

Manufactured Since 1942 by: Apex Engineering Products Corporation

RYDLYME
World's Leading Biodegradable Descaler

Chillers & Condensers

RYDLYME dissolves water scale, lime, mud and rust deposits safely, quickly and effectively!



*the solution to your
water scale problems*

RYDLYME® for Chillers & Condensers

RYDLYME is an excellent choice for cleaning water formed deposits from Evaporative Condensers, Shell & Tube Condensers, Absorption Units and Centrifugal Chillers. This descriptive sales brochure should enlighten you to a very helpful tool to add to your toolbox. This tool, called **RYDLYME**, will help you rid your equipment of scale deposits and have them working at top efficiency in just hours. Let's take a closer look:

Whenever there is a deposit of any type on a heat transfer surface, it retards heat transfer. This is referred to as "thermal resistance" and 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 (about 1/32") of deposit corresponds to an increase in energy costs of over 30%!

This 30% increase in costs relates to a hardness scale (calcium carbonate) deposit. Iron deposits (same thickness) are greater insulators and therefore have lower heat transfer coefficients. The actual heat transfer coefficient of a fouling/deposit (scale, lime, corrosion products, dirt, silt) depends on what it is. Certainly, any fouling/deposit contributing a fouling

factor (thermal resistance) will increase electrical consumption and decrease efficiency.

The increase in electrical energy takes place in the compressor. Scale deposits increase the resistance to heat transfer, and in the condenser higher refrigerant gas temperatures will result. Higher refrigerant gas temperatures mean higher gas pressures, which require greater energy to compress the refrigerant. Therefore, there is an increase in electrical power to operate the compressor.

To minimize such potential energy losses requires an ongoing, daily monitoring of KW consumed per ton of refrigerant/air conditioning being generated. The purpose is to recognize inefficient operation and determine where the problem is and fix it. Each day of inefficient operation means excess energy expenditures. Fortunately, **RYDLYME** dissolves the toughest water formed deposits from virtually any type of water heated, cooled or operated equipment.

Please request a "Fly Sheet" or guide outlining step-by-step instructions on returning your particular equipment back to peak operating efficiencies utilizing our innovative and biodegradable descaler, **RYDLYME**. Our technical assistance is offered FREE OF CHARGE to afford maximum benefits to you and your company.



Periodic **RYDLYME cleaning is necessary for maintaining your equipment at peak operating efficiency and maximum rated output!**

Evaporative Condensers

When water scale is deposited on the heat transfer surfaces of an evaporative condenser, the cooling water from the spray heads cannot efficiently condense the refrigerant gas in the coils. As a result, inadequate cooling, overworked machinery, and expensive operation is incurred.

To remove these deposits simply turn off the water supply, slowly add the recommended quantity of **RYDLYME** to the reservoir, turn on the circulating pump of the unit and circulate **RYDLYME** through the headers and spray nozzles. This will allow the **RYDLYME** to make contact with the heavy deposits of water scale surrounding the coils and dissolve



these deposits into solution, like sugar in coffee. After just a few hours, drain to normal plant sewer, water flush and return unit back to efficient operation!

Shell & Tube Condensers

Water scale deposits in the condenser coils cause the compressor to kick out on high head pressure and lowers the cooling capacity of the unit. To remove these insulating water scale, lime, mud, and rust deposits formed on the inside of the shell & tube condensers, simply circulate **RYDLYME** in through the water supply and out through the water return. Circulate for the prescribed time or until condenser is clean, flush with water, replace zinc or magnesium anodes, and return your equipment back to service, *all within one eight hour shift!*

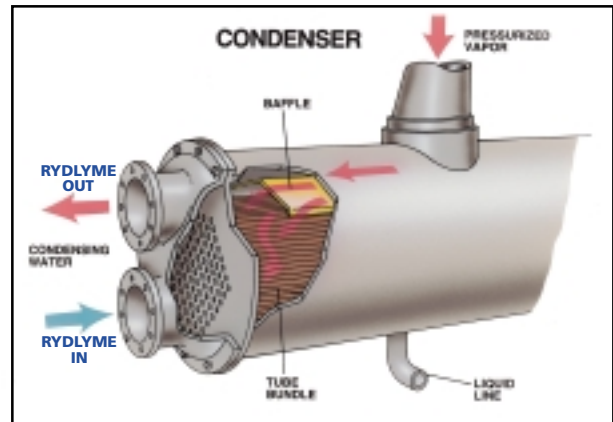
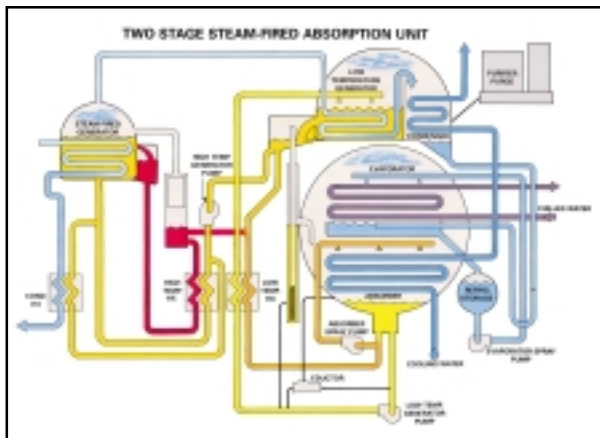
Absorption Units

Water scale, lime, mud, and rust deposits that accumulate on the waterside of absorbers and condensers materially affect the operation and efficiency of any absorption type air conditioning unit.

The presence of these mineral deposits, along with lithium bromide or lithium molybdate, can usually be ascertained by the temperature readings of the inlet and outlet water to the absorber and condenser, the skin and gas temperatures, as well as the generator temperatures. When these temperatures fail to stay within an efficient operating range, the accumulated deposits should be removed with **RYDLYME**.

Water formed deposits build up in absorbers and condensers at a rate dependent upon the hardness of the cooling water. The harder the water, the faster the deposits accumulate! Furthermore, a unit that has never been cleaned will require more **RYDLYME** than a unit receiving periodic or annual cleaning and proper maintenance.

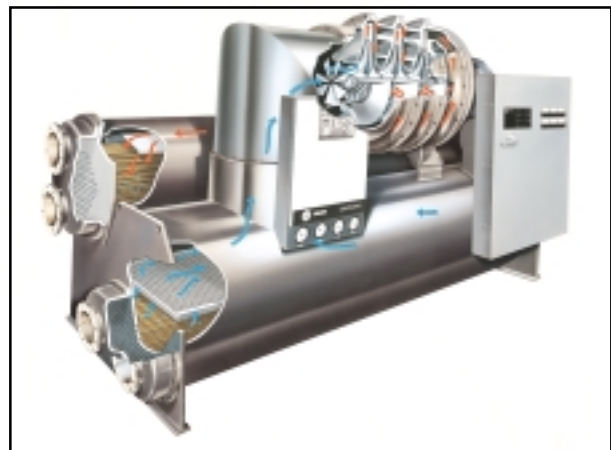
The entire cooling water circuit, including absorber, condenser, and piping can be cleaned while the unit is in operation. This attribute is especially important when humidity and temperature control are necessary to keep the plant in efficient operation.



*Peak operating efficiency is obtained with regular periodic cleanings using **RYDLYME***

Centrifugal Chillers

The problem most frequently encountered in the operation of centrifugal units is water scale accumulates in the condenser and cooling tower, which causes inefficient operation. The removal of such deposits can very easily be accomplished while the unit is in operation by the addition of **RYDLYME** to the cooling tower water.



*Periodic **RYDLYME** cleanings will allow your centrifugal chiller to operate at peak efficiency during high demand cycles*

The dissolved water scale, lime, mud, and rust deposits, including the expended and biodegradable **RYDLYME**, will be conveniently dissipated by evaporation loss, make-up water and bleed off. Periodic **RYDLYME** cleaning will maintain peak operating efficiency of your unit and give you maximum rated output.

*Adding **RYDLYME** to the cooling tower water gets rid of water scale accumulations in the condenser and cooling tower while the unit is in operation!*

Recommended **RYDLYME** Quantities

TONNAGE	EVAPORATIVE CONDENSERS	SHELL & TUBE CONDENSERS	CENTRIFUGAL CHILLERS	ABSORPTION UNITS	CIRCULATING HOURS
10	4	4	3	7	3
25	10	10	10	20	4
50	20	20	15	35	4
75	30	30	25	55	4
100	40	40	30	70	5
125	50	50	40	90	5
150	60	60	45	105	5
200	80	80	60	140	5
250	100	100	75	175	5
400	160	160	120	280	5
500	200	200	150	350	6
750	300	300	225	525	6
1000	400	400	300	700	7
2000	800	800	600	1400	7
3000	1200	1200	900	2100	8

Why Should You Use **RYDLYME**® ?

RYDLYME is **EFFECTIVE** . . . it dissolves approximately two pounds of scale per gallon!

RYDLYME is **NON-HAZARDOUS** . . . it does not fall under any of the seven federally designated classes of hazardous waste!

RYDLYME is **BIODEGRADABLE** . . . it has a biochemical oxygen demand of 16 mg/l and can be disposed of through existing plant sewers!

RYDLYME is **SAFE** . . . it can be held in the open hand without injury!

RYDLYME is **ECONOMICAL** . . . Call us at (800) 451-6291 to learn how an investment in **RYDLYME** can multiply your efficiency!



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