

# APEX

QUARTERLY

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WITH *RYDLYME!*

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NEWS ON SAFE  
CHEMICAL SOLUTIONS  
FROM APEX ENGINEERING  
PRODUCTS CORPORATION

# Save money by cleaning chiller systems

With warmer weather here, it's time to perform maintenance on your cooling system. From cleaning debris from your coils to ensuring tubes are free of mineral deposits, maintaining your cooling equipment will not only protect you from the heat, but also your wallet.

## COST SAVINGS EXAMPLE

EQUIPMENT	KW/TON	LOAD FACTOR	OPERATING HOURS	KWH/RATE	ENERGY COST
500 TON CHILLER	x .65	x 100%	x 6,570	\$.09	= \$192,173

DEPOSIT THICKNESS (INCHES)	% EFFICIENCY LOSS	INCREASED ENERGY COST
0.01	9%	\$17,296
0.02	18%	\$34,609
0.03	27%	\$51,887
0.04	36%	\$69,182
0.05	45%	\$86,478

*Just 1/32 of an inch of scale can add nearly \$52,000 to the cost of operating a 500-ton chiller!*

ENERGY SAVINGS 0.03" DEPOSIT	CHEMICAL CLEANING COST (EST.)	ANNUAL NET SAVINGS
\$51,887	\$900	\$50,987

Take for example, chillers. They not only represent a capital investment, but also a major contributor to energy costs. Maintaining clean chiller tubes is vital to reliable, efficient equipment operation. Water scale acts as an insulating barrier impeding efficient heat transfer effectively making the equipment work harder, in turn, consuming greater amounts of energy.

Water scale can also create under-deposit corrosion of the tube alloy. Internal tube fouling can be detrimental to heat transfer, reducing the efficiency of condensing and resulting in higher pressure and more strain on your equipment. This corrosion can also create tube breach leaks, resulting in the loss of refrigerant and compounding your operational losses.

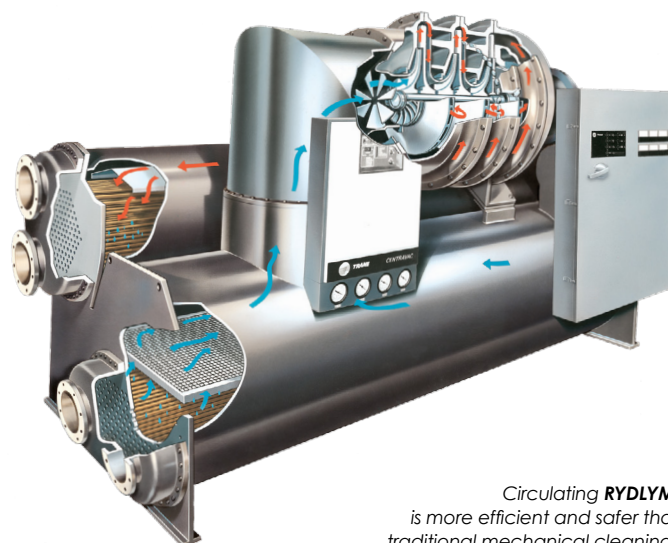
The most effective way to ensure that tubes achieve their full life expectancy and maximum heat transfer efficiency is to keep them clean [with **RYDLYME**, of course]. Eliminating mineral deposits from the tubes so the bare metal is exposed again restores optimal heat transfer. Essentially, this gives

the chiller a new life cycle, as protective oxide coatings quickly rebuild themselves to re-passivate the cleaned tubes.

Chiller operators should document daily chiller performance with design and start-up data to detect problems or inefficient control set points. This process allows the operator to chart a history of operating conditions, which can be reviewed and analyzed to determine trends and provide warnings of potential problems. Upon daily charting of the chiller's operation, the operator will notice gradual increases in condensing pressure. Early identification of the fouling characteristics will help determine the frequency of cleaning required.

The use of safe chemical cleaning technologies should be preferred when compared to mechanical methods. Aside from the risk of damaging components and the equipment itself, mechanical cleaning methods (e.g. tube brushing) may not effectively remove all of the deposits in the equipment. A thin film of water scale or even stubborn areas of build-up left behind will continue to impede the equipment's operating efficiency and allow for faster growth of future deposits.

Energy costs are expensive enough. Keep your equipment clean to ensure maximum efficiency and equipment life, while decreasing operating and energy costs.



*Circulating RYDLYME is more efficient and safer than traditional mechanical cleanings.*

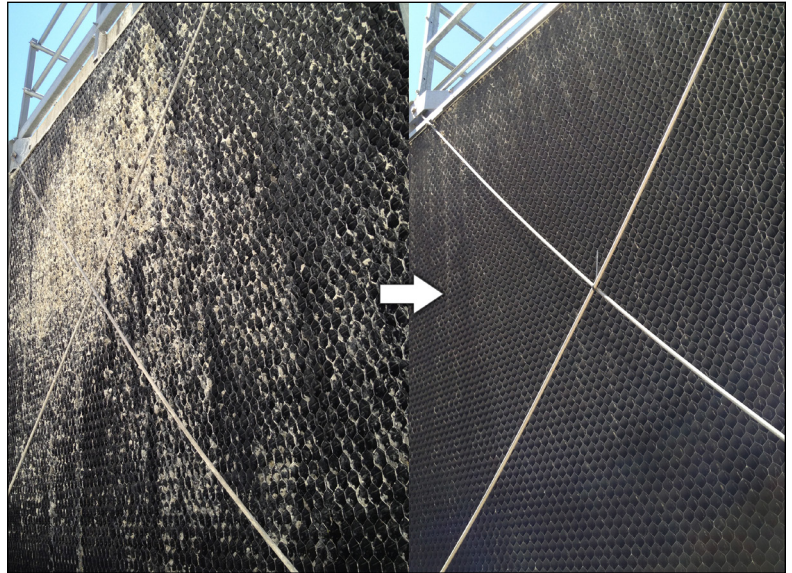
# Cooling Tower Cleaning

Get **RYD** of the water scale that may be increasing your energy bill.

The basic principal of a cooling tower is to cool the water that has picked up heat generated by equipment within and around a facility.

The operation begins in the tower basin where the cooled water is pumped out into the facility and utilized for cooling the equipment on the tower system. As that equipment is cooled, the water picks up the heat and returns to the top of the cooling tower. The hot water is distributed onto a hot deck or through the spray nozzles that evenly distribute it over the tower fill media.

The tower fill media is designed to increase surface area, as well as contact time between air and water. This enhances evaporation and allows further cooling of the tower water. The water then falls into the tower basin where it is then pumped back into the facility to cool the system equipment.



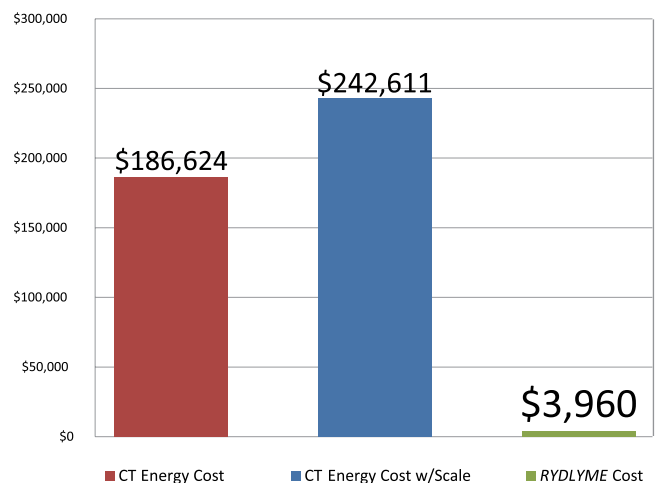
**RYDLYME**  
World's Leading Biodegradable Descaler

Scaling within a cooling tower can restrict the water distribution of spray nozzles, reduce the water flow through the openings of a hot deck and restrict the air flow within the tower. All of these conditions will result in diminished cooling capacity and inefficient operation of the associated equipment on the cooling tower system.

A cooling tower system can be cleaned by adding **RYDLYME** to the tower basin, thus allowing the towers transfer pump to circulate the solution throughout the tower and the equipment it is cooling. This can be accommodated during the normal operation of the cooling tower without shutdown! It is imperative when calculating a required amount of **RYDLYME** needed for a cooling tower system to include enough **RYDLYME** for the equipment load of the tower.

## **RYDLYME** energy savings on cooling tower

CT Energy Cost	\$186,624
CT Energy Cost w/Scale	\$242,611
<b>RYDLYME</b> Cost	\$3,960





Calcium/Scale in Cooling Tower



Airborne Debris on Refrigeration Coils



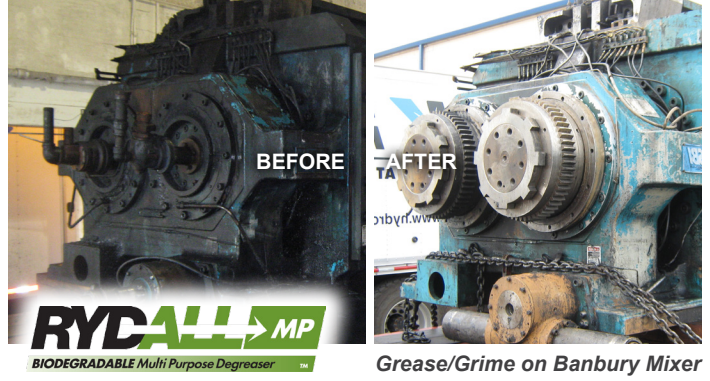
Grease on Filter



Rust on Stainless Steel Plate & Frame Heat Exchanger



Struvite in Wastewater Piping



Grease/Grime on Banbury Mixer

## What else can I use RYDLYME on?

- Flue tubes
- Furnace tubes
- Performance gas heaters
- Pressure reducing systems
- Reheaters
- Sectional boilers
- Superheaters
- Thermal fluid heaters
- Water bath heaters
- Water tube boilers
- Water heat recovery coils
- And many more!



# Quiet and comfort after **RYDLYME**

A hospital was experiencing significant cooling problems with its' 350-ton chiller and cooling tower due to severe scaling to the point where the lowest temperature they could achieve was only 76°F. The chiller was constantly running and making so much noise that the staff moved blankets onto the unit to keep the sound from disturbing the patients.

## Solution

- 220 gallons of **RYDLYME** circulated for 5 hours via inline pumps then flushed with water
- Cleaning was done while system was in operation!

## Results

- The chiller returned to cycling properly and no longer making noise; tower flow returned to normal
- System was also able to provide desired temperatures without straining, or constantly running helping to decrease energy usage



## Product Discontinuation

Apex Engineering Products Corporation will no longer be selling **pH Slayer**, our neutralizing product for **RYDLYME**, due to low demand. Because of select few facilities which may be still require this product, please contact our technical team for inexpensive alternative procedures.

## FOUL TERRITORY

A whimsical concoction of information in the world of scale, grease, odors and more.

What's your biggest fear? Spiders? Snakes? What about being sprayed with 'liquid poo'? Well, this happened to an unfortunate women and her son in Canada. Susan Allan said that on May 9, she and her adult son were sitting in her car at a stoplight when the feces came pouring in through the sunroof.

"While we were sitting there, our car was inundated with liquid poo falling from the sky," Allan told the news. "I had it on my face, down my shirt, my entire car, and the vehicle beside us were all covered in it."

An airplane was flying above at the same time that the 'brown rain' was falling onto the vehicle and the patrons. The actual sensation of crap hitting their skin was something Travis will never forget. First, he said, he felt a cold sensation hit the side of his face and shoulder.



"Then the smell hit my nose," he said. "I almost vomited instantly. It was terrible."

It seems as if **RYDALL DC** can be of service in this situation! **RYDALL DC** Deodorizing Cleaner is a 100% natural and safe product that cleans and deodorizes a wide array of surfaces with an innovative non-active biocatalyst. **RYDALL DC** contains NO active enzymes, just a complex mixture of nutrients, vitamins and trace elements that act as an energy drink that vitalize microorganisms already present on surfaces.

story via <http://huffingtonpost.com/>

## DESCALER &amp; PUMPING SYSTEMS



**RYDLYME** biodegradable descaler is specifically designed to dissolve the toughest water scale, lime scale, mud and rust deposits from virtually any piece of water-based equipment. **NSF-certified.**



**RYDLYME Pumping Systems** are specifically designed to circulate **RYDLYME** through a vast array of equipment and systems keeping your facility in peak operating condition.

## CLEANERS &amp; DEGREASERS



**RYDALL CC Coil Cleaner** is a biodegradable coil cleaner specifically designed to clean dirt, grease and soil residue from air-exposed surfaces of critical cooling or heating equipment. **NSF-certified.**



**RYDALL MP Multi Purpose Degreaser** is a biodegradable, highly concentrated degreaser/cleaner that quickly and safely removes oil, grease, grime and other pollutants from all surfaces and components. **NSF-certified.**



**RYDALL HD Heavy Duty Degreaser** is a biodegradable, heavy-duty degreaser used specifically on all carbon-based derivatives found on the oil and/or process side of your equipment or system.



**RYDALL VP Specialized Degreaser** is a biodegradable, pH neutral degreaser specifically designed to safely and quickly clean and degas refinery process equipment. It can be applied in circulation or vapor phase applications.



**RYDALL DC Deodorizing Cleaner** is a biodegradable, ultra-concentrated product that vitalizes microorganisms already present on surfaces and help speed up their metabolic process to naturally rid surfaces of odor and disease-causing bacteria.

## ODOR CONTROL &amp; WATER TREATMENT



**RYDALL OE Odor Eliminator** is a unique, environmentally beneficial biocatalyst containing a complex mixture of natural nutrients, vitamins, and trace elements designed to eliminate industrial odors and corrosion problems.



**RYDALL WO Water Optimizer** is an environmentally beneficial additive that disallows the formation of  $H_2S$ , COD, BOD, FOG, TDS and TSS. This unique biocatalyst is also effective in enhancing methane production and  $O_2$  content.

1241 Shoreline Drive  
Aurora, Illinois 60504  
T: 630.820.8888 | 800.451.6291  
F: 630.820.8886



For 75 years, Apex Engineering Products has been formulating and manufacturing safe and biodegradable specialty cleaning chemicals for a diverse range of applications around the world. From our **RYDLYME** biodegradable descaler to our versatile **RYDALL** line of cleaners and degreasers, our products will decrease downtime and increase efficiency.

We are a fourth-generation, family-owned company renowned not only for our biodegradable line of products, but also our in-depth and exceptional customer support. With decades of knowledge and experience in a wide array of applications, our knowledgeable technicians will work closely with you to determine the best solution for your facility's unique challenges. To further minimize your downtime, virtually all orders are shipped out within 24 hours.

Apex Engineering Products also takes great pride in being an ISO 9001 Certified Company providing the highest level of support and quality of products to our customers....**another formula that hasn't changed in over 75 years!**