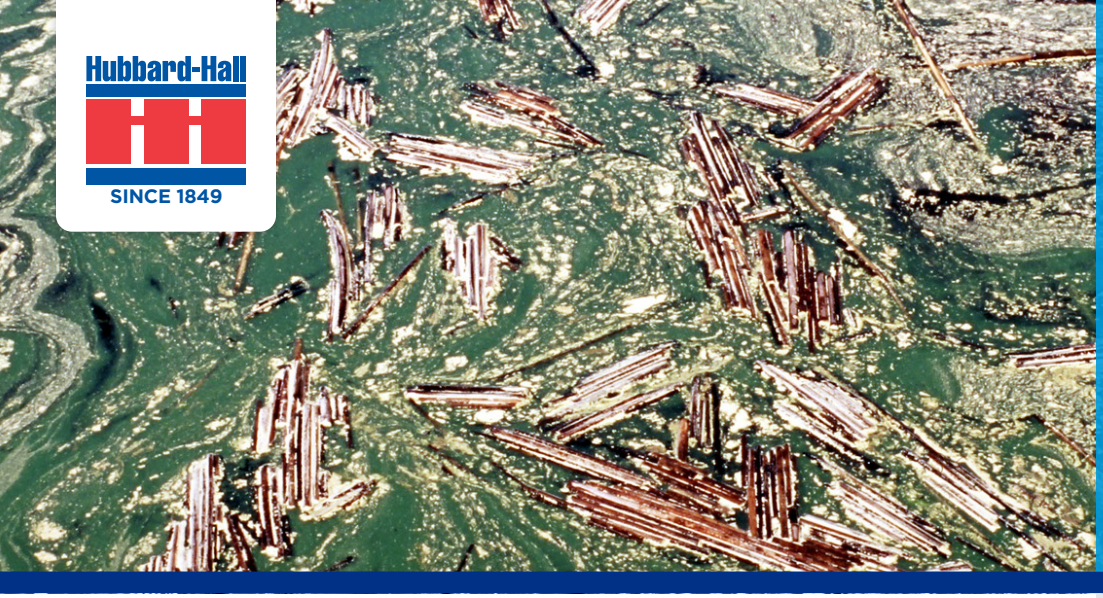

Hubbard-Hall
SINCE 1849

"We've found that when we're able to go tank side, we can really made a difference for our clients."

Robin Deal
Product Leader
AquaPure

Treating the Hard to Treat

Aquapure® CAL

The Aquapure CAL series of rare earth chemistries from Hubbard-Hall are highly effective chemical agents for the removal of total phosphorus and phosphorus in combination with heavy metals, oils and grease and fluoride.

The CAL series requires less chemistry to raise the pH and precipitate the phosphorus out of solution. Less chemistry reduces cost and sludge generation, and more effective chemistry reduces possible EPA recommended surcharges. CAL products are easy to use and require no additional equipment, downtime or recertification.

Physical Data - CAL 100

pH operating range	4.0-8.0
Usage	Phosphorus removal
Appearance	Clear to yellowish liquid
Composition	Refer to SDS
Weight per gallon	Contact Hubbard-Hall
Starting dose points	Full strength at 0.5 - 2.0 ml/gallon

Equipment: Storage tanks: either high density polyethylene, cross linked polyethylene, rubber lined steel, or fiber glass. Fittings for pumps and piping: high density polyethylene

Getting ahead of a growing concern.

The EPA is working with all 50 states to develop nitrogen and phosphorus permit effluent limits for dischargers. Excess nutrients (nitrogen and phosphorus) are contributing to reduced oxygen levels and hazardous algal blooms in fresh, estuarine, and coastal waters.

Publicly owned treatment works (POTWs) are establishing local limits on phosphorus discharge from industrial users

Although rare earth chemistries are more expensive per pound, they are proving to be approx. 1/3 the total cost of calcium, iron and aluminum chlorides

Less chemistry results in reduced amounts of hazardous sludge, no contribution to aluminum discharge and reduced scale build-up in pipes

CHEMISTRY	AMT. NEEDED TO REMOVE 1 LB PHOSPHORUS	COST TO REMOVE 1 LB PHOSPHORUS	EST. COST/1LB	IDEAL PH RANGE OF EFFICACY*	AMT. NEEDED TO REMOVE 80 LB OF PHOSPHORUS	COST TO REMOVE 80 LB OF PHOSPHORUS
Aquapure CAL 100	7.15 lbs	$13.44	$2.25	7-8	572 lbs	$1287.00
Calcium Chloride	62.88 lbs	$18.23	$0.29	9.5+	5040 lbs	$1458.40
Ferric Chloride	55.74 lbs	$18.95	$0.34	9.5+	4459 lbs	$1516.00
Poly Aluminum Chloride	57.18 lbs	$34.88	$0.61	9.5+	4574 lbs	$2790.40
Alum	117.21	$111.35	$0.95	9.5+	9377 lbs	$8908.00

*Note: Shown above: Hubbard-Hall CAL 100 – results will vary based on chemistry used. Additional treatment is needed to bring pH level back to 7-8 for discharge

Special Considerations

In solids where rare earths are present, a false positive reading for arsenic may result due to wavelengths that are nearly identical to the rare earth elements. SW-846 (EPA document 503B) suggests using the following alternate methods: ICP-MS (EPA method 6020B) or Graphite Furnace Atomic Absorption (GFAA) (EPA method 7010)

Other Applications

Aquapure CAL 50 for Phosphorus, oils/grease, and metal removal
Aquapure CAL 76 for Phosphorus and metal removal
Aquapure CAL 225 for Phosphorus and Fluoride removal

Our people.
Your problem solvers.

Expertise you can trust.
32% of Hubbard-Hall associates are in tech support, customer service, or sales. This means that you get answers fast while the rest of our team gets your order delivered on time and in spec.

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