



WL Liquid Scale Remover



Virginia WL Liquid Scale Remover is ideal for removing scales from water-cooled condensers, chillers, hydronic boilers or any other non-potable water system when economy and ease of use is of maximum importance. Of all water quality problems, scale is the most prevalent. Scale is primarily composed of calcium and magnesium carbonate, but may also form as calcium sulfate, silica complexes and ferric oxide. These materials enter the system in a dissolved state and due to certain chemical and physical forces, they become insoluble and fall out of solution. Scale in a system can coat the inside of the tubing, restricting water flow and acting as an insulator, reducing the transfer of heat as well as increasing water demand from systems.

Made from a hydrochloric acid base, Virginia Liquid Scale Remover for standard descaling contains anti-foaming agents in its formula. However, in some instances, additional quantities may be required to control excessive foaming. Our catalog number AF1 AntiFoam is available for this purpose. Virginia Liquid Scale Remover contains an inhibitor to minimize potential metal damage and comes complete with pH test papers to test the solution acid strength.



Characteristics:

- Inhibited hydrochloric acid base.
- Contains antifoaming agents.
- Includes pH test papers.
- Available in two different concentrations.
- Easy to use.
- Economical.

Uses:

Any non-potable cooling or heating water application which requires descaling through the use of an effective and economical solution that is easy to use.





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Dilution Ratios:

The following table, developed from field experience, will provide a rough estimate of the actual requirement for complete scale removal. The chemical requirements in this table are approximations only – they are not intended for use as final materials costs when making up bids on specific jobs. Actual requirements may vary due to scale composition and thickness.

Type of Scale	Thickness of Scale Deposit	Gallons of Regular Liquid (WL) per 10 Tons of System Capacity	Gallons of Concentrated Liquid (WL C) per 10 Tons of System Capacity
Light Scale	Less than 1/16"	2.5	2
Average Scale	1/16" to 1/8"	5	4
Heavy Scale	1/8" to 1/4"	10	7
Very Heavy Scale	1/4" and over	15	10

Suggested Instructions for Use:

1. Turn off the circulating pump.
2. Drain and flush all sludge and dirt out of the sump since these consume and waste cleaner.
3. Close, bleed and refill the sump with fresh water.
4. Estimate the total number of gallons of water in the system and add initial dosage of chemical at a ratio of one gallon of Virginia Liquid Scale Remover to 15 gallons of water (One gallon of Concentrated Liquid Scale Remover to 20 gallons of water). To determine the systems capacity in gallons, the best source for system capacity is the manufacturer of the equipment. Another method is to fill the system up completely and measure the capacity as you drain it. If these options aren't possible, you can calculate your system capacity based on the following formulas:

Rectangular Objects (Tanks and Sumps):

$$(\text{Length}) \times (\text{Width}) \times (\text{Height})(\text{in feet}) \times 7.5 \text{ gal/cu.ft.} = \text{gallons}$$

Cylindrical Objects (Vessels):

$$(3.14) \times (\text{Radius}^2) \times (\text{Height})(\text{in feet}) \times 7.5 \text{ gal/cu.ft.} = \text{gallons}$$

Copper Pipe		Steel Pipe	
Nominal Size	U.S. gal. per foot	Nominal Size	U.S. gal. per foot
3/8	.008	3/8	.010
1/2	.012	1/2	.016
5/8	.018	3/4	.028
3/4	.025	1	.046
1	.043	1-1/2	.102
1-1/2	.093	2	.170
2	.1607		

5. Operate the system in the normal manner. Check the cleaning solution with the Exact Control Test Strips® every 15 to 20 minutes (See instructions accompanying the test strips).
6. A lowering of head pressure to normal levels will indicate when the unit is clean. Inspect the tubes when possible.
7. When cleaning is complete, drain the spent solution. Disposal must be in accordance with all applicable Federal, State and Local regulations. *Notes: Acid should be neutralized with soda ash or other means before disposal. Do not drain to lawns or plants that might be damaged.*
8. Rinse out the system with at least two fillings of fresh water. Refill

the sump and resume normal operation.

Cautionary Notes:

- For professional use only.
- Never leave the cleaning solution in the equipment for more than 10 hours; scale may be redeposited and will be more resistant to further chemical cleaning.
- Exceeding concentration can result in damage to sheet metal.
- Do not use on stainless steel.

Refer to MSD sheet for further information. MSD sheets are available at your local wholesaler.

Package Sizes Available:

Standard formulation available in 1 and 5 gallon containers.

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