Uniform & Intergranular Corrosion [1]

Uniform corrosion is the destruction of a metal, relatively uniformly over the entire surface. Intergranular corrosion is the destruction of metal at the grain boundaries, usually on a microscopic scale.

Both types of corrosion can result in loss of structural integrity of the affected metal and potential loss of the use of the metal item. In the case of corrosion to aircraft, the loss can result in catastrophic failure.

The Forest Service requires corrosion tests throughout the evaluation period to minimize the risk of corrosion-caused equipment failure in the field.

Proper maintenance and cleaning of the equipment will also help to minimize these potential failures.

Product Performance Data on following pages

1	Standard Test Procedure 5.1 provides instructions for the uniform corrosion test. Standard Test Procedure 5.2 provides instructions for the intergranular corrosion test.

Uniform Corrosion [1]

FireFoam 103B

Temperature: °F	2024-T3 Aluminum Total 70	2024-T3 Aluminum Total 120	2024-T3 Aluminum Partial 70	2024-T3 Aluminum Partial 120	4130 Steel Total 70	4130 Steel Total 120	4130 Steel Partial 70	4130 Steel Partial 120	Yellow Brass Partial 120	Az31B Magnesium Total 70	Az31B Magnesium Total 120	Az31B Magnesium Partial 70	Az31B Magnesium Partial 120
	mils-per-year												
Concentrate													
Fresh	0.1	0.1	0.1	0.1	1.2	1.5	1.3	3.8	0.1	0.9	0.7	0.7	0.8
1.0-Percent Solution[3]													
Fresh	0.1	0.2	0.1	0.1	1.0	1.9	1.0	2.7	0.1	1.4	2.3	1.1	1.7
1 Year Missoula	0.1	0.1	0.1	0.4	0.8	1.5	0.8	2.0	0.1	2.0	2.6	1.5	1.8
1 Year San Dimas	0.1	0.1	0.1	0.1	0.9	2.1	1.1	3.4	0.1	1.7	2.1	0.9	1.2
0.1-Percent Solution[3]													
Fresh	0.1	0.1	0.1	0.1	1.0	1.6	1.0	2.1	0.1	2.6	2.2	2.0	1.2
1 Year Missoula	0.1	0.1	0.1	0.1	0.9	1.7	0.6	2.1	0.1	1.9	2.0	1.2	1.2
1 Year San Dimas	0.1	0.1	0.1	0.1	1.2	2.3	0.9	2.5	0.1	1.7	2.7	1.5	1.7

Notes:

1	Uniform corrosion rates (expressed in mils-per-year) were determined by 90-day weight loss tests. Values shown are the average of all replicates.
2	Results up to 0.1 mils-per-year are recorded as 0.1 mils-per-year.
3	Meets the intergranular corrosion requirements for aluminum.

Uniform Corrosion [1]

Phos-Chek WD 881

Temperature: °F	2024-T3 Aluminum				4130 Steel				Yellow Brass	Az31B Magnesium			
	Total		Partial		Total		Partial		Partial	Total		Partial	
	70	120	70	120	70	120	70	120	120	70	120	70	120
	mils-per-year												
Concentrate													
Fresh	0.1	0.1	0.1	0.1	0.3	0.6	0.7	1.9	0.5	0.6	0.7	0.3	0.8
1.0-Percent Solution[3, 4]													
Fresh	0.1	0.2	0.1	0.1	0.8	1.3	0.7	2.4	0.1	1.0	2.3	1.0	1.6
1 Year - Missoula	0.1	0.1	0.1	0.1	1.0	1.3	0.8	2.1	0.1	1.3	2.6	1.0	1.6
1 Year - San Dimas	0.1	0.1	0.1	0.1	0.9	1.2	0.6	2.2	0.2	1.3	2.4	0.9	1.5
0.1-Percent Solution[3, 4]													
Fresh	0.1	0.1	0.1	0.1	0.9	1.6	0.7	2.1	0.1	1.3	1.8	1.1	1.2
1 Year - Missoula	0.1	0.1	0.1	0.1	1.1	1.4	0.6	1.5	0.1	1.4	1.7	1.3	1.0
1 Year - San Dimas	0.1	0.1	0.1	0.1	0.9	1.4	0.7	1.6	0.1	1.6	1.7	1.1	1.1

Notes:

1	Uniform corrosion rates (expressed in mils-per-year) were determined by 90-day weight loss tests. Values shown are the average of all replicates.
2	Results up to 0.1 mils-per-year are recorded as 0.1 mils-per-year.
3	Meets the intergranular corrosion requirements for aluminum.
4	Meets the intergranular corrosion requirements for magnesium.

Uniform Corrosion [1]

Pyrocap B-136

Temperature: °F	2024-T3 Aluminum Total 70	2024-T3 Aluminum Total 120	2024-T3 Aluminum Partial 70	2024-T3 Aluminum Partial 120	4130 Steel Total 70	4130 Steel Total 120	4130 Steel Partial 70	4130 Steel Partial 120	Yellow Brass Partial 120	Az31B Magnesium Total 70	Az31B Magnesium Total 120	Az31B Magnesium Partial 70	Az31B Magnesium Partial 120
	mils-per-year												
Concentrate													
Fresh	0.1	0.1	0.1	0.1	0.8	0.4	0.3	1.6	0.2	7.1	9.7	4.8	19
1.0-Percent Solution[3]													
Fresh	0.1	0.3	0.1	0.1	0.5	1.9	0.7	2.7	0.1	3.0	1.8	1.6	1.6
1 Year - Missoula	0.1	0.1	0.1	0.1	0.5	1.8	0.5	2.7	0.1	N/A	N/A	N/A	N/A
1 Year - San Dimas	0.1	0.2	0.1	0.2	0.5	1.9	0.5	2.3	0.1	N/A	N/A	N/A	N/A
0.1-Percent Solution[3]													
Fresh	0.1	0.1	0.1	0.1	0.6	1.3	0.6	1.9	0.1	1.4	1.0	1.1	1.0
1 Year - Missoula	0.1	0.1	0.1	0.1	0.5	2.1	0.5	2.7	0.1	N/A	N/A	N/A	N/A
1 Year - San Dimas	0.1	0.1	0.1	0.1	0.9	1.8	0.9	1.7	0.1	N/A	N/A	N/A	N/A

Notes:

1	Uniform corrosion rates (expressed in mils-per-year) were determined by 90-day weight loss tests. Values shown are the average of all replicates.
2	Results up to 0.1 mils-per-year are recorded as 0.1 mils-per-year.
3	Meets the intergranular corrosion requirements for aluminum.

Uniform Corrosion [1]

Phos-Chek WD 881-C

Temperature: °F	2024-T3 Aluminum				4130 Steel				Yellow Brass	Az31B Magnesium			
	Total		Partial		Total		Partial		Partial	Total		Partial	
	70	120	70	120	70	120	70	120	120	70	120	70	120
	mils-per-year												
Concentrate													
Fresh	0.2	0.8	0.2	0.9	1.7	2.1	1.7	4.7	0.7	1.3	0.9	1.0	0.9
1.0-Percent Solution[3, 4]													
Fresh	0.1	0.1	0.1	0.1	1.1	2.1	1.1	2.5	0.1	1.9	3.3	1.6	1.6
1 Year - Missoula	0.1	0.1	0.1	0.1	1.2	1.6	1.0	2.0	0.1	1.5	2.9	1.6	1.7
1 Year - San Dimas	0.2	0.1	0.1	0.1	1.2	1.9	1.0	2.1	0.1	2.2	2.8	1.3	2.1
0.1-Percent Solution[3, 4]													
Fresh	0.1	.01	0.1	0.1	1.6	2.1	1.6	2.7	0.1	1.7	2.0	1.3	1.4
1 Year - Missoula	0.2	0.1	0.1	0.1	1.4	2.3	1.0	1.9	0.1	2.8	2.6	1.9	1.4
1 Year - San Dimas	0.1	0.1	0.1	0.1	1.5	1.8	1.0	2.1	0.1	2.2	2.1	1.6	1.5

Notes:

1	Uniform corrosion rates (expressed in mils-per-year) were determined by 90-day weight loss tests. Values shown are the average of all replicates.
2	Results up to 0.1 mils-per-year are recorded as 0.1 mils-per-year.
3	Meets the intergranular corrosion requirements for aluminum.
4	Meets the intergranular corrosion requirements for magnesium.

Uniform Corrosion [1]

National Foam KnockDown

Temperature: °F	2024-T3 Aluminum				4130 Steel				Yellow Brass	Az31B Magnesium			
	Total		Partial		Total		Partial		Partial	Total		Partial	
	70	120	70	120	70	120	70	120	120	70	120	70	120
	mils-per-year												
Concentrate													
Fresh	0.6	0.6	0.3	0.4	0.4	0.2	0.8	1.1	0.1	9.0	11.1	4.7	5.7
1.0-Percent Solution[3]													
Fresh	0.1	0.1	0.1	0.1	0.6	1.4	1.8	2.9	0.1	1.0	1.8	0.9	1.2
1 Year - Missoula	0.1	0.1	0.1	0.1	0.9	1.9	1.0	2.7	0.1	1.2	1.5	1.1	1.1
1 Year - San Dimas	0.1	0.1	0.1	0.1	0.6	2.1	0.7	2.9	0.1	1.5	1.8	1.5	1.2
0.1-Percent Solution[3]													
Fresh	0.1	0.1	0.1	0.1	0.6	1.9	0.8	2.0	0.1	1.3	0.9	0.8	0.6
1 Year - Missoula	0.1	0.1	0.1	0.1	1.0	2.0	0.9	2.2	0.1	1.3	1.5	1.0	1.0
1 Year - San Dimas	0.1	0.1	0.1	0.1	0.8	1.9	0.8	2.4	0.1	1.3	0.9	1.2	0.7

Notes:

1	Uniform corrosion rates (expressed in mils-per-year) were determined by 90-day weight loss tests. Values shown are the average of all replicates.
2	Results up to 0.1 mils-per-year are recorded as 0.1 mils-per-year.
3	Meets the intergranular corrosion requirements for aluminum.

Uniform Corrosion [1]

FlameOut

Temperature: °F	2024-T3 Aluminum				4130 Steel				Yellow Brass	Az31B Magnesium			
	Total		Partial		Total		Partial		Partial	Total		Partial	
	70	120	70	120	70	120	70	120	120	70	120	70	120
	mils-per-year												
Concentrate													
Fresh	0.7	1.4	0.7	0.7	0.8	2.5	1.5	4.0	0.8	3.6	4.2	2.8	2.6
1.0-Percent Solution													
Fresh	0.1	0.3	0.2	0.1	0.4	1.7	1.1	1.4	0.1	0.3	1.5	1.5	1.1
1 Year - Missoula	0.4	0.3	0.3	0.1	1.0	1.3	0.8	1.4	0.1	N/A	N/A	N/A	N/A
1 Year - San Dimas	0.6	0.3	0.3	0.1	0.6	1.4	0.8	1.5	0.1	N/A	N/A	N/A	N/A
0.1-Percent Solution													
Fresh	0.5	0.6	0.5	0.3	1.1	1.8	1.1	1.6	0.1	1.6	0.9	1.1	0.7
1 Year - Missoula	0.6	0.8	0.6	0.4	1.0	1.6	0.9	1.5	0.1	N/A	N/A	N/A	N/A
1 Year - San Dimas	0.5	0.6	0.6	0.3	0.9	2.0	0.8	1.5	0.1	N/A	N/A	N/A	N/A

Notes:

1	Uniform corrosion rates (expressed in mils-per-year) were determined by 90-day weight loss tests. Values shown are the average of all replicates.
2	Results up to 0.1 mils-per-year are recorded as 0.1 mils-per-year.

Uniform Corrosion [1]

Angus Hi-Combat A

Temperature: °F	2024-T3 Aluminum				4130 Steel				Yellow Brass	Az31B Magnesium			
	Total		Partial		Total		Partial		Partial	Total		Partial	
	70	120	70	120	70	120	70	120	120	70	120	70	120
	mils-per-year												
Concentrate													
Fresh	0.8	2.4	0.2	1.3	0.6	0.5	1.0	2.0	0.1	6.4	5.6	3.8	3.5
1.0-Percent Solution[3]													
Fresh	0.1	0.1	0.1	0.1	0.6	1.6	0.8	3.3	0.1	1.5	1.5	1.7	1.1
1 Year - Missoula	0.1	0.1	0.1	0.1	0.7	1.6	0.7	3.4	0.1	N/A	N/A	N/A	N/A
1 Year - San Dimas	0.1	0.1	0.1	0.1	0.4	1.9	0.7	3.0	0.1	N/A	N/A	N/A	N/A
0.1-Percent Solution[3]													
Fresh	0.1	0.2	0.1	0.1	0.4	1.7	0.8	2.3	0.1	1.8	2.0	1.0	1.3
1 Year - Missoula	0.1	0.2	0.1	0.1	1.1	1.6	0.8	1.9	0.1	N/A	N/A	N/A	N/A
1 Year - San Dimas	0.1	0.1	0.1	0.1	1.0	1.5	0.6	1.6	0.1	N/A	N/A	N/A	N/A

Notes:

1	Uniform corrosion rates (expressed in mils-per-year) were determined by 90-day weight loss tests. Values shown are the average of all replicates.
2	Results up to 0.1 mils-per-year are recorded as 0.1 mils-per-year.
3	Meets the intergranular corrosion requirements for aluminum.

Uniform Corrosion [1]

Buckeye Platinum Class A

Temperature: °F	2024-T3 Aluminum Total 70	2024-T3 Aluminum Total 120	2024-T3 Aluminum Partial 70	2024-T3 Aluminum Partial 120	4130 Steel Total 70	4130 Steel Total 120	4130 Steel Partial 70	4130 Steel Partial 120	Yellow Brass Partial 120	Az31B Magnesium Total 70	Az31B Magnesium Total 120	Az31B Magnesium Partial 70	Az31B Magnesium Partial 120
	mils-per-year												
Concentrate													
Fresh	0.6	4.0	0.4	2.5	1.7	2.6	1.3	4.1	0.1	29.5	41.2	18.2	20.3
1.0-Percent Solution[3]													
Fresh	0.1	0.1	0.1	0.1	0.5	1.6	0.8	2.2	0.1	1.8	2.2	1.6	1.4
1 Year – Missoula	0.1	0.1	0.1	0.1	0.6	1.5	0.6	2.0	0.1	N/A	N/A	N/A	N/A
1 Year - San Dimas	0.1	0.1	0.1	0.1	0.6	1.2	0.6	2.2	0.1	N/A	N/A	N/A	N/A
0.1-Percent Solution[3]													
Fresh	0.1	0.1	0.1	0.1	1.4	2.3	1.2	1.9	0.1	1.1	1.9	0.9	0.9
1 Year – Missoula	0.1	0.1	0.1	0.1	0.6	1.5	0.6	1.5	0.1	N/A	N/A	N/A	N/A
1 Year - San Dimas	0.1	0.1	0.1	0.1	0.5	1.7	0.7	1.6	0.1	N/A	N/A	N/A	N/A

Notes:

1	Uniform corrosion rates (expressed in mils-per-year) were determined by 90-day weight loss tests. Values shown are the average of all replicates.
2	Results up to 0.1 mils-per-year are recorded as 0.1 mils-per-year.
3	Meets the intergranular corrosion requirements for aluminum.

Uniform Corrosion [1]

Solberg Fire-Brake 3150A

Temperature: °F	2024-T3 Aluminum				4130 Steel				Yellow Brass	Az31B Magnesium			
	Total		Partial		Total		Partial		Partial	Total		Partial	
	70	120	70	120	70	120	70	120	120	70	120	70	120
	mils-per-year												
Concentrate													
Fresh	1.8	1.6	1.0	1.1	0.7	1.3	1.0	2.8	0.2	38.4	31.3	22.5	13.8
1.0-Percent Solution[3]													
Fresh	0.1	0.1	0.1	0.1	0.3	1.6	0.5	2.4	0.1	3.2	2.5	2.4	1.7
1 Year - Missoula	0.1	0.1	0.1	0.1	0.7	1.3	0.7	1.1	0.1	N/A	N/A	N/A	N/A
1 Year - San Dimas	0.1	0.1	0.1	0.1	0.6	1.1	0.6	1.1	0.1	N/A	N/A	N/A	N/A
0.1-Percent Solution[3]													
Fresh	0.1	0.4	0.1	0.2	0.6	1.8	0.7	2.1	0.1	2.6	1.7	1.8	1.3
1 Year - Missoula	0.1	0.1	0.1	0.1	1.2	1.3	0.9	1.5	0.1	N/A	N/A	N/A	N/A
1 Year - San Dimas	0.1	0.2	0.1	0.1	1.2	1.7	0.9	1.4	0.1	N/A	N/A	N/A	N/A

Notes:

1	Uniform corrosion rates (expressed in mils-per-year) were determined by 90-day weight loss tests. Values shown are the average of all replicates.
2	Results up to 0.1 mils-per-year are recorded as 0.1 mils-per-year.
3	Meets the intergranular corrosion requirements for aluminum.

Uniform Corrosion [1]

Phos-Chek First Response

Temperature: °F	2024-T3 Aluminum				4130 Steel				Yellow Brass	Az31B Magnesium			
	Total		Partial		Total		Partial		Partial	Total		Partial	
	70	120	70	120	70	120	70	120	120	70	120	70	120
	mils-per-year												
Concentrate													
Fresh	0.1	0.2	0.1	0.1	0.6	1.1	0.8	3.5	0.2	0.4	0.6	0.7	0.6
1.0-Percent Solution[3, 4]													
Fresh	0.1	0.1	0.1	0.1	1.0	1.4	0.7	2.5	0.1	1.4	2.6	1.1	1.6
1 Year - Missoula	0.2	0.2	0.1	0.1	0.8	1.5	0.7	2.4	0.2	1.2	2.5	1.2	1.6
1 Year - San Dimas	0.1	0.2	0.1	0.1	1.0	1.5	0.7	2.4	0.1	1.1	2.4	1.1	1.5
0.1-Percent Solution[3, 4]													
Fresh	0.1	0.1	0.1	0.1	1.1	1.9	0.8	1.6	0.1	1.4	2.1	1.2	1.4
1 Year - Missoula	0.1	0.2	0.1	0.1	1.3	2.0	0.8	1.6	0.1	1.7	1.7	1.3	1.1
1 Year - San Dimas	0.1	0.2	0.1	0.1	1.2	1.8	0.8	1.7	0.1	1.5	2.1	1.3	1.1

Notes:

1	Uniform corrosion rates (expressed in mils-per-year) were determined by 90-day weight loss tests. Values shown are the average of all replicates.
2	Results up to 0.1 mils-per-year are recorded as 0.1 mils-per-year.
3	Meets the intergranular corrosion requirements for aluminum.
4	Meets the intergranular corrosion requirements for magnesium.

Uniform Corrosion [1]

Silv-Ex Plus

Temperature: °F	2024-T3 Aluminum				4130 Steel				Yellow Brass	Az31B Magnesium			
	Total		Partial		Total		Partial		Partial	Total		Partial	
	70	120	70	120	70	120	70	120	120	70	120	70	120
	mils-per-year												
Concentrate													
Fresh	0.1	0.1	0.1	0.1	0.5	0.5	1.0	2.2	0.1	4.7	4.6	2.5	3.2
1.0-Percent Solution[3, 4]													
Fresh	0.1	0.1	0.1	0.1	0.7	0.9	0.5	2.3	0.1	0.9	2.4	1.0	1.7
1 Year - Missoula	0.1	0.1	0.1	0.1	1.0	1.0	0.6	2.1	0.1	1.0	2.5	0.9	1.7
1 Year - San Dimas	0.1	0.1	0.1	0.1	0.7	0.9	0.5	2.2	0.1	1.1	2.2	1.0	1.6
0.1-Percent Solution[3, 4]													
Fresh	0.1	0.1	0.1	0.1	1.1	1.6	1.0	1.6	0.1	1.1	1.5	1.0	0.7
1 Year - Missoula	0.1	0.1	0.1	0.1	1.2	1.5	1.0	1.5	0.1	1.4	1.5	1.1	0.9
1 Year - San Dimas	0.1	0.1	0.1	0.1	1.1	1.5	0.8	1.5	0.1	1.0	1.6	1.0	1.0

Notes:

1	Uniform corrosion rates (expressed in mils-per-year) were determined by 90-day weight loss tests. Values shown are the average of all replicates.
2	Results up to 0.1 mils-per-year are recorded as 0.1 mils-per-year.
3	Meets the intergranular corrosion requirements for aluminum.
4	Meets the intergranular corrosion requirements for magnesium.

Uniform Corrosion [1]

1% Bushmaster

Temperature: °F	2024-T3 Aluminum				4130 Steel				Yellow Brass	Az31B Magnesium			
	Total		Partial		Total		Partial		Partial	Total		Partial	
	70	120	70	120	70	120	70	120	120	70	120	70	120
	mils-per-year												
Concentrate													
Fresh	0.3	1.6	0.2	0.8	1.8	3.1	1.3	2.4	0.1	14.2	20.0	8.6	10.0
1.0-Percent Solution[3]													
Fresh	0.1	0.1	0.1	0.1	0.1	0.9	0.5	0.7	0.1	1.6	2.1	1.0	1.2
1 Year - Missoula	0.1	0.1	0.1	0.1	0.7	1.3	0.4	1.3	0.1	2.2	2.2	1.5	1.4
1 Year - San Dimas	0.1	0.1	0.1	0.1	0.4	0.9	0.3	1.0	0.1	1.8	2.2	1.3	1.2
0.1-Percent Solution[3]													
Fresh	0.1	0.1	0.1	0.1	0.4	1.0	0.4	1.0	0.1	1.7	2.1	0.9	1.3
1 Year - Missoula	0.1	0.1	0.1	0.1	0.7	1.3	0.7	1.2	0.1	1.2	0.8	0.9	0.6
1 Year - San Dimas	0.1	0.1	0.1	0.1	0.7	1.4	0.7	1.4	0.1	1.3	1.3	1.0	0.8

Notes:

1	Uniform corrosion rates (expressed in mils-per-year) were determined by 90-day weight loss tests. Values shown are the average of all replicates.
2	Results up to 0.1 mils-per-year are recorded as 0.1 mils-per-year.
3	Meets the intergranular corrosion requirements for aluminum.

Uniform Corrosion [1]

Phos-Chek WD881A

Temperature: °F	2024-T3 Aluminum				4130 Steel				Yellow Brass	Az31B Magnesium			
	Total		Partial		Total		Partial		Partial	Total		Partial	
	70	120	70	120	70	120	70	120	120	70	120	70	120
	mils-per-year												
Concentrate													
Fresh	0.1	0.2	0.1	0.3	0.4	1.1	1.1	2.8	0.8	0.6	0.5	0.4	0.6
1.0-Percent Solution[3, 4]													
Fresh	0.1	0.1	0.1	0.1	1.0	1.4	0.8	2.5	0.1	1.1	2.6	0.7	1.8
1 Year - Missoula	0.1	0.1	0.1	0.1	0.8	1.5	0.6	3.1	0.1	0.7	2.8	0.8	1.8
1 Year - San Dimas	0.1	0.1	0.1	0.1	0.8	1.5	0.6	2.5	0.1	0.8	2.5	0.5	1.4
0.1-Percent Solution[3, 4]													
Fresh	0.1	0.1	0.1	0.1	0.9	1.6	0.6	2.2	0.1	1.3	2.3	0.9	1.2
1 Year - Missoula	0.1	0.1	0.1	0.1	1.1	1.5	0.7	1.9	0.1	1.1	2.3	0.9	1.3
1 Year - San Dimas	0.2	0.1	0.1	0.1	1.0	1.6	0.7	2.0	0.1	1.1	2.9	0.9	1.3

Notes:

1	Uniform corrosion rates (expressed in mils-per-year) were determined by 90-day weight loss tests. Values shown are the average of all replicates.
2	Results up to 0.1 mils-per-year are recorded as 0.1 mils-per-year.
3	Meets the intergranular corrosion requirements for aluminum.
4	Meets the intergranular corrosion requirements for magnesium.

Uniform Corrosion [1]

Fomtec Enviro Class A

Temperature: °F	2024-T3 Aluminum				4130 Steel				Yellow Brass	Az31B Magnesium			
	Total		Partial		Total		Partial		Partial	Total		Partial	
	70	120	70	120	70	120	70	120	120	70	120	70	120
	mils-per-year												
Concentrate													
Fresh	1.4	2.6	0.8	2.8	1.2	4.0	2.0	3.7	0.8	4.4	5.5	2.8	3.5
1.0-Percent Solution[3]													
Fresh	0.1	0.2	0.1	0.1	1.2	1.6	0.8	3.1	0.1	1.5	1.5	1.3	1.2
1 Year - Missoula	0.1	0.1	0.1	0.1	0.8	1.7	0.5	2.4	0.1	0.7	1.6	1.0	1.0
1 Year - San Dimas	0.1	0.4	0.1	0.1	1.3	1.7	0.6	2.2	0.1	1.0	1.4	1.2	1.1
0.1-Percent Solution[3]													
Fresh	0.1	0.6	0.1	1.3	0.2	0.8	0.3	0.6	1.1	0.6	2.1	0.4	1.1
1 Year - Missoula	0.2	0.3	0.1	0.1	1.2	2.0	1.0	1.8	0.1	1.5	1.5	0.9	0.8
1 Year - San Dimas	0.3	0.5	0.4	0.2	1.2	1.9	1.0	1.8	0.1	1.2	1.6	0.9	0.9

Notes:

1	Uniform corrosion rates (expressed in mils-per-year) were determined by 90-day weight loss tests. Values shown are the average of all replicates.
2	Results up to 0.1 mils-per-year are recorded as 0.1 mils-per-year.
3	Meets the intergranular corrosion requirements for aluminum.

Uniform Corrosion [1]

Bio-Ex Ecopol-F

Temperature: °F	2024-T3 Aluminum				4130 Steel				Yellow Brass	Az31B Magnesium			
	Total		Partial		Total		Partial		Partial	Total		Partial	
	70	120	70	120	70	120	70	120	120	70	120	70	120
	mils-per-year												
Concentrate													
Fresh	0.1	0.3	0.1	0.5	0.3	1.0	1.8	3.3	0.1	3.8	4.5	2.5	3.2
1.0-Percent Solution[3,4]													
Fresh	0.1	0.4	0.1	0.1	1.0	1.8	1.0	2.5	0.1	0.9	1.8	1.1	1.4
1 Year - Missoula	0.1	0.3	0.1	0.1	0.8	1.8	0.8	2.6	0.1	1.0	3.0	1.4	1.6
1 Year - San Dimas	0.1	0.3	0.1	0.1	0.7	1.9	1.0	2.5	0.1	1.0	2.3	1.3	1.5
0.1-Percent Solution[3,4]													
Fresh	0.1	0.6	0.1	0.1	1.4	2.0	1.0	1.7	0.1	0.7	1.4	1.1	0.9
1 Year - Missoula	0.1	0.6	0.1	0.1	1.4	2.2	0.9	1.8	0.1	1.0	1.2	1.0	0.9
1 Year - San Dimas	0.1	0.6	0.1	0.2	1.5	2.1	1.1	1.8	0.1	1.2	1.3	1.2	0.9

Notes:

1	Uniform corrosion rates (expressed in mils-per-year) were determined by 90-day weight loss tests. Values shown are the average of all replicates.
2	Results up to 0.1 mils-per-year are recorded as 0.1 mils-per-year.
3	Meets the intergranular corrosion requirements for aluminum.
4	Meets the intergranular corrosion requirements for magnesium.

Uniform Corrosion [1]

SparkBarrier

Temperature: °F	2024-T3 Aluminum				4130 Steel				Yellow Brass	Az31B Magnesium			
	Total		Partial		Total		Partial		Partial	Total		Partial	
	70	120	70	120	70	120	70	120	120	70	120	70	120
	mils-per-year												
Concentrate													
Fresh	0.2	0.5	0.3	1.9	0.2	0.4	1.1	3.1	0.3	3.3	1.8	2.6	3.0
1.0-Percent Solution[3]													
Fresh	0.6	0.5	<0.1	0.2	0.7	1.5	0.6	2.6	0.1	1.0	2.7	0.7	2.5
1 Year - Missoula	0.1	0.1	0.1	<0.1	0.7	1.6	0.7	1.6	0.1	-	-	-	-
1 Year - San Dimas	<0.1	<0.1	0.2	<0.1	0.4	1.2	0.8	1.9	0.1	-	-	-	-
0.1-Percent Solution[3]													
Fresh	0.2	0.2	0.2	<0.1	0.8	1.6	0.6	1.9	0.1	1.1	5.1	1.2	3.2
1 Year - Missoula	0.1	0.1	0.1	<0.1	1.4	2.2	0.9	1.8	<0.1	-	-	-	-
1 Year - San Dimas	0.2	0.2	<0.1	<0.1	0.9	1.5	0.6	1.6	<0.1	-	-	-	-

Notes:

1	Uniform corrosion rates (expressed in mils-per-year) were determined by 90-day weight loss tests. Values shown are the average of all replicates.
2	Results up to 0.1 mils-per-year are recorded as 0.1 mils-per-year.
3	Meets the intergranular corrosion requirements for aluminum.
4	Meets the intergranular corrosion requirements for magnesium.