

APEX

QUARTERLY

FOURTH QUARTER 2019

IN THIS ISSUE:

***RYDLYME* PREVENTATIVE MAINTENANCE TIP -
CLEANING SHELL & TUBE HEAT EXCHANGERS!**

***RYDLYME* CLEANS CENTRIFUGE FROM
MIDWESTERN WASTEWATER FACILITY!**

**INDUSTRIAL DESCALING SYSTEMS - PEEK
INTO HOW *RYDLYME* CIRCULATES**



**NEWS ON SAFE
CHEMICAL SOLUTIONS
FROM APEX ENGINEERING
PRODUCTS CORPORATION**

RYDLYME Descaler | Shell and Tube Heat Exchanger Descaling

Scale accumulation in shell and tube heat exchangers can rob the equipment's efficiency. This scale build up can be made of rust, mineral deposits, calcium, limescale and many other corrosive deposits. Much like changing oil in your car, it is crucial that a preventative maintenance program be put in place on your equipment. The most effective method is to utilize **RYDLYME** descaling chemical and one of Apex Engineering Product's Descaling Systems.

Even 1/32" of scale can cost thousands in unnecessary expenses to keep the equipment running! More importantly - neglecting this scale build up of the heat exchanger can greatly reduce the lifespan of the equipment. Some scale is actually corrosive to the tube material, eating away at the tube walls! Removing this scale in a timely manner will ultimately increase the equipment's lifespan and efficiency.



Shell and Tube Heat Exchanger Cleaning Methods

Just like in any industry, there is the hard way and the smart way of getting the job done. Traditional methods of tube cleaning such as rodding and hydroblasting are expensive, time consuming and often lead to equipment downtime. In some cases, it's difficult to access the tubes to hydroblast or rod! This compounds with production loss as well as revenue loss.

So, now that we've talked about the hard way to clean, let's talk about the smart way to clean. Using **RYDLYME** Biodegradable Descaler to remove unwanted scale is easy, safe and quick! The World's Leading Biodegradable Descaler, **RYDLYME**, is non-corrosive, non-hazardous and can be disposed of easily! Descaling heat exchangers is made even easier with the use of one of our descaling systems!

Shell and Tube Heat Exchanger Typical Cleaning Procedure

Apex Engineering Products has been around for more than 75 years manufacturing safe chemical solutions, so we know our way around a heat exchanger.

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 back 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 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. As each individual system varies, please contact our technical staff for your specific requirements.

Quantities of RYDLYME to Clean Water Side of Shell & Tube Heat Exchangers

Length in Feet

	4'	5'	6'	8'	10'	12'	16'	18'	20'	24'	30'	36'	40'
4"	1	1	1	2	2	2	3	3	3	4	5	6	6
5"	1	1	2	2	3	3	4	5	5	6	8	10	10
6"	2	2	3	3	4	5	6	7	7	9	12	15	16
8"	3	3	4	5	7	8	10	12	13	16	20	25	30
10"	4	5	6	8	10	12	16	18	20	25	30	40	45
12"	6	7	9	12	15	18	24	27	30	35	45	55	60
16"	10	13	16	21	25	30	42	50	55	60	80	95	110
20"	16	20	25	32	40	50	65	75	80	100	120	150	160
24"	25	30	35	50	60	70	95	110	120	140	180	220	240
30"	35	45	55	75	90	110	150	165	180	220	280	330	360
36"	55	65	80	110	130	160	220	250	275	330	400	495	550
40"	65	80	100	130	160	200	260	300	330	400	500	600	660
44"	80	100	120	160	200	240	320	360	400	475	600	720	800
48"	100	120	140	190	240	280	380	425	480	560	710	850	950
50"	105	130	160	210	260	315	415	470	520	625	780	935	1040
54"	120	150	180	240	300	360	480	540	600	715	895	1075	1195
60"	150	185	220	295	370	445	590	665	740	885	1105	1325	1475

Gallons of RYDLYME

fig 1.1

- | | | | |
|---|---|---|---|
|  = 1 Hour |  = 3 Hours |  = 5 Hours |  = 7 Hours |
|  = 2 Hours |  = 4 Hours |  = 6 Hours |  = 8 Hours |



CASE STUDY

Manufactured Since 1942 by: Apex Engineering Products Corporation



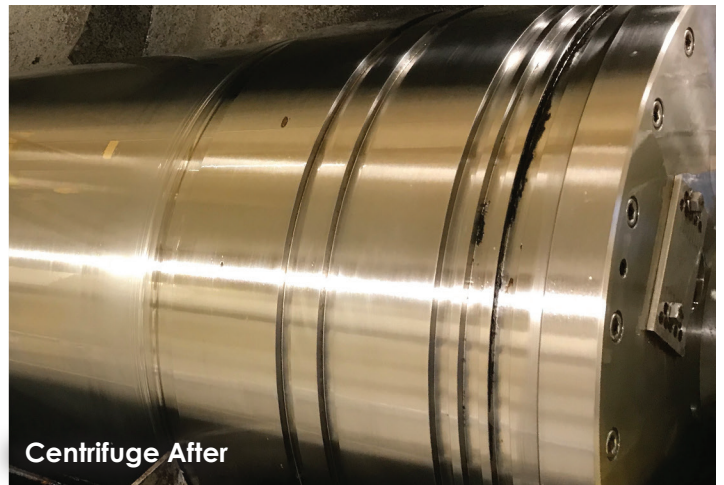
DISTRICT WWTP CENTRIFUGE CLEANING

A Midwest wastewater treatment plant experiencing struvite buildup on their centrifuge systems turned to **RYDLYME** Biodegradable Descaler as a solution to remove the rapidly growing scale buildup. Their previous cleaning method consisted of personnel utilizing hand chisels which proved to be a strenuous task and not very effective. For the **RYDLYME** cleaning, the basin of the horizontal centrifuge was filled with a 20% **RYDLYME** solution and then the centrifuge was set to rotate at 5RPM. The unit was inspected 16 hours later.

The wastewater treatment plant personnel were extremely impressed with the **RYDLYME** cleaning results! After the cleaning, the centrifuge looked brand new. **RYDLYME** was able to remove buildup from areas/crevices that were utterly impossible to access via mechanical cleaning methods.



Centrifuge Before



Centrifuge After

CHALLENGE

Thick deposits of struvite had accumulated on numerous centrifuges at a district wastewater treatment plant.

SOLUTION

A 20% solution of **RYDLYME** was added to the centrifuge basin and the centrifuge was set to 5RPM to rotate for 16 hours .

RESULTS

After the **RYDLYME** cleaning, the plant was extremely impressed with the results! The plant saved time and effort using **RYDLYME** instead of using mechanical cleaning methods.



15MDC & 15MDO DESCALING SYSTEMS



RYDLYME can be purchased in numerous sized containers to solve your scaling issues.

RYDLYME Descaling System 15MDO

The 1.5' **15MDO** Iwaki Walchem Magnetic Drive Pump Only is a seal-less .75Hp centrifugal type constructed with long lasting materials perfectly suited for **RYDLYME**. This unit weighs 46 pounds and comes with a power supply cord and sturdy plastic base. It can operate up to 75 GPM or a 45' head.

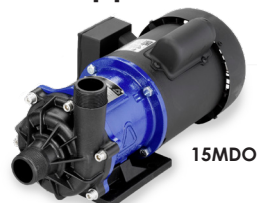
The **15MDC** unit is assembled on a mobile 2'X4' heavy duty plastic cart with 8'' swivel wheels. This high quality system contains a 30-gallon circulation bucket with a drain valve coupled via bulkhead fittings to multiple true-union valves for simplistic operation. The included **15MDO** is mounted directly to the cart and comes with three 1.5'' diameter 10' hoses. The pump is GFCI wired and operated by a switch in a mounted weatherproof electrical box complete with a 20' power cord. A by-pass system is hard piped into this unit to accommodate both small and large applications, as well as water flushing the unit upon completion. The system is fully assembled and ready for immediate use.

RYDLYME Descaling System 15MDC Features:

- 1.5'' hose connections
- 2'X4' heavy duty plastic cart with 8'' wheels
- 30-gallon circulation bucket with drain valve
- Three 1.5'' diameter 10' hoses
- GFCI wired and operated via weatherproof switch
- 20' power cord

RYDLYME Descaling System 15MDC Applications:

- Boilers
- Condensers
- Vacuum pumps
- and much more!



Click to see how the **15MDC** works!

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. **ANSI 60/NSF-Certified Nonfood Compounds (A3)**.



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 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, WATER TREATMENT & WASTE CONVERSION



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.



AEPC Thermal is a division of Apex Engineering Products Corporation (AEPC). Our mobile waste conversion plants are trailer mounted and ready for deployment!

1241 Shoreline Drive Aurora, Illinois 60504 T: 630.820.8888 | 800.451.6291 | F: 630.820.8886 | MADE IN THE USA

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!**