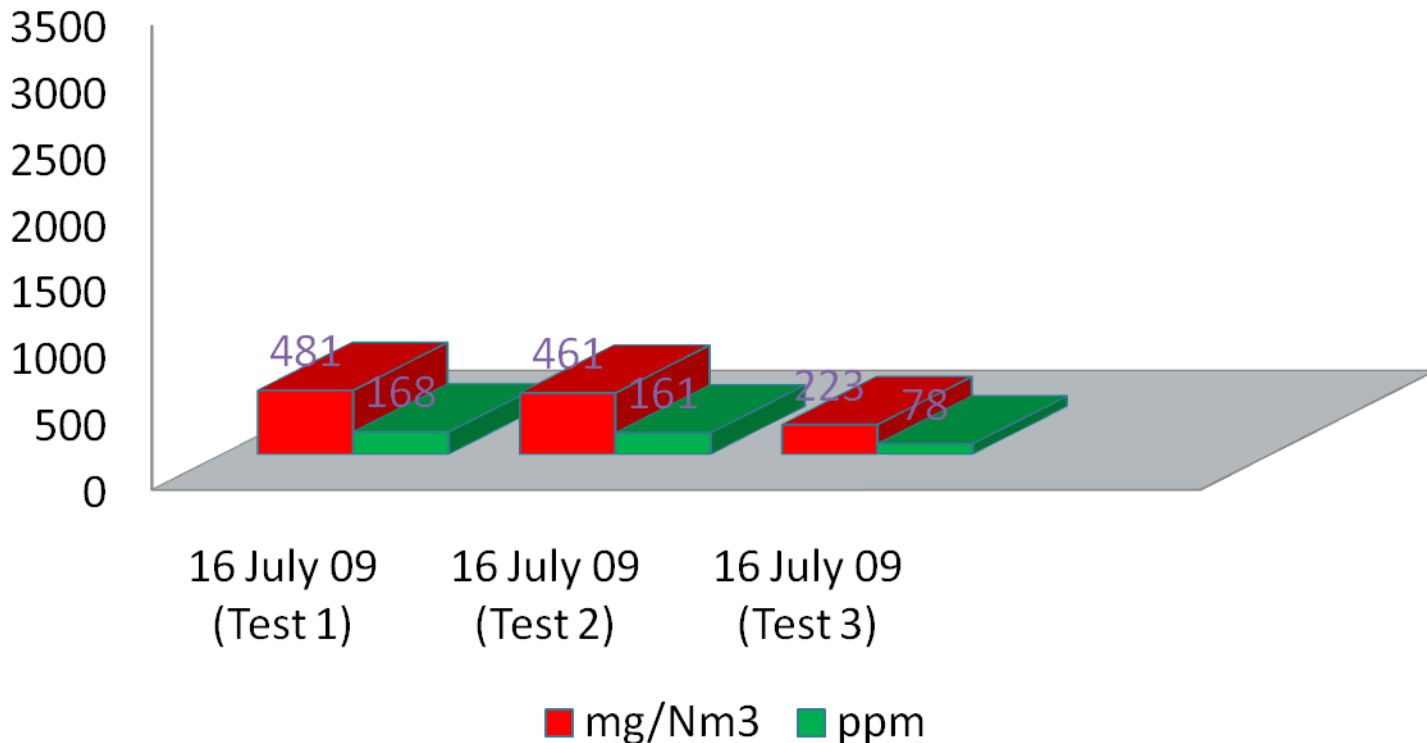


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SOx Emissions after Catalyst

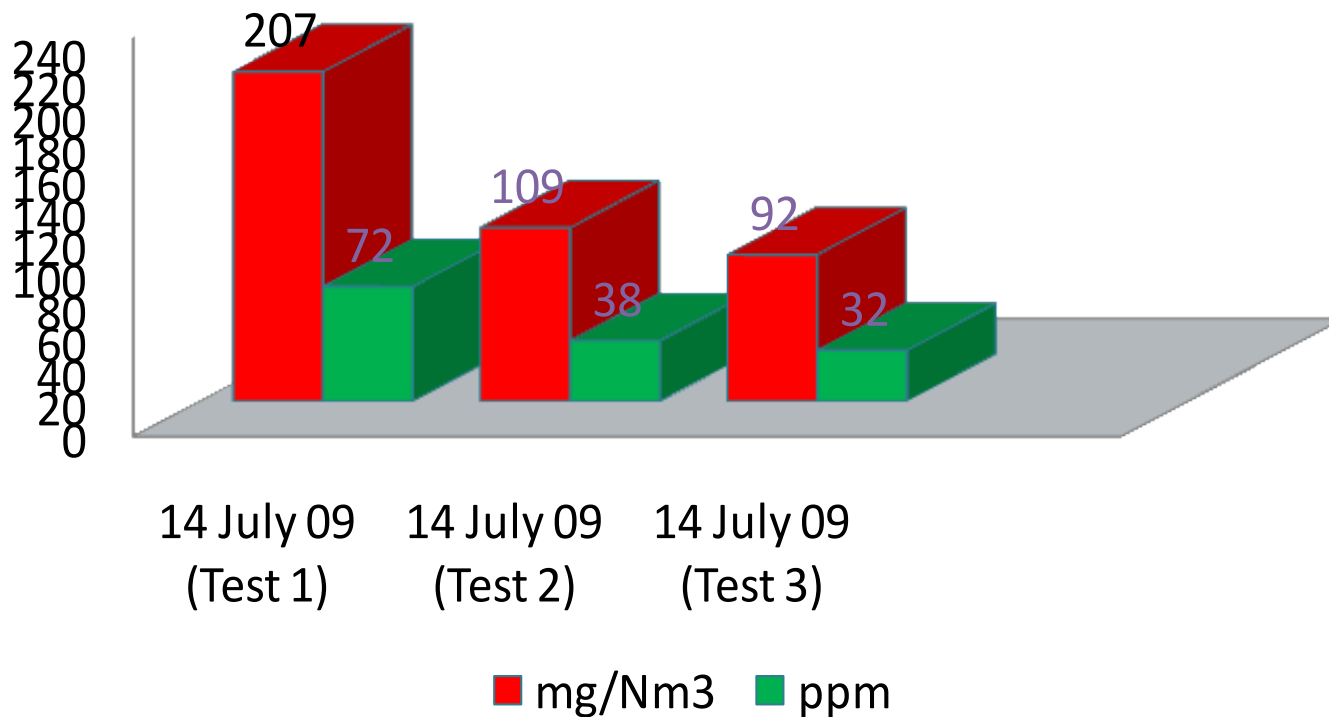


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NOx Emissions without Catalyst

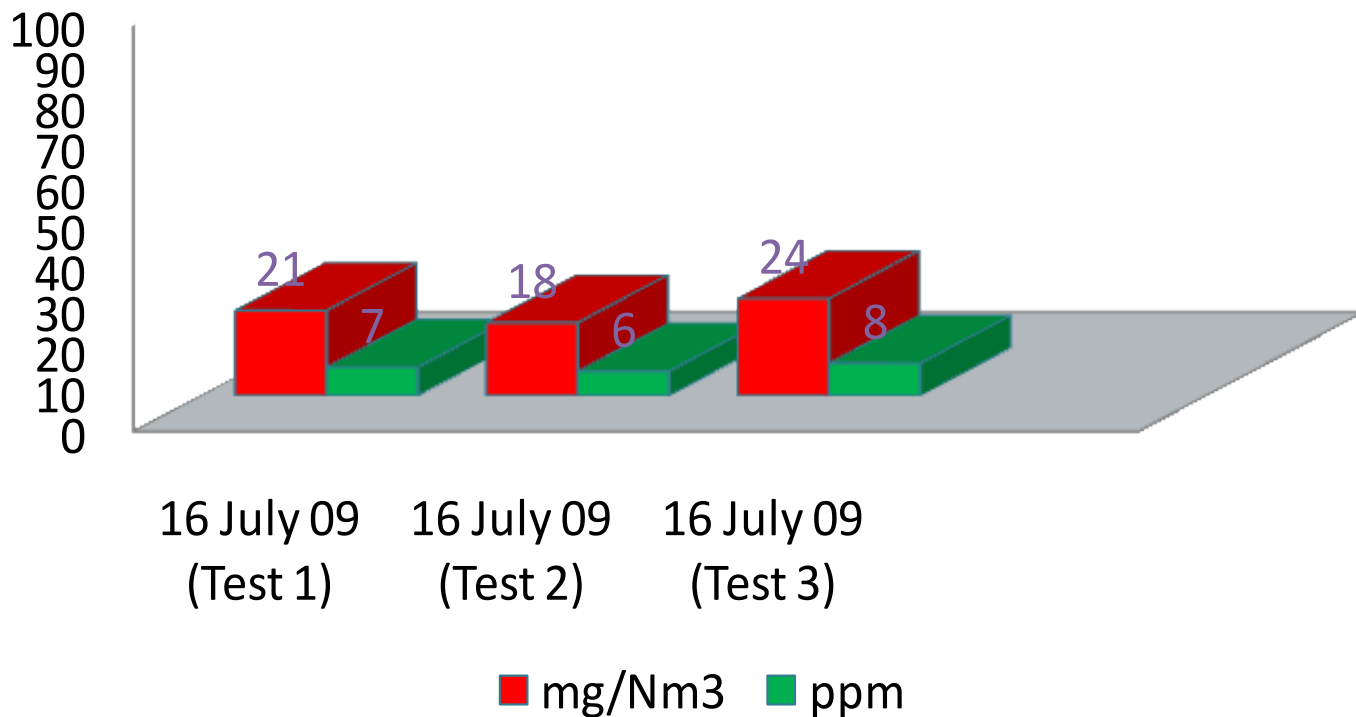


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NOx Emissions with Catalyst



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The Product



- ▶ **Chinco Fireside Treatment.**
- ▶ **Dosage 200 grams per ton coal.**
- ▶ **Organic-Metallic Compound.**
- ▶ **100% Catalyst.**
- ▶ **Raw Manganese Ore Base**
- ▶ **Non – Toxic.**
- ▶ **Non – Poisonous.**
- ▶ **Non – Magnetic.**
- ▶ **No Damage to Land or Ecosystems when Spilled.**

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