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TEST CERTIFICATE — EAR-CONTROLLED DATA

Date: 3/10/2022
P.O. No.: Dave03042022
W/O No.: THE221-03-07-04060-1

ORDER # 215309
LINE # 1
P/N CO1311450306000
DESCRIPTION 304L
HEAT # BB622

4-Hour Immersion Corrosion Test

Corrosion Coupons: 304L, Heat BB622, ID # B4355 through B4357 and 4365 through 4367
Corrosion Solutions: Customer provided mineral deposit mixed with SDS + RTD aqueous descaler solution at a ratio of 50 grams mineral deposit to 500 mL solution.
Testing Method: ASTM G1-03 (2017) / Customer Requirement
Qty Tested: 6 (2 in vapor, 2 immersion, 2 with 50% immersion)
Testing Conditions: 2 sets of corrosion coupons were hung in a 1L Erlenmeyer flask. Mineral deposit was poured into the Erlenmeyer flask that that was then filled with 0.75L SDS + RTD aqueous descaler solution and attached to an Allihn condenser connected with flowing tap water.

The coupons were suspended with nylon monofilament arranged such that one coupon was hanging in vapor, one was immersed in the solution, and another was suspended with 50% surface immersed in the solution and 50% exposed in the vapor, for 4 hours. A strong effervescent reaction between test solution and mineral deposit caused a small amount of liquid loss from foam out through the Allihn condenser vent. When test was complete, approximately 40% of the two semi-submerged samples remained submerged.

Coupons were cleaned in alcohol before testing, and rinsed in water and dried after testing. Coupon dimensions before testing were measured with areas calculated. Coupons were weighed before and after the immersion corrosion test.

Observation: After the immersion corrosion test for 4 hours, no significant discoloration was observed. No localized corrosion (pitting etc.) observed.

Sample ID #	Width, mm	Length, mm	Thickness, mm	Hole Diameter, mm	*Area, mm ²	Area, cm ²	Weight before, g	Weight after, g	Weight Loss, g	*Corrosion Rate (mils per year, mpy)
B4355	19.20	19.20	19.20	9.70	2649.13	26.49	20.6800	20.6799	0.0001	0.0683
B4356	19.22	19.22	19.22	9.70	2654.35	26.54	20.7821	20.7818	0.0003	0.2046
B4357	19.24	19.24	19.24	9.70	2659.58	26.60	20.8319	20.8314	0.0005	0.3404
B4365	19.24	19.24	19.24	9.70	2659.58	26.60	20.8975	20.8974	0.0001	0.0681
B4366	19.25	19.25	19.25	9.70	2662.19	26.62	20.9113	20.9110	0.0003	0.2040
B4367	19.19	19.19	19.19	9.70	2646.53	26.47	20.8303	20.8299	0.0004	0.2736

Note: B4355 and B4365 were hanging in vapor
B4356 and B4366 started test with 50% surface submerged in solution and 50% exposed in vapor.
B4357 and B4367 immersed in the solution

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Respectfully submitted

Francine Dwyer
Quality Administrator

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ALL TESTING PERFORMED IN A MERCURY-FREE ENVIRONMENT