

RYDALL  **HD****BIODEGRADABLE Heavy Duty Degreaser** TM

Biodegradable Heavy Duty, Industrial Grade Degreaser

RYDALL HD is our water soluble, non-butyl, non-phosphate, non-corrosive, alkali emulsifier. This new and innovative product is used specifically on all carbon-based derivatives that are found on the oil and/or process sides of your critical equipment or systems. **RYDALL HD**, designating our Hheavy Duty degreaser, was formulated to be utilized in many applications including; oil bundles, heat exchangers, lube oil coolers, crank cases, machine parts washers, and any other hydrocarbon fouled equipment. This vital equipment is installed in the automotive, oil & gas, pharmaceutical, petrochemical, power, pulp and paper, steel, or similar industrialized manufacturing facilities.

Product Advantages

- FAST:** Reduce process equipment downtime resulting in more profits!
- SAFE:** Safe on personnel, safe on equipment, and safe to our environment!
- EASY:** Does not require disassembly of equipment, thus saving labor, time and money!
- SIMPLE:** Simple enough to be applied by your own plant personnel!
- BIODEGRADABLE:** Product is readily biodegradable!

Directions for use:

The way in which **RYDALL HD** works, is that the active, citrus based, chemical component of the product, breaks down and demulsifies the carbons into the circulating solution. It effectively separates the oil bonds that hold together all of the different hydrocarbons that comprise the fouling residue. Our highly concentrated **RYDALL HD** is utilized in a diluted format and is typically heated to between 140-160°F (60-71°C), but may also be used at ambient temperatures.

Although most every **RYDALL HD** application is slightly different, the fundamentals are essentially the same. Use **RYDALL HD** at a 50% dilution for circulation applications, pumping in the bottom of the equipment, up and through the top of the equipment, and back to your recirculating tank, for

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Directions continued:

the prescribed amount of time (typically 4-6 hours). For surface and pressure washer applications, use at a 25-50% dilution, depending on the severity of the surface contamination.

After the recommended circulating time has expired, pump or drain the expended, emulsified solution back into your recirculating tank, then thoroughly flush the equipment with water. With newly restored flow and volume rates, and more importantly; vastly improved heat transfer, you may return the unit back to "as new" or peak operating efficiency.

If, at any time, you have questions relating to your particular application regarding our products or procedures, please feel free to contact our technical department for **FREE** consultation. Our contact information can be easily located on the reverse side of this bulletin or on our website at: www.ApexEngineeringProducts.com.

Procedure for degreasing a heat exchanger:

1. Isolate and drain the oil (hydrocarbon) or process side of the exchanger to be cleaned.
2. Install valves between the isolation flanges and the heat exchanger on both the supply and return piping. On larger volume applications, we recommend a 2" inlet/outlet as a minimum. The larger the valves and hosing, the better the flow and performance of **RYDALL HD**!
3. The same principle applies for the circulation pump as with the valves and hoses. We recommend a 90-140 GPM (340-530 LPM) flow rate for the **RYDALL HD** circulation pump. The higher the volumes and flow rates of the pump, the better the performance of the cleaning solution.
4. Generally, the circulation system described above, will circulate **RYDALL HD** from a tote or Baker tank, to a high flow rate pump, to a plate and frame steam heat exchanger (to elevate the temperature to between 140-160°F (60-71°C)), in through the bottom of the equipment and out through the top, and finally back to the recirculating tank.
5. Ascertain the proper quantity of **RYDALL HD** for this particular job. Most applications require between 25-50% dilution of the total volume of the equipment or system to be cleaned.
6. Pump all of the required **RYDALL HD** into the exchanger. Once that is accomplished, begin to add water to the tank until a stable circulation is realized. Once the desired level to maintain circulation is reached, turn off the water supply.
7. Continue circulating the solution for the recommended amount of time. The time required to completely clean your application will depend on the severity of the deposits to be removed and the system volume. As a general guideline, most applications will require between 4-6 hours of circulation. Heavy deposits or volumes over 1,000 gallons (3,785 liters) may require 6-10 hours of circulation. (Please consult with your **RYDALL** representative or our technical staff for a more exact recommended circulation time). As the circulation progresses and the cleaning solution removes the deposits from inside of the unit, the volume will increase slightly. To account for the increase in volume, add water to the circulation vessel as needed.
8. Upon completion of the recommended circulation time, and thorough water flush, all of the solution should be pumped back into the recirculating tank.
9. If desired, the used cleaning solution may be split-phased within the recirculating tank. Within a short amount of time, the lighter hydrocarbons will release from the **RYDALL HD** and rise to the surface of the solution. These hydrocarbons can then be pumped off the top and efficiently used in preheaters, burners, boilers, or similar oil-fired equipment. Inline industrial filters may also be used to separate the heavier particles, and/or insolubles, when the infrastructure allows.

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RYDALL HD is a safe, yet powerful solution to your degreasing and cleaning needs. Although **RYDALL HD** is typically circulated through equipment, it can be utilized in many other applications where hydrocarbon deposits are present. Try it the next time you have a buildup of heavy hydrocarbon-based deposits in your critical equipment or systems or contact our technical staff to determine if **RYDALL HD** is the right product for your application. The solution is packaged and shipped in 5-gallon jugs (49 lbs), 55-gallon drums (520 lbs), and 330 gallon totes (3,085 lbs).

For additional information, please contact our manufacturing facility at 630-820-8888 or visit our website at:
www.ApexEngineeringProducts.com.

Precautions: Not to be taken internally. This product may cause redness or mild irritation to the eyes. Prolonged or repeated exposure may cause drying of the skin. Wear rubber gloves and eye protection. Keep out of reach of children and pets. Dispose of emulsified cleaning solution in accordance with local, state, and federal laws and regulations.

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