

APEX

QUARTERLY

FOURTH QUARTER 2016

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BEFORE



AFTER



NEWS ON SAFE
CHEMICAL SOLUTIONS
FROM APEX ENGINEERING
PRODUCTS CORPORATION

Heat Exchanger Descaling with **RYDLYME**

Why use **RYDLYME** descaler when cleaning a heat exchanger?

RYDLYME biodegradable descaler is the perfect tool for safely dissolving calcium, lime, rust and other water deposits that rob heat transfer efficiency and dramatically decrease flow rates. A periodic **RYDLYME** cleaning will dissolve the deposits into a solution without harming the metallurgy or components within your heat exchanger. **RYDLYME** is non-hazardous to the personnel performing the cleaning and disposal is simple due to the fact that **RYDLYME** is biodegradable.

Our biodegradable and innovative descaler is the universal product of choice for scale removal no matter the equipment type. Besides avoiding heat exchanger failures, with **RYDLYME** you regain original design heat transfer, efficiency, flow and reliability!

How to descale a heat exchanger with **RYDLYME**:

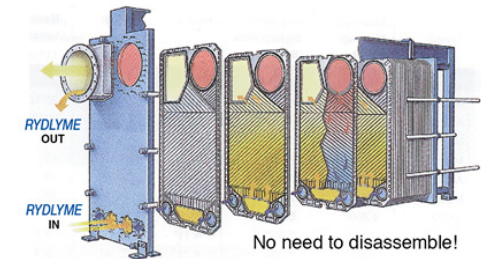
RYDLYME is the ONLY product of its kind that is truly non-toxic and non-hazardous! Unlike other chemical descalers and traditional harsh acids, **RYDLYME** can be safely handled by personnel (you can even hold it in your hand without injury!) and there are NO transportation or handling restrictions! It can be safely disposed in normal plant sewers, even in the case of an accidental spill at full concentration!

To obtain the quantity of **RYDLYME** needed to clean your heat exchanger, you will need to know the dimensions. Once you have that information, please refer to the chart or formula ([here](#)) for the quantity and circulation time. The resulting volume given depicts a 50% concentration of **RYDLYME**, therefore the same amount of water will be required to flood the unit and circulate the solution. When isolating the water-side of the unit for cleaning, additional **RYDLYME** may be necessary if the isolation valves are located further than one foot from the actual supply and return ports of the exchanger. To account for this added volume, add in the piping volume

from the exchanger to the valves to ensure the adequate amount of solution.

SYSTEM VOLUME	CIRCULATING TIME
0 - 25 gallons.....	1 hour
25 - 50 gallons.....	2 hours
50 - 150 gallons.....	3 hours
150 - 300 gallons.....	4 hours
300 - 500 gallons.....	6 hours
500 - 800 gallons.....	8 hours

fig 2.1



Basic Heat Exchanger Descaling Procedure:

1. Isolate and drain the water-side of the exchanger to be cleaned.
2. Place a 1" ball valve between the isolation valves and the heat exchanger on both the supply and return.
3. Attach the **RYDLYME** pump and hoses so the **RYDLYME** will be pumped in the bottom or supply, and pumped out the top or return.
4. Begin pumping all the required **RYDLYME** into the exchanger. Once that is accomplished, begin to add water to complete the circulation. Please note: The calcium deposit will take up volume within the heat exchanger, so you will not be able to add the same amount of water in the beginning.
5. Continue circulating the solution for the recommended amount of time. As the circulation progresses and the product dissolves the deposits inside the unit, the volume will increase. To account for the increase in volume, please add water to the circulation vessel, as needed. If you begin adding a lot of water, please be aware, it is possible there is a leak in the system.
6. It is a good idea to periodically check the effectiveness of the solution while circulation is in progress. This can be accomplished by utilizing a pH meter and as long

(Continued on next page)

as the solution retains a low pH, the product is active. Should the circulating solution reach a pH of 5.5 to 7.0 before the recommended time is up, you will need to add more **RYDLYME** and possibly extend the circulation time.

7. Upon completion of the recommended circulation time, the solution may be purged to a normal sewer and flushed with water. This process is completed by placing the return hose in the drain and adding water to the circulation container until the discharge line runs clear.
8. The unit is ready to be returned to service.
9. The same instructions may be used for plate and frame type heat exchangers.
10. Please note: If your situation dictates that you cannot take your heat exchanger off-line, please contact the manufacturer for on-line cleaning instructions.

For more detailed instructions, call Apex Engineering Products today for a **free quote** at **630-820-8888** or download our heat exchanger cleaning brochure [here!](#)



TAMPER EVIDENT NSF-CAPS

Apex Engineering Products has recently added tamper evident caps and closures to all **RYDLYME** containers and drums. These NSF/ANSI Standard 60 compliant caps and enclosures are a safety feature ensuring the product has not been tampered with before opening.

Don't worry about needing any additional tools to remove the caps - your original cap removers will still work!

Apex Engineering strives to keep our customers happy and this is just another added benefit. If you have any questions regarding these caps, please feel free to contact Apex Engineering Products at

IN ACTION: RYDALL OE

Say Cheese!

A specialty cheese manufacturer in Wisconsin had an ongoing odor problem since installing a wastewater treatment system, which includes a 4,000-gallon wastewater sludge tank. The primary odor problem was coming from the sludge tank, which had material pumped out and taken off-site about once a week.

The odor emanating from the wastewater process was a source of complaints from neighboring facilities and businesses, as well as from the town's police headquarters five miles away!



The solution to the odor included 12 ounces of **RYDALL OE** per day, dispensed 1 ounce per hour over a 12 hour work day. Typically, OE - a sprayed application, was injected at 100 ppm via a small metering pump into the waste stream prior to reaching the sludge tank.

In just two days, the strong, pungent odor from the wastewater process was almost completely eliminated! The expedited result was due to the injection of **RYDALL OE** to the wastewater stream prior to it reaching the tank, which allowed ample mixing and retention time.

The facility's plant manager stated, "We've had no phone calls from the police or fire department, and none of our neighbors have complained since using **RYDALL OE**. We are very pleased with the result and will continue to use the product to control odor."

With such a positive result from the sludge portion of the wastewater process, the plant is now evaluating the use of **RYDALL OE** to help control extremely high BOD's in the main waste stream. 🌱

Getting *RYD* of grease & grime with **RYDALL MP**

RYDALL MP
BIODEGRADABLE Multi Purpose Degreaser

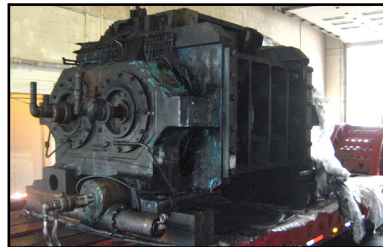
An industrial cleaning contractor needed a degreaser/cleaner to cut through a significant buildup of oil, carbon black, grease and other contaminants on a Banbury mixer from a tire manufacturing facility.

Solution

- 5 gallons of **RYDALL MP** (50% solution) sprayed on entire unit, soaked for a few minutes and then power washed with water.

Results

- In only one hour, and simple soaking and rinse, the mixer was free of grease and other contaminants!
- Client was extremely impressed and contractor was eager to use **RYDALL MP** for additional jobs! 🧴



Multi-Purpose Recycling

A waste management company was experiencing problems thoroughly removing contaminants from plastic containers to prepare them for recycling.

Solution

- **RYDALL MP** diluted (10% solution) into the parts washer, heated to approximately 120°F and sprayed continuously onto the contaminated plastic followed by a water rinse.

Results

- Setup allowed good coverage on material passing through, cleaning each thoroughly for recycling.
- Based on dilution rate, **RYDALL MP** has been used extensively. 🧴

Removing Grease

A manufacturing facility in Wisconsin used **RYDALL MP Multi Purpose Degreaser** to cut through a heavy build up of grease, grime and dirt buildup on its Haas ST30 CNC Lathe unit. The unit had not been cleaned in nearly ten years.

Solution

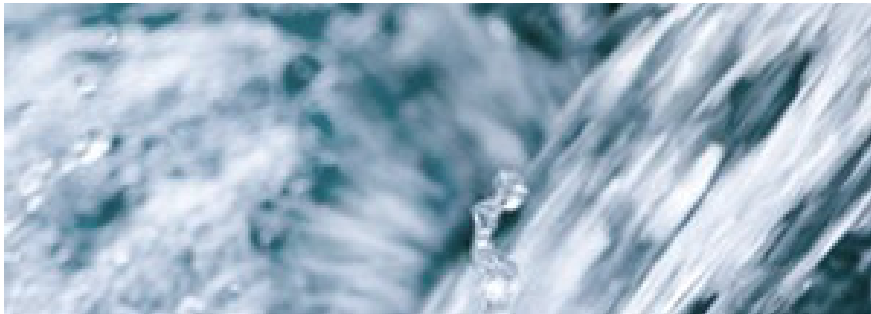
- Spray bottle of **RYDALL MP** (50% solution).
- Sprayed area, let sit for approximately 1 minute and wiped off.

Results

- After just 3 applications, the heavy buildup was gone.
- The company is using **RYDALL MP** on other equipment and areas throughout its facility, and **RYDALL DD Definitive Degreaser** on heavier grease buildups. 🧴



RYDLYME cleans blow down line from cooling tower system



A Canadian plastics and chemicals company, turned to **RYDLYME** to clean piping that has never been cleaned in its 30 years of service. The 5,000-foot carbon steel blow-down line from the plant's main cooling tower system suffered from severe mineral scale that progressively increased over the years causing significant flow issues. The system has not been close to its designed flow rate of 125 gpm for several years...

RYDLYME approach

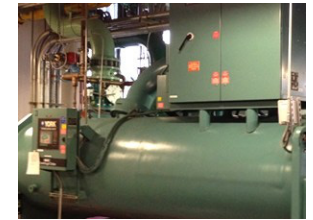
- Given the length of the pipeline, a typical circulation was not practical. Two 5,000-gallon vacuum pump trucks were positioned at each end of the pipeline.
- 1,980 gallons of **RYDLYME** were pumped back and forth for 8 hours allowing for optimal contact time, as well as to stimulate circulation throughout the pipeline.

RYDLYME results

- Personnel at the plant watched the flow rate improve to its design rate of 125 gpm!
- The team also saw improved functionality and quieter operation of the system pumps.
- The cleaning created a lot of excitement within the plant as many other departments are looking into how they can use **RYDLYME** on other equipment (e.g. heat exchangers, chillers, air compressors, cooling towers, lime slurry systems and condensers)! 🏆

RYDLYME descales and cleans absorption chiller

A major Midwest university was experiencing problems with its 1,250-ton York absorption chiller, mainly with approach temperatures reaching 30°! Severe scaling in the condenser bundle was identified as the reason for the inefficient operation and **RYDLYME** was called upon to get rid of the scale.



RYDLYME approach

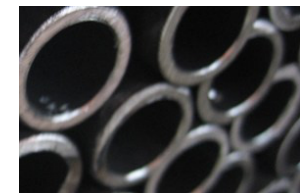
- 55 gallons circulated via **RYDLYME** 15MDC pump cart for 6 hours.

RYDLYME results

- Approach temperature dropped to 6°!
- The university was extremely pleased with the result and will be performing regular preventative maintenance cleanings with **RYDLYME!** 🏆

RYDALL DD removes oil buildup on heat exchangers

A Midwest glass manufacturer had severe oil buildup within the tubes of its heat exchangers (6 feet long with an 8-inch diameter) that had accumulated over the course of a few years. The client was skeptical about the effectiveness of **RYDALL DD** Definitive Degreaser as they tried several other cleaners and degreasers in the past to no avail, but agreed to try it.



RYDALL DD approach

- Mixed only 20% of **RYDALL DD** with 80% water and circulated via pump at 160 degrees for 4 hours.

RYDALL DD results

- The baked-on oil was completely removed and client could see the actual metal of the tubes.
- Client was "completely astounded by the results" also stating, "[**RYDALL DD**] made those tubes look brand new!" 🏆

FOUL TERRITORY

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

Odors from Portland sewage plant

What's that smell in Portland? Blame it on an \$11.4 million upgrade and an aging aeration system at the East End Wastewater Treatment Plant.

Inadequate aeration of the sewage in open tanks at the plant coincided with the warmest and most humid months of the year, when odor complaints tend to increase.

Aeration is a critical step in treating wastewater. After entering the treatment plant, wastewater is screened to remove debris, such as sticks and trash and other inorganic material. Wastewater is then moved to a series of covered tanks, designed to allow the solids to settle to the bottom. Those solids are later removed, processed, treated and typically recycled as inexpensive organic fertilizer.

After the sediment is removed, the water is aerated, a process that involves the circulation of oxygen to encourage the growth of microorganisms that consume more than 90 percent of the remaining organic material. A lack of oxygen can lead to increased odors. (<http://www.pressherald.com/>)

This plant would benefit from **RYDALL WO Water Optimizer**. **RYDALL WO** is a technologically advanced product that is natural in origin, safe to handle and environmentally beneficial in application. **RYDALL WO** contains no bacteria and is non-toxic to humans, animals, fish and plants. **RYDALL WO** enhances the already present microorganisms and increases dissolved oxygen levels to further enhance the wastewater system. Furthermore - **RYDALL WO**, in conjunction with prior benefits, also eliminates odors from lagoons, sludge handling facilities and sewers.



RYDALL OE and Landfill Odors

Landfill odor is a very serious issue, which can result in fines as well as neighbor complaints. Landfill odor is mainly caused by hydrogen sulfide, ammonia, mercaptan and skatole. In response to these needs, Apex Engineering Products Corporation offers **RYDALL Odor Eliminator OE**, an environmentally safe solution for the treatment of problematic odors associated with landfill/compost operations, grease traps, and holding tanks.

RYDALL OE is a unique biocatalyst containing a complex mixture of natural nutrients, vitamins, and trace elements. **RYDALL OE** is specifically designed to eliminate industrial odors without the need for hazardous chemicals, essential oils or masking fragrances. **RYDALL OE** is not only versatile and effective, but offers a completely safe liquid-phase odor solution.

- Biodegradable, environmentally beneficial
- Non-Hazardous, Non-Toxic & Non-Irritating
- Made in USA
- Spray on application
- Easy to use & safe for personnel, ultra concentrated, used in ppm doses

[Click here to watch **RYDALL OE** in action!](#)



Dirty Pictures

Have a dirty piece of equipment? It can be anything from a scale-filled tube to a grease-covered machine. Take a before and after photo from the same angle and send us photos of your fouled equipment and it could be used in a future edition of *Apex Quarterly*.

Email a high resolution jpg or tif (1MB or higher) with a brief description of the equipment (type/model, age, function, etc.) and type of contaminant to:

Patrick Cummings at pjc@rydlyme.com



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

For 70 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 9001:2008 Certified Company providing the highest level of support and quality of products to our customers...**another formula that hasn't changed in 70 years!**

Made in the USA

DESCALER & 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 & 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 DD Definitive 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.

ODOR CONTROL & 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 H₂S, COD, BOD, FOG, TDS and TSS. This unique biocatalyst is also effective in enhancing methane production and O₂ content.



BUCKED SCENT ELIMINATOR is born and bred from our industrial products, BUCKED is designed to eliminate the scent hunters carry in order to be invisible! For more information, visit our dedicated website at www.getmebucked.com!

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[\[click on logos to learn more\]](#)