



# **RESTOR™**

## **JACKET CLEANING SERVICES FOR GLASS-LINED EQUIPMENT**

**De Dietrich**



**NALCO**  
An Ecolab Company

**If your goal is to improve reactor heat transfer efficiency – safely and quickly – Nalco and De Dietrich Process Systems can help you meet your objectives. ReStor Service was developed to safely clean and restore glass-lined process reactors.**

The reactor—a critical process workhorse of any specialty chemical or pharmaceutical plant—can also be the source of significant bottlenecks in the manufacturing process, ultimately increasing a plant's total operational cost.

As reactor jackets become fouled with iron oxide corrosion, they can seriously affect production. Over time, internal fouling of the jackets in glass-lined reactors reduces heat transfer efficiencies, increases reaction times and decreases yield by as much as 15%.

In addition, this loss of efficiency may cause plant profitability to decrease due to the production of off-quality product, increased utility and maintenance expense, and shorter equipment life. In some industries, these problems alone can put you at a competitive disadvantage.

Conventional, acid-based cleaning methods do not solve the problem with fouled reactors. Acids can damage (spall) or destroy the internal glass lining of reactors. And other common cleaning chemicals are ineffective against iron deposits.

Fortunately, a new, safe solution is now available. Nalco and De Dietrich Process Systems have teamed up to provide the most comprehensive reactor jacket cleaning service currently available to industry—ReStor. ReStor optimizes your reactors by improving heat transfer efficiency, resulting in increased production and, in the end, lowering your total cost of operation. ReStor can give you a competitive advantage.

Developed by Nalco, tested and approved by DDPS, cleaning compound GLRx™ quickly and safely removes iron oxide build up from jackets of glass-lined reactors. It works without damaging the glass lining or dissolving the base metal of reactors.



*Before cleaning, iron oxide deposition decreases efficiency.*



*After cleaning, performance is restored.*

*"The ReStor program cleaned 100% of our reactors and piping system. As a result, we have excellent heat transfer in our critical reactors including better all-around control of process cooling. Our rate of production is now 10% higher than it ever was."*

**-Utility Superintendent of a fine chemical plant**

## SERVICE PACKAGES

Nalco and De Dietrich Process Systems offer you flexibility in cleaning based upon your individual requirements.

### Level 1: Analysis and Consultation Option

The Nalco and DDPS team of experts analyzes the contaminants in your reactor jacket and lays out a plan of action. We then deliver the necessary amount of cleaning compound GLRx, consult with your staff and provide written cleaning instructions to enable you to perform the cleaning in-house.

### Level 2: Monitoring Option

In addition to Level 1 services, the Nalco and De Dietrich team provides on-site testing and inspection services to monitor the cleaning progression. This allows you to focus on the mechanics of cleaning.

### Level 3: Turnkey Option

Our team of experts takes complete responsibility for the cleaning of your equipment from our pre-site visit to completion. We supply the manpower, equipment and cleaning product necessary to restore the heat transfer efficiency of your equipment and improve the productivity of your plant. You schedule the cleaning to fit your shutdown schedule. The Nalco and DDPS team takes it from there.

For more information about this service, contact De Dietrich Process Systems or Nalco:

#### De Dietrich Process Systems

908.317.2585

#### Nalco an Ecolab Company

630.305.1000, ext. 1226



*Iron oxide corrosion that builds up on the interior surfaces of glass-lined reactor jackets can be removed with GLRx as part of the ReStor program.*