

# HydroCleanse<sup>®</sup>

THE SAFE, BIODEGRADABLE DESCALING FLUID THAT VAPORIZES SCALE ON-CONTACT



## GOT SCALE?

IT'S WHAT YOU DON'T SEE, THAT'S SLOWLY DESTROYING YOUR EQUIPMENT & REDUCING EFFICIENCY



### SAFE ON METALS



316 Stainless Steel, Carbon Steel, Copper, Nickel, Brass, Bronze, Iron, Titanium & Glass

### SAFE ON GASKETS



Rubber, EPDM, PVC, EPDM, Graphite, Teflon, Viton & PTFE



**HydroClean Products<sup>®</sup>**  
DESCALE • CONDITION WATER • FILTER • MONITOR



## HYDROCLEANSE: THE SOLUTION FOR DESCALING BOILERS, CHILLERS, COOLING TOWERS, PIPING SYSTEMS AND MORE.

### Fast Acting Scale Removal

Heating and Cooling are two essentials that we all need to keep us warm in Winter and cool in Summer.

Calcium and magnesium (often known as limescale), accumulates over time in boilers, storage tanks, chillers and heat exchangers, causing a reduction in efficiency.

Our domestic water supply is an essential that we all use on a daily basis. The water we cook, drink and shower with contains calcium and magnesium, two minerals which are essential to our existence. Unfortunately, these minerals if not treated correctly, will can cause high fuel consumption and failure of Boilers and Water Heaters.

Maintenance of the mechanical room is also an essential requirement. Heating, Cooling and Plumbing Engineers install and maintain Boilers, Hot Water Heaters and chiller systems on a daily basis in industrial, commercial and residential facilities.

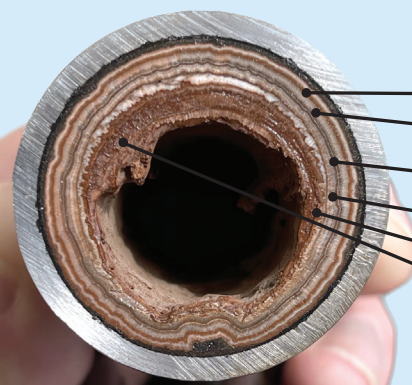
HydroClean Products offers a range of descaling and treatment formulas to remove scale build up in equipment and systems.

Our treatment formula is provided in concentrate form. For Commercial applications where there is significant scale build up, we recommend a blend ratio of water and formula of 2:1. For Residential applications the formula and water ratio can be 3:1. HydroCleanse will typically remove scale in 3-6 hours depending on scale thickness.



Upper steam chest in cast iron boiler.

## Scale Causes Mechanical Failures & Drastically Reduces Fuel-to-Steam or Water Efficiency



- Scale 1/50" thick approx. 5% more fuel required
- Scale 1/25" thick approx. 10% more fuel required
- Scale 1/16" thick approx. 15% more fuel required
- Scale 1/8" thick approx. 30% more fuel required
- Scale 1/4" thick approx. 66% more fuel required
- Scale 1/2" thick approx. 130% more fuel required

Restore your Equipment Efficiencies with  
**HydroCleanse**

### The Safe Scale Removal Solution

Introducing HydroClean Products' newest solution. It was specifically designed to quickly dissolve the build up of tough iron oxide scale, lime, struvite, rust and other minerals.

HydroCleanse is a specifically formulated, non-hazardous descaling solution, that effectively and safely cleans your boilers, water heaters, improves efficiency and can extend the life of pumps, heat exchangers and other direct fired hydronic & steam boilers.



Internal inspection of a cast iron boiler before and after descaling.

### Benefits of Cleaning Boilers, Heat Exchangers & Water Heaters:

#### Fast Acting Formula

HydroCleanse thoroughly cleans your equipment in a matter of hours. The easy-to-use uniquely formulated chemical that will safely out perform most brands on the market. Our descaler solution can be handled by regular personnel, no specialized cleaning crew is necessary.

#### Powerful and Effective

Dissolves approximately 3.2 pounds of lime scale per gallon.

#### Safe and Non Toxic

Will not pit, oxidize or adversely affect iron, steel, 316 stainless, copper, brass, plastic, titanium, fiberglass, nickle, bronze, PVC or rubber seals, making it safe for users to handle.

#### Biodegradable

After neutralization, fluid can be disposed of down the drain.

#### Economical

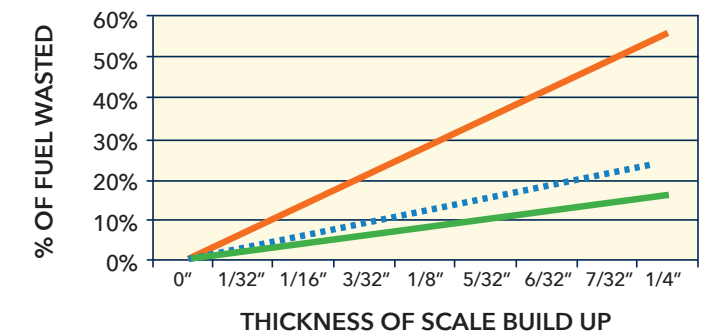
A cost-effective cleaning solution that helps extend equipment life and increases combustion efficiencies to original factory specs.

#### Restore Factory Heat Exchanger Warranty

Manufacture warranties require the water side of the boiler heat exchanger free of scale and corrosion.



### SCALE THICKNESS & FUEL LOSS



TYPE OF SCALE	0"	1/32"	1/16"	3/32"	1/8"	5/32"	6/32"	7/32"	1/4"
Scale, Silica & High % of Iron Oxides	0%	7%	14%	21%	28%	35%	42%	49%	56%
Scale & Iron (low%)	0%	3%	6%	9%	12%	15%	18%	21%	24%
Hard Water Scale	0%	2%	4%	6%	8%	10%	12%	14%	16%

**NOTE:** Typically our cleaning service pays for itself in 1-2 heating seasons while preserving factory warranty water side requirements. Example: If your annual fuel spent was 25k, your savings would be 6k per boiler. Approx. \$2,500 per boiler based on a 1/16" of typical water side scale.

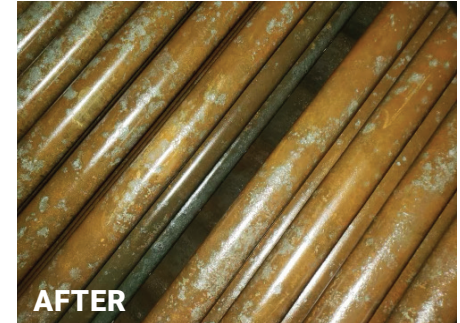
# HydroCleanse® Powerful Descaler for Boilers, Chillers and Piping Systems

- Concentrated formula provides most value with mixed ratio of water to fluid at a 3:1.
- Many other competitors use a straight formula which adds additional cost and time to remove hard minerals and Iron Oxide scales.
- Hydrocleanse works fast and efficiently with very low odor.
- Can be reused if pH levels are below three.
- User has the ability to mix at a lower ratio for faster descaling.
- Formulated and packaged in the USA. 5, 15, 30, 55, 275 gallons are available.
- Disposal can be by drain if pH levels are 6 or above (at neutral pH).

## Recommended Blend 3 Parts Water 1 Part HydroCleanse

*Our descaling Fluid is provided in concentrate form. The 3:1 blend will typically dissolve scale deposits in a matter of 4-6 hours depending on scale thickness.*

**Ideal Applications include:** Boilers, Chillers, Condensers, Heat Exchangers, Cooling Towers, Extruders, Pulp Paper, Barnacle Build Up, Evaporators, Distillers, Vacuum Pumps



Pictures above showing a 300 HP firetube boiler.

## Frequently Asked Questions & Answers

### What makes HydroCleanse different from all the others descaling brands?

HydroClean Products' staff have extensive knowledge of many types of commercial boiler heat exchangers, how to inspect the waterside and how to safely clean boilers and remove scale.

We can provide you with a diagram of piping connections for most of the boilers and chillers you will clean and descale. In most cases, we will provide you with details of the amount of water volume you Hydronic or Steam Boiler vessel holds and how much descaling formula you will need for your job.

This is all part of our customer support.

### What causes scale to stick to the side walls of exchangers?

High internal heat build-up in the heat exchanger is the problem. Heat causes minerals, to come out of solution and plate out onto the walls of the heat exchanger and system piping which reduces efficiency and causes heat exchanger damage.

Boilers are smaller and more efficient now and there is much less water mass. Many manufacturers are now developing equipment that is of variable flow design, to maximize on efficiency and reduce footprint size.

**LOW FLOW + MINERALS + HIGH HEAT = SCALE BUILD UP.** Especially in non chemically treated hydronic system loops.

### How does Scale build up destroy heat exchangers?

High flame temperatures on the metal surface in the absence of water could cause the metal to blister and eventually burn out. Stainless steel can withstand continuous temperatures of 1400 Deg F, while carbon steel cannot withstand temperatures of more than 800 Deg F. This means that when the fire exceeds 800 Deg F, carbon steel begins to oxidize. And break down causing material failure, reducing the life span of your boilers and domestic water heaters.

### How to reduce or stop scale from reoccurring?

Clean, Protect, & Maintain your Hydronic Systems regularly, check for scale build up and treat with Anti-Corrosion and PH neutral system chemicals. Also check for scale build up at least on an annual basis.

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