



# Dynamic Descaler

# The Perfect Solution To Your Water Scale Problems!

## Dynamic Descaler World's Fastest Biodegradable Descaler



# Dynamic Descaler

Dynamic Descaler is the trade name for a revolutionary descaler that is designed to dissolve the toughest water scale, mud and rust deposits from any water-based equipment and piping.



### Dynamic Descaler Biodegradable Descaler Is

- Fast - Equipment is cleaned within a few hours!
- Easy to use!
- Efficient!
- Highly Inhibited - Non-corrosive with superior corrosion inhibitors.

Your equipment will not be harmed!

- Powerful detergents and penetrating agents!
- Extremely low-foaming!
- Wetting agents!
- Biodegradable - Will not harm our environment!
- Safe To Humans - It will not harm your personnel!
- Save Time And Money - Prevents costly shutdowns, expensive repairs, reduces energy and operational costs, and will extend the lifespan of your equipment!

### Why Use Dynamic Descaler

Dynamic Descaler is formulated to rapidly clean mineral scale found in passages of water-cooled or heated equipment. IT IMPROVES EFFICIENCY, LOWERS COST, AND CONSERVES ENERGY AND EXTENDS THE USABLE LIFE OF CLEANED EQUIPMENT. It is safe to be used on Steel, Iron, Brass, Copper, Plastic, Rubber and other materials found in most water cooled and heated equipment.



It is used by circulating through water passages in the waterside of Heat Exchangers, Coolers, Pumps, Boilers, Compressors, Condensers, Extruders, Molds, Cooling Towers, Furnaces, and Water Piping Systems. It is FORTIFIED with powerful Low Foaming Wetting and Penetrating Agents, Safe Degreasing Solvents and superior Corrosion Inhibitors to prevent corrosion of the Steel, Brass, or Copper surfaces being cleaned.

Does not contain toxic cresols or other tar oils that require SARA Title III, Section 313 spill loss or disposal reporting.



# Dynamic Descaler

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Cooling towers have tremendous a scale problem that causes industries alone a billion dollars a year to remove. Compressors, chillers, processing equipment, boilers, and automotive industry, utility industry all experience scale problems.

Whenever there is a deposit to any type of heat transfer surface, it retards heat transfer. This "thermal resistance" requires a corresponding increase in energy to overcome it. Major manufacturers of air conditioning equipment generally design condensers and chiller heat exchangers to operate at a maximum "thermal resistance" or fouling factor of 0.0005.

As a result, with only 0.036 inches (1/32") of deposit corresponds to an increase in energy costs of over 30%! This 30% increase in costs relates to a hardened scale deposit (calcium carbonate).

Ensuring that water passages of your equipment are kept free of mineral deposits improves efficiency, conserves energy, substantially extends the life of the equipment and reduces operational costs. Scheduled usages of Dynamic Descaler, as part of your equipment maintenance program will prevent costly shutdowns.

Because Dynamic Descaler does not oxidize, corrode, pit, erode or have any other harmful effects on materials and metals such as; STEEL, IRON, BRASS, COPPER, PLASTIC, FIBER, TEFLON or other metals or materials found in water-based systems or equipment, you can clean your equipment IN-SITU (and sometimes without shutting down the machine).

Simple and Effective: Dynamic Descaler has the ability to dissolve approximately 1.5kg of calcium carbonate scale per gallon in concentrated form. It does not need to be heated up during cleaning. Because Dynamic Descaler is free rinsing you do not need to neutralize or pacify the system. The uniqueness of Dynamic Descaler allows you to clean some equipment while still in operation utilizing a minimum of your own personnel.



Why spend millions of dollars setting up a factory and millions more in maintenance and equipment depreciation? With Dynamic Descaler, equipment and machinery will last longer, help you conserve energy and save money as cooling water represents approximately 3% and electrical power 75% of operational costs!

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## Automotive

Closed Circuit Cooling,  
Dynamometers,  
Extruders,  
Molders,  
Radiators,  
Welders

## Food

Condensers,  
Ice Machines,  
Kathabars,  
Refrigeration Equipment,  
Steam Tables

## Mining

Bearings,  
Conveyors,  
Filters,  
Presses,  
Process Lines,  
Radiators

## Refinery

Compressors,  
Converters,  
Crackers,  
Exchangers,  
Piping,  
Pumps

## Metals

Bearings  
Cooling Fans  
Furnace Doors  
Table Top Sprays  
Vacuum Furnaces  
Cast House Cooling  
Roller Hearth Furnaces

## Bottling

CO2 Generators,  
Heaters,  
Exchangers,  
Rinse Tanks,  
Sterilizers,  
Washers

## Manufacturing

Chillers,  
Compressors,  
Furnaces,  
Quenchers, Vacuum  
Pumps

## Paper

Calendar Rolls  
Mill Rolls,  
Caustic Lines,  
Scrubbers,  
Compressors,  
Liquor Tanks,  
Pulverizes,  
Vacuum Pumps

## Rubber/Plastics

Banbury Mixers,  
Calendar & Mill Rolls,  
Extruders,  
Injection Molders,  
Molds,  
Temperature Control Units,  
Throat Coolers,  
Towers,

## Utilities

Boilers  
Turbines  
Transformers  
Cooling Towers  
Air Compressors  
Hydrogen Coolers  
Lube Oil Heat Exchangers

## Chemicals

Dryers,  
Extruders,  
Kettles,  
Mixers,  
Reactors, Scrubbers,  
Vacuum Pumps

## Metals

Bearings,  
Castings,  
Fans,  
Hearth & Vacuum Furnaces,  
Shelters,  
Sprays

## Pharmaceutical

Exchangers,  
Loop Systems,  
Kathabars,  
Pumps,  
Reactors,  
Still,  
Sterilizers

## Steel

Bearings,  
ConCast Units,  
Generators,  
Hearths,  
Spangle Units,  
Furnaces

## Others

Ball Mills  
Demisters  
Evaporators  
Locomotives  
Absorption Units  
Diesel Generators  
Induction Furnaces



Power Plants



Chillers



Vacuum Pumps



Petrochemical Plants



Marine Applications

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### Comparative Analysis of Dynamic Descaler

#### Corrosion Testing According To ASTM G31

Units are mils per year (MPY)

	Dynamic Descaler (Bio D'Scale)	Competitor
Bronze	4.57	10.1
90/10 Cu/Ni	5.83	11.1
70/30 Cu/Ni	5.83	6.64
90/10 Cu/Ni W	n/a	n/a

As you can see the corrosion rates of Dynamic Descaler are substantially lower than the competition. The above corrosion rates are according to the U.S. Navy Commercial Item Description (CID) Heat Exchanger Cleaning Compound. The maximum corrosion rate is 20 mils per year (MPY).

#### Scale Dissolving Ability

Put one gram of Calcium Carbonate in fifty mls of cleaning compound.  
Measure time to dissolve.

	Dynamic Descaler (Bio D'Scale)	Competitor
Test 1	2 min. 51 sec.	3 min. 36 sec.
Test 2	3 min. 20 sec.	3 min. 28 sec.
Test 3	2 min. 49 sec.	3 min. 14 sec.
Average	3 min. 00 sec.	3 min. 26 sec.

Scale dissolving ability is a test that measures how fast the descaler will dissolve scale. The results show that Dynamic Descaler dissolved the calcium carbonate, which is the primary compound in boiler scale, much faster than our competitor.

#### Scale Neutralizing Ability

In pounds dissolved per gallon of cleaning compound.

	Dynamic Descaler (Bio D'Scale)	Competitor
Test 1	2.50	1.78
Test 2	2.88	1.75
Test 3	2.42	1.48
Average	2.60	1.67

Scale neutralizing ability is a titration that measures how much the descaler solution can dissolve. The maximum time allowed for this analysis is 1 hour. Dynamic Descaler dissolves 56% more scale than our competitor.

