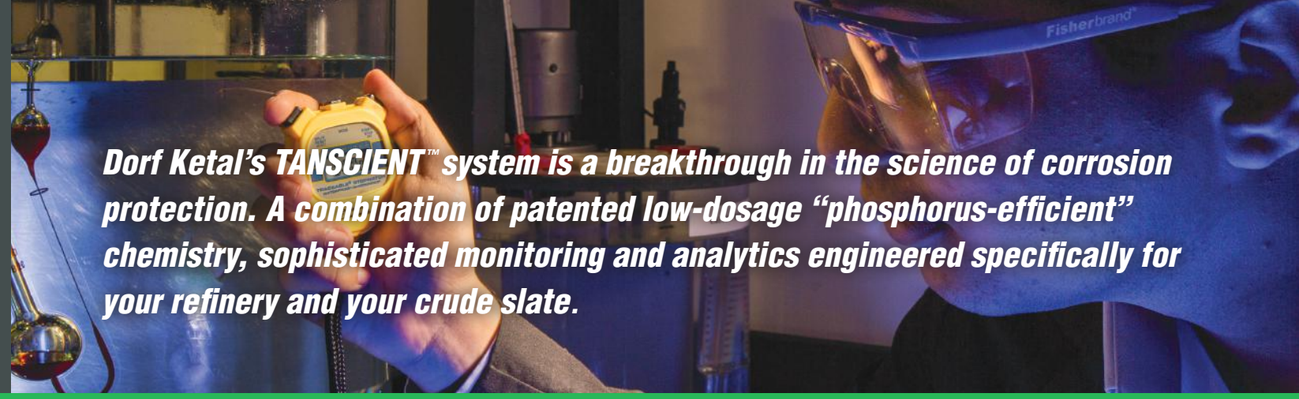
TANSCIENT™

Smarter, safer corrosion control for naphthenic acid crudes

A BREAKTHROUGH IN THE SCIENCE OF CORROSION PROTECTION

DORF KETAL™

Confidently process higher tan crudes with up to 80% less phosphorus with TANSCIENT™



Dorf Ketal's TANSCIENT™ system is a breakthrough in the science of corrosion protection. A combination of patented low-dosage "phosphorus-efficient" chemistry, sophisticated monitoring and analytics engineered specifically for your refinery and your crude slate.

Peace of mind and unmatched flexibility

TANSCIENT™ chemistry delivers the cleaner, safer protection you need to process high-margin, high-TAN crudes with far less phosphorus than other inhibitors.

TANSCIENT™ is engineered for flexibility as well as reliability with protection you can count on to safely process a wider range of naphthenic acid crudes with fewer worries.

Less phosphorus means less risk

Conventional HTCI phosphate chemistry is highly acidic, thermally unstable and marginally oil soluble. This acidity can weaken and release pre-existing iron scale. Only a small fraction of the phosphorus in these compounds reacts with sulfur and iron to passivate metal surfaces.

The rest breaks down into insoluble precipitates and washes away with dislodged iron scale, where it can cause fouling and compromise hydrotreaters and other downstream systems.

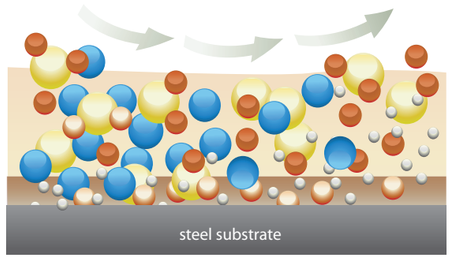
Better passivation, lower dosages, less fouling

The TANSCIENT™ system is dramatically different. TANSCIENT™ chemistry is a thermally stable, oil-soluble polymeric triester that delivers cleaner, more effective passivation with far less phosphorus.

TANSCIENT's low acidity doesn't disturb existing protective scale, and TANSCIENT™ passivation is stronger and more resistant to system upsets.

THE BOTTOM LINE:

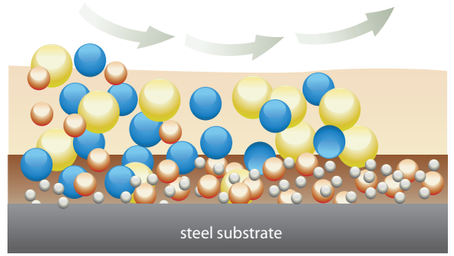
- Better protection at lower dosages
- More flexibility for TAN variations
- Less risk of hydrotreater fouling
- More durable, reliable passivation
- Minimizes downstream phosphorus fouling
- More effective passivation
- Low acidity, easy to feed
- No environmental impacts
- Will not distill into overheads



CONVENTIONAL INHIBITORS

Conventional HTCI chemistry is unstable, and only a small portion of the phospohorus reacts with sulfur and iron to passivate the substrate. The rest of the phosphorus breaks down into insoluble precipiates and is washed downstream where it can cause fouling.

- insoluble phosphorus
- soluble phosphorus
- sulfur
- oxygen
- iron



TANSCIENT™ CHEMISTRY

TANSCIENT™ chemistry is "P-efficient" and delivers phosphorous as a stable, polymeric triester that passivates metal substrates more efficiently, minimizing risky, wasteful phosphorus carryover to downstream systems.

** As temperature increases, TANSCIENT™ remains stable far longer than conventional inhibitors.*

TANSCIENT™ Methodology: Optimizes your blends while minimizing risk

1 Gather Information → 2 Define Current State / Limitations → 3 Physical Walkthrough → 4 Develop Test Plan → 5 Solidify Crude Slate & Timing → 6 Execute & Monitor

TANSCIENT™ methodology begins with a careful analysis of your systems, your crude slate and your operating conditions in cooperation with your technical team and planners, along with a discussion of your high-TAN treatment goals.

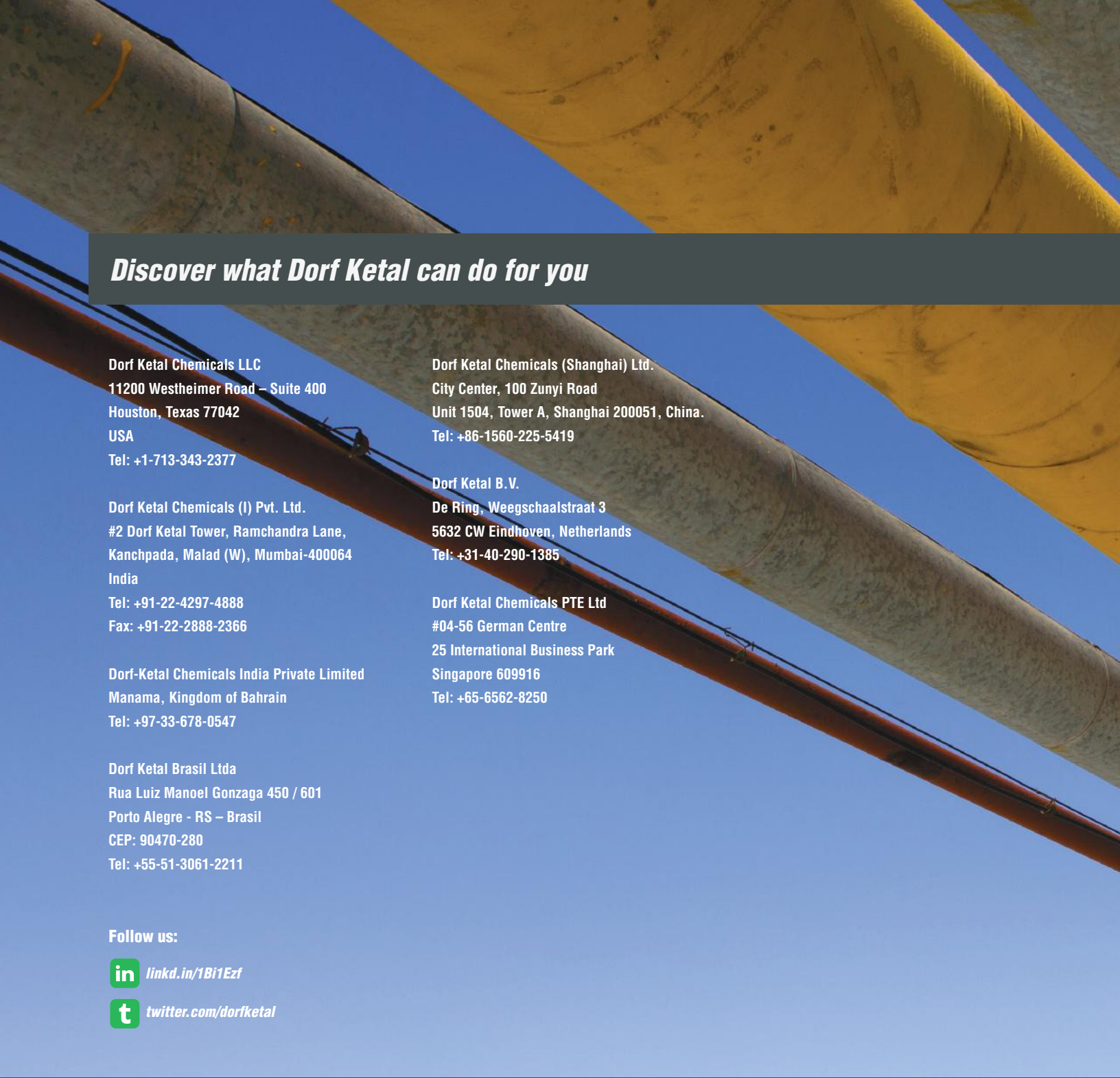
Dorf Ketal technicians analyze the data and develop a risk assessment containing a range of dosages and operating scenarios – actionable information you can use to optimize your crude slates with confidence.

TANSCIENT™ monitoring and reporting keep pace as conditions change by delivering the information you need to evaluate your alternatives and exploit new opportunities without compromising safety.

KEY VARIABLES WE EXAMINE

1. *TAN acid concentration*
2. *Total sulfur and reactive sulfur*
3. *Materials of construction*
4. *Maximum observed temperatures*
5. *Highest observed velocities and wall shear*

Contact your Dorf Ketal representative today for a comprehesive assessment.



Discover what Dorf Ketal can do for you

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