

Technical Bulletin

Azole Testing: It is in the best interest of anyone who operates a chiller plant.

Why is Azole Testing so important? Most copper bearing alloys are located at the heart of a chiller plant, in the chiller itself. Corrosion coupon results are only a relative indication of “water chemistry health,” because they do not take into account the condenser tube bundle skin temperatures. Premature chiller replacement is a very costly proposition and azole testing can ensure that this equipment is properly protected.

What assurance do you have when it comes to protecting copper tube bundles? Well most suppliers generally formulate cooling products with azole. When fed correctly, they are designed to supply enough azole to the recirculating water to protect all copper metallurgy within the system. Copper is relatively corrosion resistant and a little azole goes a long way.

When should you test for azole? You should test for azole in open recirculating cooling systems, which include chillers. Never assume that a particular product contains the proper amount of azole. A lot of suppliers have “one size fits all” products when it come to a geographic area.

The Do's and Don'ts of copper corrosion control:

- **Don't** assume that enough azole is in a particular formulation to meet every condition.
- **Don't** rely on copper corrosion coupons as an indication that results are good.
- **Do** run copper test and identify the demand for azole.
- **Do** make sure azole levels in the recirculating water exceed demand by 0.5-1.5 mg/l.
- **Do** feed supplemental azole or azole-containing inhibitor as needed.
- **Do** use ORP to control oxidant programs. Excess oxidant can destroy protective azole films.
- **Do** use special precautions when laying up copper tube bundles.

Your Kroff Chemical Company representative will be happy to review and recommend the proper program for your particular application.