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TECHNICAL BULLETIN #246

Test for Level of Corrosion Inhibition in MI-GLOW Concentrates

To evaluate the effectiveness of the corrosion inhibitors in the bath, the water-based system should meet the following test requirements. This test is based on the procedure outlined in ASTM D 4627-92. It is recommended that the inspector first try this procedure using a fresh solution, to become familiar with the test. This test requires an experienced inspector for proper interpretation. *WARNING* - The following procedure was developed in a controlled laboratory environment. Contamination from various sources may affect individual test results. Use of bath supplements, such as Circle Systems' CORROSION INHIBITOR 7 or WETTING AGENT 771, which are used to increase the level of corrosion inhibitors in the system, will alter the results of this test procedure.

1. The bath should be prepared according to the manufacturer's recommendation. To test system effectiveness, the sample should be taken directly from the work bath.

2. For MI-GLOW 778, prepare a 6.5% test solution by diluting 65 ml of the bath sample to a liter of water. For MI-GLOW 788, prepare a 3.5% test solution by diluting 35 ml of the bath sample to a liter of water.

3. 20 grams of 20/40 mesh degreased cast iron chips are mixed with 20 ml of the test solution. This is stirred for one minute.

4. The mix is then poured onto a large piece of filter paper (11 cm) which has been placed in a large weigh boat. The excess solution is carefully decanted off. The weigh boat is then covered with plastic film to prevent contamination and evaporation.

5. The surface of the chips and the surrounding filter paper of the sample should be checked at 15 minutes and then again at 30 minutes for evaluation as follows:

At 15 minutes, there should be no evidence of rust formation. If there is, the solution is substantially depleted of sufficient concentration of corrosion inhibitor and should be replenished.

At 30 minutes, there should be no evidence of rust formation. If there is a slight amount of corrosion just beginning to form, then the bath is now at the minimum concentration at which it should be run. Therefore, it should be replenished before it is further depleted.

Important: The corrosion inhibition properties of the MI-GLOW 778 and MI-GLOW 788 are intended to provide protection from the effects of using a water media rather than an oil media during the inspection process. They do not provide permanent protection; therefore exposure after inspection to other conditions such as weather, chemicals, etc. will not guarantee the continuation of protection from this solution/system.

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