

## **Anion D'Scale**

**Application: Paper Mill Vacuum Pumps**

**Result: Successfully used to lower energy costs, increase thermal efficiencies, & lower bearing temperatures in Mill Vacuum Pumps..**

### **Recent Application Results June 10, 2018**

Anion D'Scale was recently used at a paper mill with 1100 employees. They have 64 Nash Vacuum pumps capable of holding 600-900 gallons of Anion D'Scale. The 64 pumps are divided among 4 lines with each line responsible for removing the wet end of the mill. The 42 additional smaller pumps used in other applications are located within ABC Company. The planner provides the information on the product to the line supervisor. The line supervisor is key in making the decision for using Anion D'Scale on the line.

The cleaning of the remaining four vacuum pumps on line 7 caused a drop of 70 amps required which is required to run line 7. The 70 amps saved due to cleaning the four pumps results in a \$1,000/amp/year savings in energy for a total savings of \$70,000 per year or an average of \$17,500 per year for each vacuum pump cleaned. The unproved efficiency of the pump allows them to remove more water from the pump per unit of time. This allows for an increasing the speed of the line resulting in increased productivity. The lines cleaned at this paper Company have set record production numbers since cleaning which resulted in an increase of \$300,000 per year in revenue on one line. A series of 4 vacuum pumps may be turned by a single motor. This results in shutting down of a line when a vacuum pump becomes "frozen" due to scale buildup. An estimate of \$18,000 per minute was reported by this paper company as income lost due to the shutting down of the line. The removal of the scale from the pump eliminates the possibility of the line shutting down due to scale buildup.

### **How Anion D'Scale Works**

Anion D'Scale is a water-based solvent containing wetting agents, corrosion inhibitors, antifoam and degreasing compounds.

It is designed to penetrate and remove encrusted lime scale, rust, corrosion products and dirt from water-wetted surfaces in process equipment, e.g.,

exchangers, and liquid- ring vacuum pumps. Anion D'Scale can also be used to remove lime scale in commercial and industrial applications.

Anion D'Scale has a pleasant citrus-orange smell. It is low foaming and quickly releases the inert gas generated by the reaction of lime scale with Anion D'Scale.

The formation of scale in process equipment increases pressure drop, requiring more pumping horsepower to maintain volumetric throughput. Heat transfer surfaces gradually become fouled and thermal efficiencies decrease. Pieces of scale attach themselves to rotating equipment, pumps and mixers, and cause bearing failure. If these problems sound familiar, then you know why you need to periodically clean the lime scale and rust out of the system with Anion D'Scale.

Anion D'Scale provides an excellent method to clean equipment without expensive disassembly. In some applications, the cleaning can be accomplished while the system is in operation. Anion D'Scale can remove scale in small, inaccessible places that cannot be cleaned otherwise be cleaned.

## **Interesting Facts**

Cost of ampere per year: \$1,000 to \$1,400

The cost savings after reducing vacuum pump motor amperage by 20 amps: This paper mill estimated the savings at \$20,000 per year

Estimated cost of unscheduled downtime on a paper line in a paper mill: \$18,000 per minute

Percentage of paper mill's operating annual budget dedicated to maintenance: 1%

Estimated Nash's service charge to de-scale and service a liquid-ring vacuum pump: Between \$9,000 and \$30,000

The cost of 2-330 gallon totes of ANION D'SCALE to de-scale a Nash Model 904-R:  
Approximately \$6698.00

The time it takes to clean one vacuum pump using Anion D'Scale: Between 2 to 4 hours  
If Anion D'Scale is not spent after a cleaning cycle can it be stored for future cleaning

## **Why Use Anion D'Scale**

1. Does not require pre-mixing; does not separate
2. Effective- one gallon dissolves approx. 1.5 lbs. of scale
3. Safe- no special shipping, transportation or handling required
4. Rapidly biodegradable
5. Non-Hazardous, Non-Corrosive, Non-Flammable
6. Pleasant odor, Free rinsing and Low Foaming
7. Re-Usable, if not spent

## **Paper Mill De-Scaling Applications**

1. Vacuum Pumps & Filters
2. Calendar Rolls
3. Mill Rolls
4. Liquor Tanks
5. Kiln Trunnion Bearings
6. Green Liquor Lines
7. Cooling Towers
8. Heat Exchangers
9. Pulverizers

## **Packaging**

Anion D'Scale is available in premium D.O.T 55 gallon reusable drums. It is also available in 5 gallon polyethylene pails and 330 gallon returnable (at no charge) caged totes.

Anion D'Scale meets or exceeds government regulations.

Anion D'Scale is non-toxic, non-corrosive, non-flammable and non-hazardous when used as directed. The ingredients in Anion D'Scale, when spent, are not listed a hazardous waste, nor does it possess any of the hazardous characteristics specified in 40 CRF 261. Anion D'Scale has a low B.O.D. (Basic Oxygen Demand) rating.

