

BlueTraktm - Automated Control of Cooling Tower Chemical Feed

1209

Can You Automatically Control What's In Your Cooling Tower??



Until now, the answer would have to be “not really”. Currently the best automatic chemical control and feed method is based on feeding chemical inhibitors in direct proportional to metered makeup water addition. This method, however, can be defeated by a system water loss sufficient to lower operating cycles which results in lower than required inhibitor levels, leading to undesirable corrosion and/or scaling.

The automated solution to this problem is use of BlueTrak for continuous testing and automatic control of cooling water treatment product feed.

Combination of ProChemTech developed BlueTracetm organic colorant tracer technology with advanced instrumentation makes real time automatic control of cooling water inhibitor levels available at an affordable price.

Product Development

Working with Advantage Controls, Inc, a leader in development of state of the art automated control equipment for cooling water systems, an automated control system has been developed which utilizes the level of BlueTrace in cooling water to provide for continuous monitoring and automatic feed to obtain constant, proper chemical inhibitor level in cooling water.

At right, an example of the new automatic control system, a Megatron SS-BlueTrak, uses the BlueTrak flow through spectrophotometer to measure the amount of BlueTrace in the cooling water. Chemical addition is thus based upon real time measurement of BlueTrace, compensating for any cooling system problems to maintain desired inhibitor levels at all times.



Technology

BlueTrace is an organic colorant that strongly absorbs at 620 nm, giving a faint blue color to treated water. Both manual and automatic control methods use an inexpensive laser diode based, specific wavelength spectrophotometer for determining the level of **BlueTrace** in treated cooling water. The manual test method provides for simple, fast, and very accurate determination of **BlueTrace** concentration when traditional feed control methods are used, while the **BlueTrak** provides for total automation of chemical feed. **BlueTrace** has been employed since 2005 and is now used in several hundred cooling towers nationwide.

Health&Safety

From the health&safety aspect, **BlueTrace** colorant is non-hazardous and very low toxicity. Toxicity data on **BlueTrace** colorant shows an oral rat LD 50 value exceeding 2 g/kg, which is similar to common table salt. **BlueTrace** colorant contains no toxic heavy metals and is totally biodegradable in the environment.



Aesthetics

BlueTrace imparts a pleasant, faint blue coloration to treated waters at typical usage levels, which is reported to aid in control of algae by blocking specific wavelengths needed for algae growth.

Economics

At the typical treated water levels of 0.5 to 1.5 mg/l active colorant, use of **BlueTrace** is very economical, adding a few cents per pound to a typical phosphonate - polymer product designed to be maintained at 100 to 200 mg/l in the treated water. Both manual and automatic control testing cost is low, the only expendable in manual testing being a suspended solids filter while the automatic control system utilizes inexpensive, replaceable in-line cartridge filters to

prevent positive results caused by suspended solids.

BlueTrak chemical feed control units are available as both economical stand alone units for systems equipped with conductivity blowdown and timed biocide controls or as an option on the advanced Advantage Megatron total cooling tower chemistry control unit. Both **BlueTrak** controllers are available directly from Advantage Controls, Inc., selected water management firms nationwide, and from ProChemTech.

ProChemTech International, Inc.

"Innovation in Water Management"

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