



Corrosion Testing Laboratories, Inc.

May 02, 2011

CTL REF #27075-2R

EarthClean Corporation
400 1st Avenue, Suite 525
Minneapolis, MN 55401

Re: Corrosion Testing of Three Alloys in 0.7 % w/w TetraKO™ per NFPA 18A

Presented herein are the results for the above referenced corrosion testing. EarthClean Corporation requested that Corrosion Testing Laboratories, Inc. conduct the Uniform Corrosion Tests detailed in NFPA (National Fire Protection Agency) 18A, *Standard on Water Additives for Fire Control and Vapor Mitigation*, paragraph 5.2.7. The standard allows for testing at two temperatures, 21° and 49°C. The tests in this study were conducted at the higher temperature of 49°C (120°F) for ninety days in TetraKO™ using a 0.7% concentrate-to-water mix ratio. Typically, corrosion rates increase with temperature, as do most chemical reactions. **It is our technical opinion that the corrosion rates of TetraKO solution, if tested at a lower temperature (i.e., 21°C), would be the same or lower than corrosion rates determined at 49°C.**

SUMMARY OF RESULTS

The corrosion rates of the exposed specimens were calculated based on mass loss measurements as described in NFPA 18A, 5.2.7. The calculations assume uniform loss of material over the entire test specimen-see Table 1, below. Based on information provided by the NFPA, **we expect the corrosion rates determined in this study to be within the acceptable range of proposed, 2010 NFPA 18A criteria for each alloy for ground based or helicopter bucket applications.**

TABLE 1.
Corrosion Rates of Three Alloys exposed to 0.7% TetraKO™
solution for 90 days at 49°C (120°F)

Alloy	Exposure	Corrosion Rates (mpy ¹)				Proposed 2010 NFPA 18A Allowable Rates
		Individual			Average	
		1	2	3		
T2024-T3 Aluminum	Total	1.3	1.0	1.4	1.2	2.0
	Partial	1.0	1.0	0.9	1.0	2.0
CDA270 Yellow Brass	Total	0.3	0.2	0.5	0.3	5.0
	Partial	1.1	1.5	0.5	1.0	5.0
4130 Steel	Total	3.5	6.1	4.1	4.6	5.0
	Partial	3.5	4.3	4.0	3.9	5.0

¹mpy = mils per year, 1 mil = 0.001'

EarthClean Corporation
May 2, 2011

If you have any questions, please feel free to contact us.

Very Truly Yours,
Corrosion Testing Laboratories, Inc.



Regina L. Ownsby
Technician

Reviewed and approved by:



Bradley D. Krantz
VP, Laboratory Services
NACE Materials Selection/Design Specialist Certificate
#4195

Policy Statement

This study has been performed and this report was prepared based upon information provided to Corrosion Testing Laboratories, Inc. (CTL) by EarthClean Corporation. The information contained in this report represents only the materials evaluated and such work performed in accordance with CTL's Quality Assurance Manual, Revision 13, issued 22 June 2009. The conclusions and opinions were developed with a reasonable degree of scientific and engineering certainty and were based upon the materials and information we have to date. If additional information became available (i.e., after continued review of the material received, or additional material submitted for examination), we would reserve the right to alter or change our opinion.