

COAL CATALYST

for Improved Combustion and
Environment



ASIA COAL CATALYST COMPANY

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Coal Chemical & Coal Conversion

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What is a catalyst?

- A compound or element that can increase the rate of a chemical reaction
- What does Chemical Catalyst-88 (CC-88) do?
 - Promotes the physical and chemical reactions that occur during combustion
 - Releases more oxygen to the carbon contained in the coal





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What does CC-88 accomplish?

- In the combustion chamber
- Stack emissions
- Other aspects





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Combustion Chamber

- Improves combustion efficiency – lowers fuel feed rate
- Removes and controls slagging
- Reduces excess air





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Emissions

- Particulate
- Gaseous
- Future

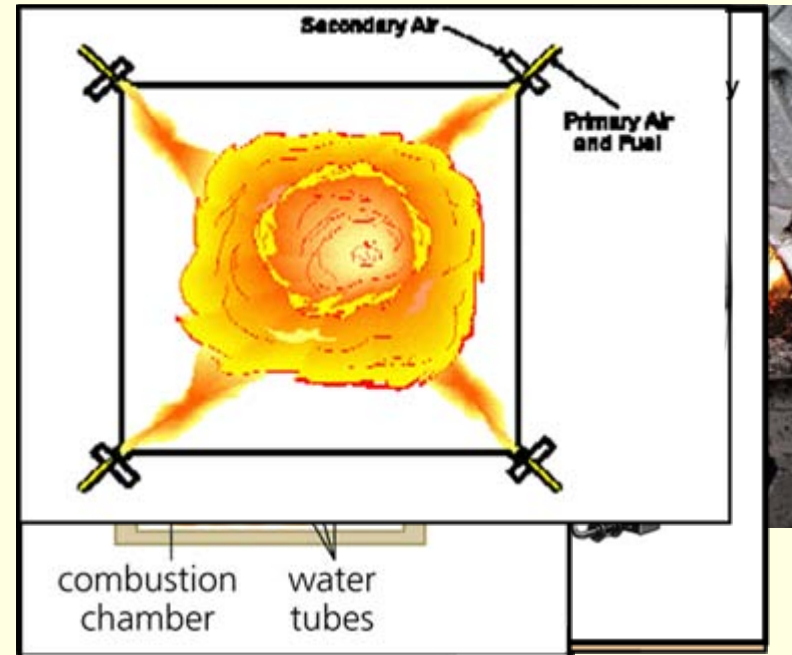




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How is CC-88 used?

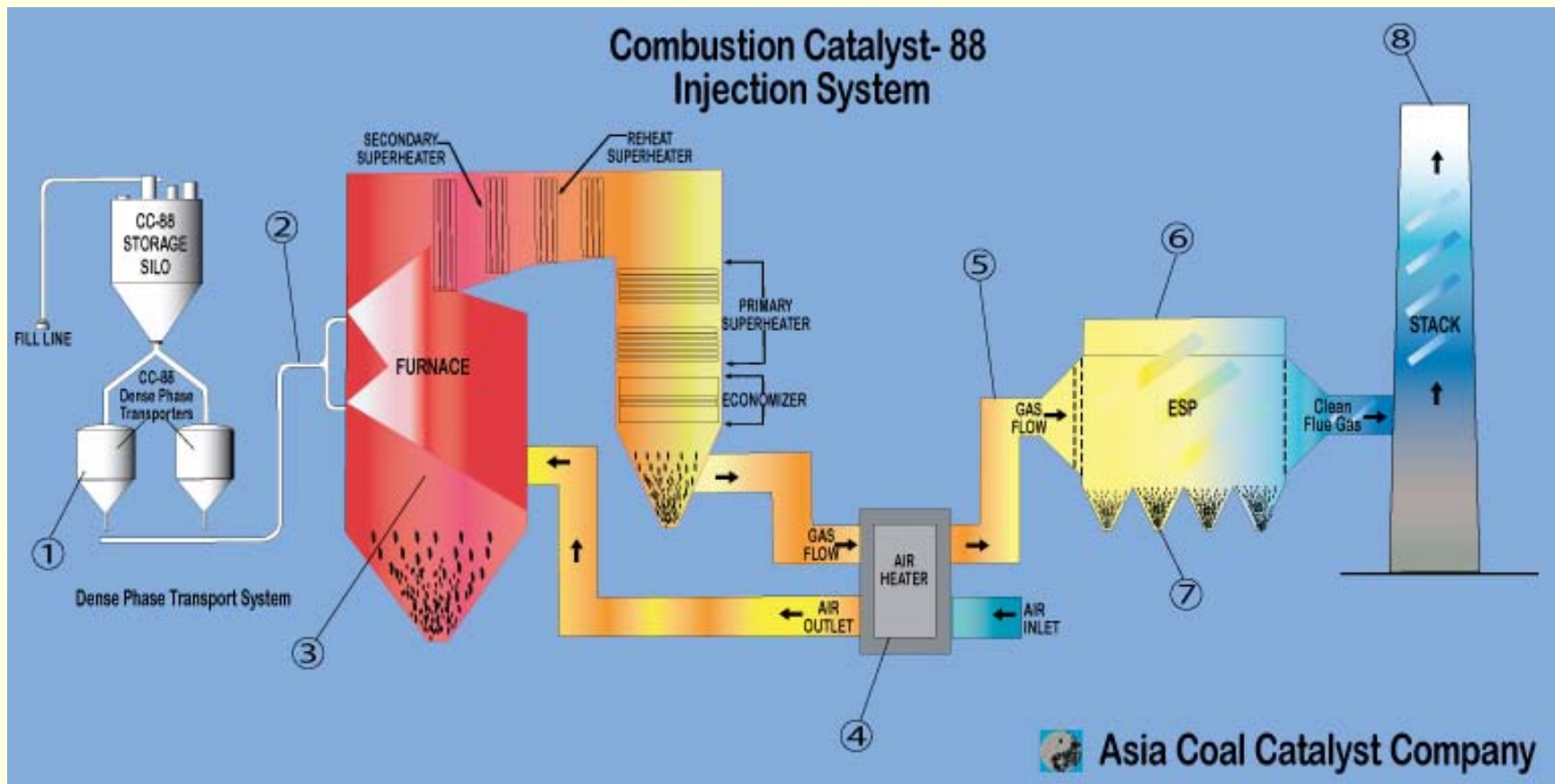
- Injection methods
- Feed rates
- Types of fuels
- Types of furnaces / boilers





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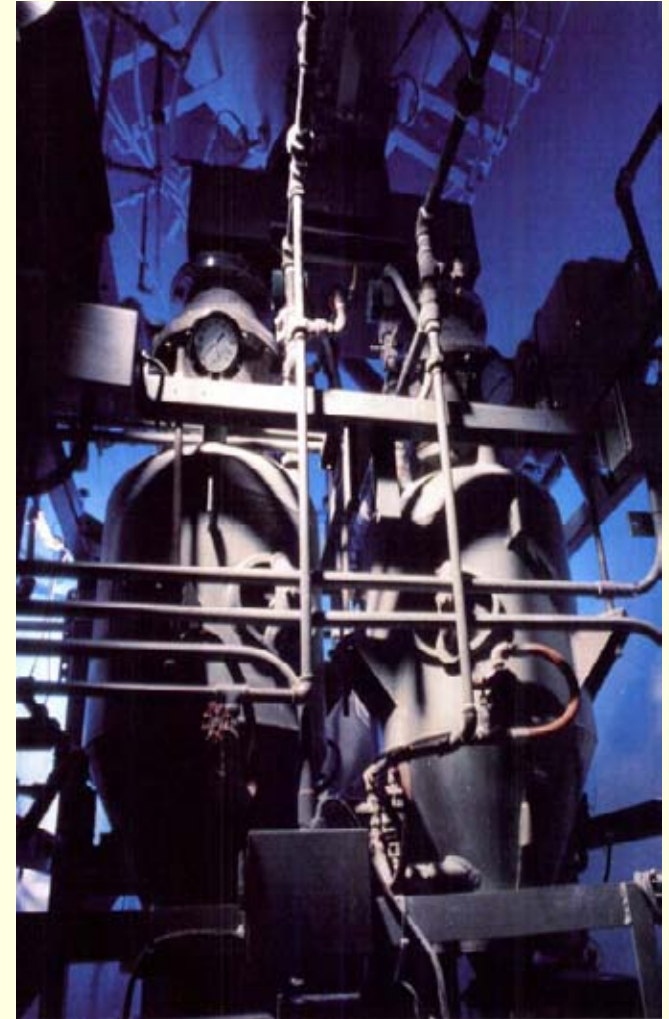
CC-88 Injection System





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Dense Phase Transporters

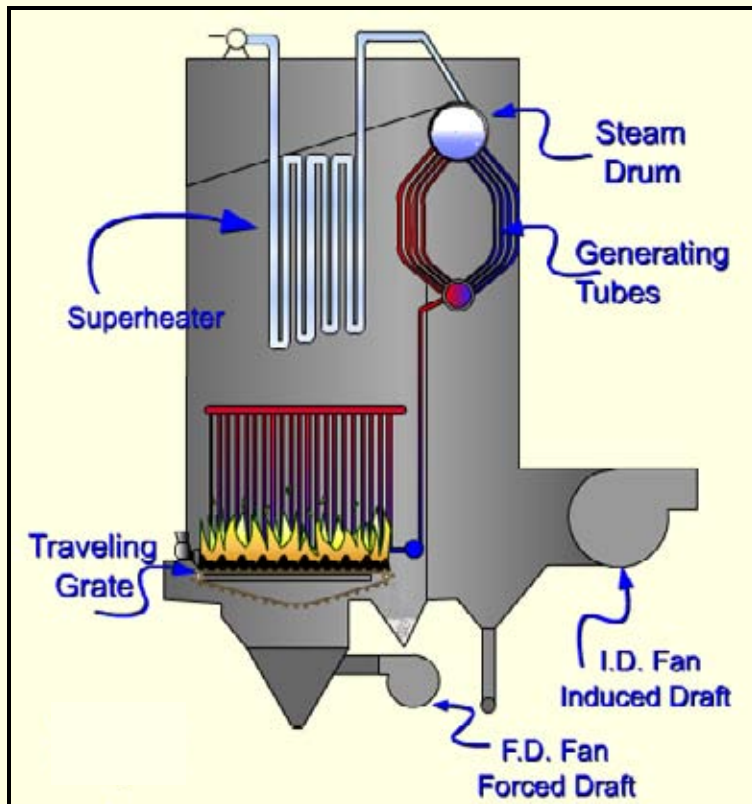




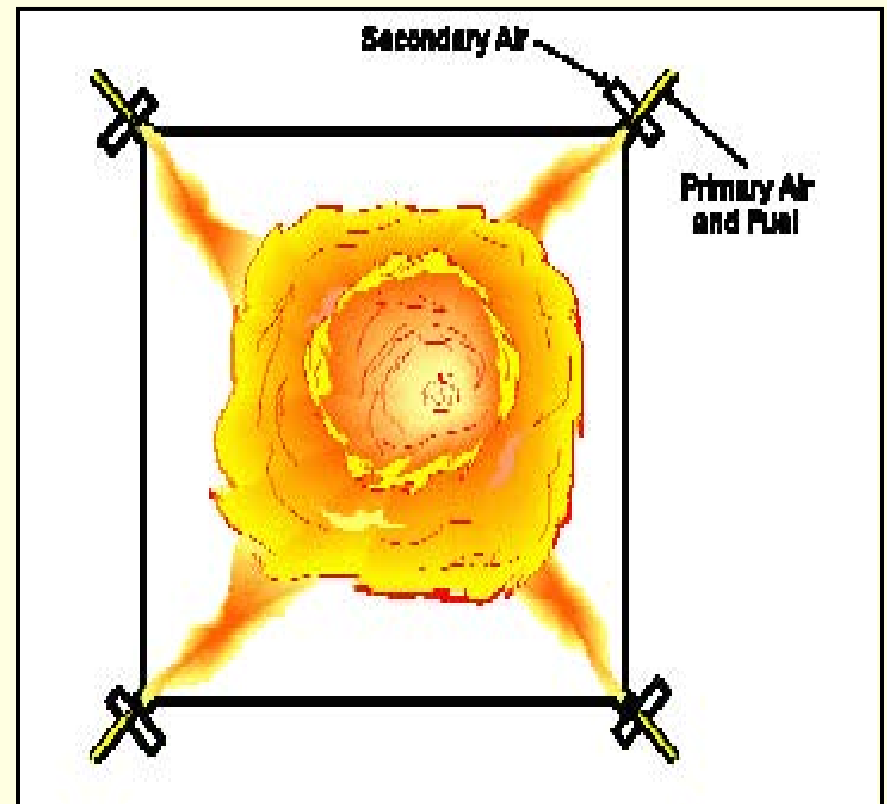
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Types Of Boilers

STOKER FIRED



PULVERIZED COAL





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Testing

- Most recent results
 - 15% improved combustion efficiency on a Shaanxi sub bituminous raw coal
- Future
 - Improved catalyst performance
- Demonstrations
 - Full Scale Site Testing
- Operating Units





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Most recent lab test results –
China's coal

- Coal ignites faster
- Burns more efficiently
- Burns with less smoke
- Realizes 75% greater weight loss
- Produces 50% less residual carbon



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Benefits

- Environmental benefits
- Fuel savings
- Monetary savings
- Return on investment

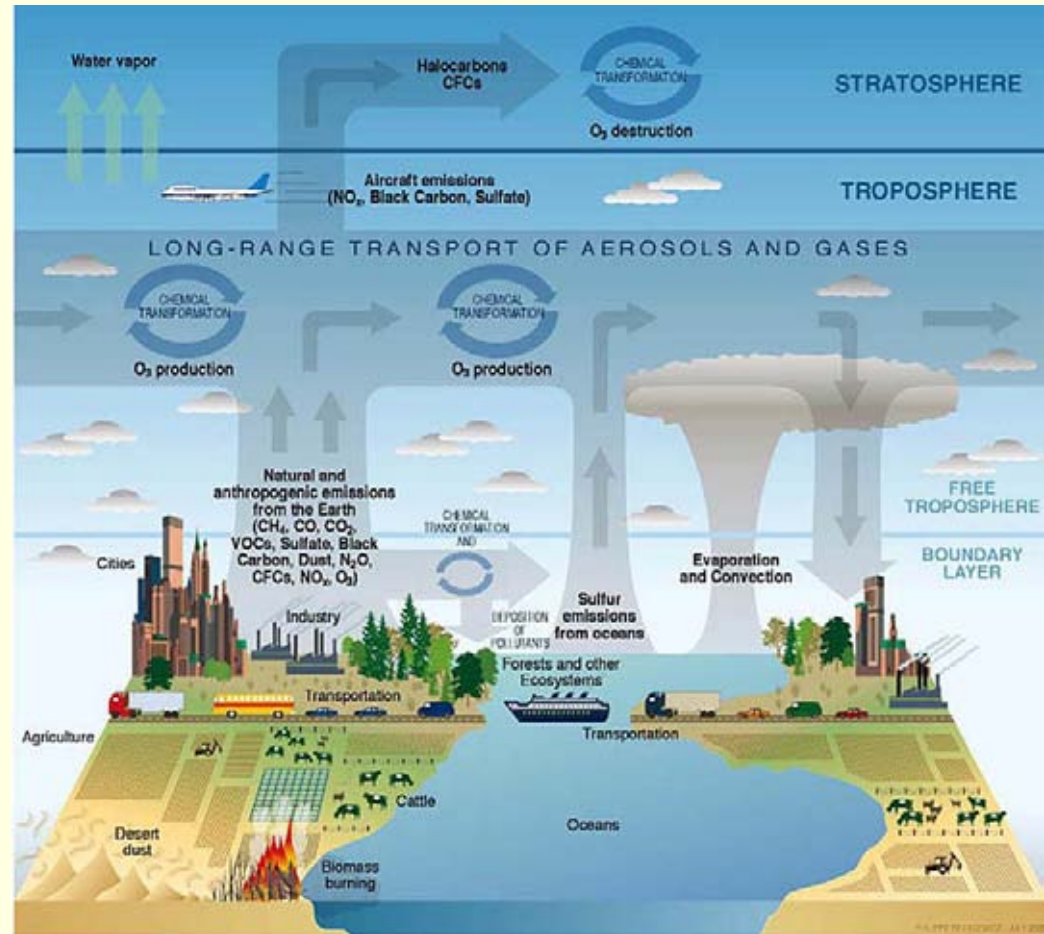




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Environmental Benefits

- Reductions of
 - Particulates
 - SO₃
 - SO₂
 - CO₂
 - NO_x
 - Hg and others





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Fuel Savings – A Clean Coal Technology

- Reduced fuel consumption through improved combustion efficiency
- Option to burn higher sulphur coals
- Reduced capital and operation expense for scrubbers



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Monetary savings

- Example:

- 50,000 Kg/hr steam producing boilers
- 40,000 tons per year coal feed
- 3% improvement to combustion efficiency

\$50,000 net fuel savings per year





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Return on Investment - ROI =
Savings less Expenses

■ Savings

- Fuel
- Longer equipment life
- Fewer outages
- Less purchased power
- Ash disposal
- SO₂ scrubbers
- Lower emissions

■ Expenses

- CC-88
- Injection system



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Q&A

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"CC-88: HELPING TO GREEN THE WORLD"