

ADVANTAGE

**BETTER,
SAFER
COKE
CONTROL**

**FOR
ETHYLENE
PLANTS**

DA2632

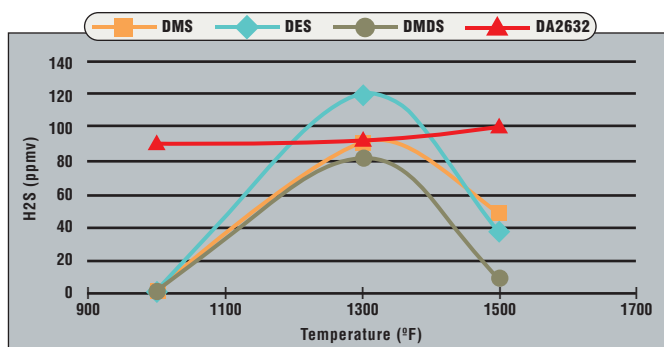
SAFER, MORE EFFECTIVE COKE CONTROL

Control furnace tube coke with an easy-to-use polymeric sulfur compound that outperforms DMDS: Dorf Ketal DA2632

Starts Working Sooner, Keeps Working Longer

DA2632 provides better, more consistent coke control over the full length of every furnace tube. It generates more H₂S at lower temperatures and it keeps generating consistently high levels of H₂S over a wider temperature range than DMDS and similar compounds.

The result is superior passivation of metal surfaces in furnace tubes and transfer line exchangers, and better, longer-lasting control of the catalytic process that forms coke deposits.



Extends Run Time

Every shutdown to de-coke a furnace and clean transfer line exchangers consumes energy and steam, shortens tube life and risks costly damage. DA2632 lets you run these systems longer

than DMDS. You'll generate more revenue while reducing costly maintenance for decoking.

Easier, Safer Handling

DA2632 has a much higher flash point than DMDS, and it is far less toxic. There's no objectionable DMDS odor either, just a mild hydrocarbon scent. And unlike DMDS, *DA2632 is not regulated for transportation*, simplifying shipment and storage options.

DA2632 Reinvents Coke Control

- Longer run time, less decoking
- Easier to handle, store and control safely
- Reduces energy consumption
- Improves throughput and product quality
- No objectionable odor
- Compatible and effective with all feedstocks
- Consistent quality – no metal or halogen impurities

Coke Chemistry Explained

Coke forms in a series of oxidation and reduction reactions catalyzed by the hot metal surfaces in pyrolysis furnaces and transfer line exchangers.

- $R-CH_2-CH_3 \rightarrow RCH=CH_2 + H_2$
- $R-CH_2-CH_3 \rightarrow R^{\cdot} + C + 3H$ (Oxidative Catalytic Conditions)
- $C + O_2 \rightarrow CO_2$ (Oxidative Catalytic Conditions)
- $C + 1/2O_2 \rightarrow CO$ (Reductive Catalytic Conditions)
- $CO_2 + C \rightarrow 2CO$ (Reductive Catalytic Conditions)

Sulfur passivates the metal, slowing these reactions, but the way the sulfur is generated makes a big difference in safety and performance.

The innovative polymeric sulfur in DA2632 is inherently less toxic than DMDS, and it liberates protective sulfur at a more constant rate over a wider temperature range.

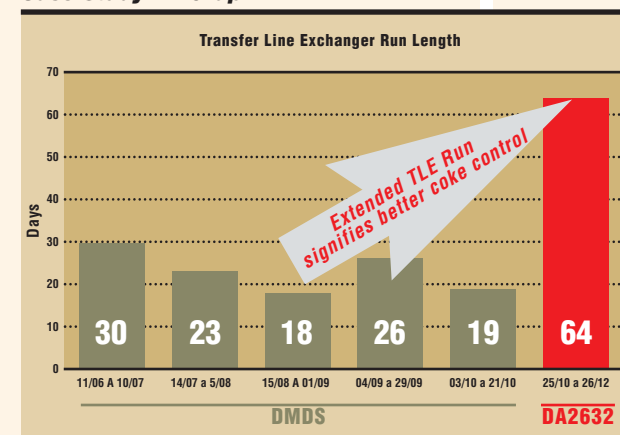
CASE STUDY

DA2632 Increases Run Length

A large ethylene plant using light naphtha as feedstock compared DA2632 with DMDS at exactly the same 75ppm dosage.

Tube metal temperatures were better-controlled with DA2632, more than doubling TLE run length from an average of just over 23 days to 64 days.

Case Study 1 - Graph 1



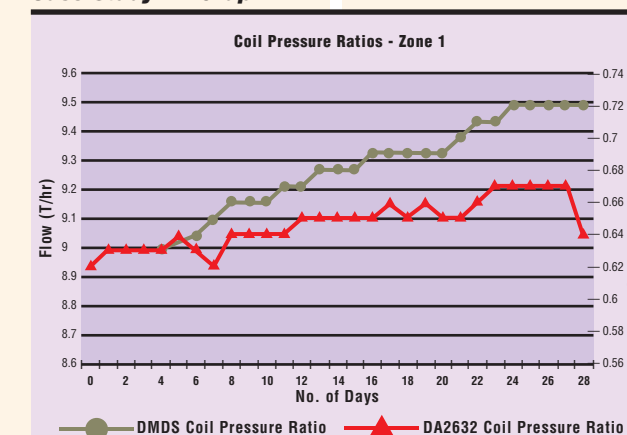
CASE STUDY

DA2632 Improves Furnace Coil Pressure Control

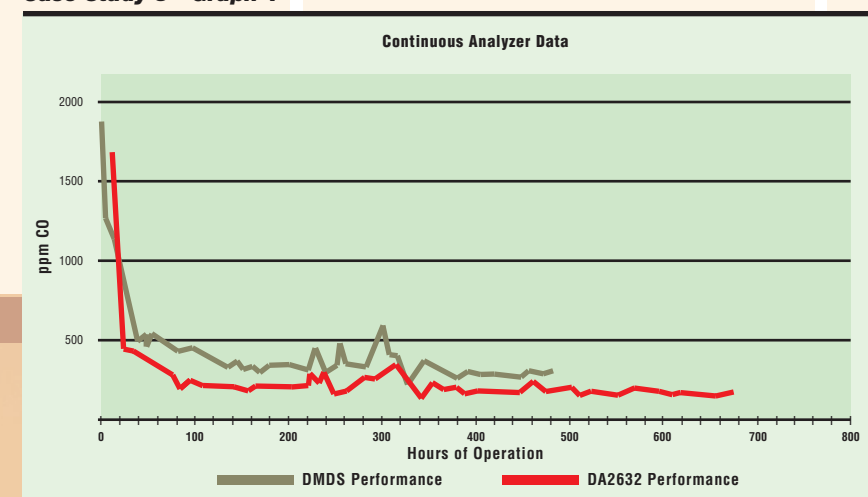
A large gas-fed ethylene plant (ethane and propane) benchmarked coke control with DA2632 and DMDS at the same 100ppm dosages by comparing furnace coil pressure ratios over a 30-day period.

The ratio of inlet coil pressure to outlet coil pressure increased at a substantially slower rate with DA2632 treatment, indicating slower coke accumulation.

Case Study 2 - Graph 1



Case Study 3 - Graph 1



CASE STUDY

DA2632 Provides Superior Carbon Monoxide Control

A large ethane-fed ethylene operation compared DA2632 and DMDS performance at the same 100ppm dosage. Carbon monoxide effluent content was used to evaluate performance.

DMDS treatment required four days to meet the plant's 400ppm carbon monoxide benchmark and then stabilized at approximately 300ppm.

DA2632 met the plant's 400ppm benchmark in a single day and then stabilized at 200ppm – half the plant's 400ppm target. And run length was extended by 50 percent.

Extensive field experience in some of the world's largest ethylene plants demonstrates that DA2632 provides superior coke control.

Get better, safer control of coke with DA2632 from Dorf Ketal

Call today.

INNOVATIVE TREATMENT

FOR BETTER, SAFER COKE CONTROL

Discover what Dorf Ketal can do for you.



*Innovation isn't just what we do.
It's who we are.*TM

E-mail: Innovation@dorketal.com
www.dorketal.com

Discover what Dorf Ketal can do for you.

Dorf Ketal Chemicals LLC
11200 Westheimer Road – Suite 400
Houston, Texas 77042
USA
Tel: +1-713-343-2377

Dorf Ketal Chemicals (I) Pvt. Ltd.
#1 Dorf Ketal Tower, D'Monte Street
Orlem, Malad (W), Mumbai 400 064
Maharashtra, India
Tel: +91-22-2883-3900

Dorf Ketal Chemicals (I) Pvt. Ltd.
Manama, Kingdom of Bahrain
Tel: +97-33-678-0547

Dorf Ketal Brasil Ltda
Rua Luiz Manoel Gonzaga 450/601
Porto Alegre – RS – Brasil
CEP: 90470-280
Tel: +55-51-3061-2211

Dorf Ketal Chemicals Shanghai Ltd.
City Center, 100 Zunyi Road, Unit 1504, Tower A
Shanghai 200051, China

Dorf Ketal B.V.
De Ring, Weegschaalstraat 3
5632 CW Eindhoven
Netherlands
Tel: +31-40-290-1385

Dorf Ketal Chemicals Pte. Ltd.
#04-56 German Centre
25 International Business Park
Singapore 609916
Tel: +65-6562-8250