

INDUSTRIAL CHEMICAL CLEANING THOUGHTFUL, THOROUGH ENGINEERING...

Industrial Chemical Cleaning employs reactive chemicals to remove foulants/deposits which affect process and equipment by:

- 1) Reduced heat transfers
- 2) Reduced flow, increased pressure drop
- 3) Under Deposit corrosion
- 4) Product contamination

Chemical cleaning is often applied to equipment to remove hazardous residues and vapors, which results in a safer work environment for maintenance.

Trican industrial Chemical Cleaning Services approaches every project with sound proven



chemical and engineering practices for measurable results. We are guided by principles of NACE, ASME, AIChE, APPEGGA. In our specialty service, nothing is routine.

Understanding is fundamental to solving your complex cleaning requirements. Trican's attention to detail ensures consideration has been given to process equipment and materials, deposit to be removed, safety and the environment. The project isn't complete until the process equipment is clean and spent materials are properly managed.

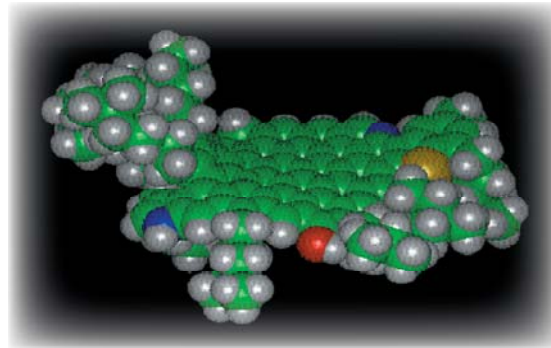


"ON YOUR STAFF...NOT ON YOUR PAYROLL"

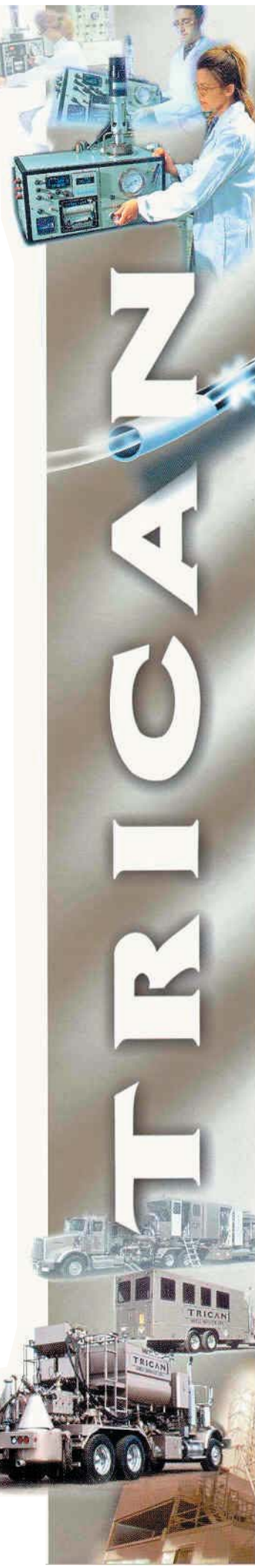
Trican Analytical Services ensures the deposit to be removed is identified and understood, the correct cleaning program is applied and calculated results are factored as the goal of the on-site campaign.



Trican chemical packages are designed to remove all traces of deposit with consideration to system materials, disposal and costs.



- **Mineral Acids:**
Hydrochloric, Sulfuric, Phosphoric, Nitric Sulfamic
- **Organic Acids:**
Citric, Acetic, Bromic, Boric
- **Chelants:**
EDTA, HEDTA, DTPA
- **Oxidizers:**
Stabilized Hydrogen Peroxide, Ammonium Persulfate, Potassium Perchlorate, Potassium Bromate, Sodium Nitrite, Potassium Permanganate



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- **Alkaline:**

Sodium hydroxide, Tri-Sodium Phosphate, Sodium Metasilicate

- **Superior Blends:**

Corrosion Inhibitors Solvents, Surfactants, Dispersants, Demulsifiers Scavengers, Flow Improvers, Encapsolents, Antifoulants, Antifoams, Detergents, Metal Brighteners.

Trican utilizes a number of techniques to optimize the cleaning process. Based on our project review, the chemical package may be applied by:

- Fill and soak
- High velocity circulation
- Low velocity circulation
- High pressure
- Low pressure
- Foam
- Vapor phase – steam, nitrogen or gas assist
- Gelled fluid
- Spray fluid

Many questions arise when we design chemical cleaning programs for our clients.

Q. How do you know the program will be effective?

A. Trican studies the problem and asks questions. We understand the complexity of the program by understanding equipment/process to be cleaned, deposit analysis, best chemical package, best chemical application.

Q. How do you know the program was effective?

A. In our analysis of the project we will study your process. We review heat transfer, flow, pressure, product specifications We want to understand the process. After the cleaning process is completed, the process change will be measurable.

Q. How do you analyze your program performance during the campaign?

A. As part of our project design, we identify key parameters to analyze which give positive indication that the foulant is being removed. We test for these parameters on a scheduled basis using the latest in field laboratory analysis equipment.

Q. How do you know the chemical package is not causing metal loss or harm to the system materials?

A. We carefully review your system before any chemicals programs are applied. We routinely test corrosion inhibitors for effectiveness. We employ electrical resistance and linear polarization techniques during the campaign to provide assurances with no surprises.

Q. How is spent fluid managed?

A. We use only approved waste haulers and disposal facilities. As part of our project planning we look for alternative uses for spent cleaning materials and encourage our clients to consider these alternatives in a value added spirit.

Engineered Services Offered by Trican Industrial and Pipelines Services:

- Nitrogen Purging
- Pipeline Pigging
- Nitrogen Drying
- Leak Locating
- Reactor Cooling
- Isolation– Freeze, Viscous Gel
- Hydro Testing
- Chemical Cleaning
- Pneumatic Testing
- Lube Oil Flushing





PERFORMANCE

