

Performance Data: ECOPLATE 5030

SCOPE

The following Performance Data was gathered on a variety of plastic and metal substrates coated with the ECOPLATE Metallic Conformal Coating Process utilizing the tin/zinc alloy, ECOPLATE 5030.

The primary coating properties of interest were the electrical stability and adhesion after environmental conditioning and resistance to mechanical abrasion.

Generic grades of engineering thermo-plastics were chosen to simulate application conditions with a variety of widely used substrate materials.

TEST METHODS AND EQUIPMENT

The ECOPLATE 5030 material was applied to all substrates at a nominal thickness of 25 µm (0.001 inch) using standard process parameters.

Testing was performed in accordance with the following methods:

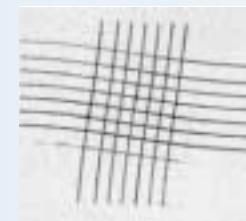
TEST	METHOD
Heat Aging, 85°C	Internal
Heat Aging, 125°C	Internal
Temperature Humidity, 85°C/85%RH	Internal
Salt Fog	ASTM B 117
Tabor Abrasion	ASTM F 1978
Crosshatch Adhesion	ASTM D 3359
Surface Resistivity	Chomerics 95-40-5104*

*Contact Chomerics' Applications Engineering Department for copies of this test method

RESULTS

Heat Aging Study, 85°C

Description	ECOPLATE Alloy	Time 0	4000 hours	4000 hours
		(m-Ω/sq)	(m-Ω/sq)	Crosshatch
PAA (Polyarylamide) - IXEF	5030	8	8	5B
LCP (Polyester - Liquid Crystal Polymer) - Vectra	5030	7	8	5B
PA (Polyamide) - Nylon	5030	10	7	5B
PC/ABS (Polycarbonate/Acrylonitrile-butadiene-styrene blend) - Cycloy	5030	14	13	5B
PET Polyester - (Polybutylene-terephthalate) - Valox	5030	6	7	5B
PC (Polycarbonate) - Lexan	5030	6	8	5B
PC (Polycarbonate) - Lexan	5030	10	7	5B
ABS (Acrylonitrile-butadiene-styrene) - Cycolac	5030	4	5	5B
PET Polyester - (Polyethylene-terephthalate)	5030	6	10	5B
PPO (Polyphenylene Oxide) - Noryl	5030	8	7	5B
PEI (Polyetherimide) - Ultem	5030	18	13	5B
Polysulphone	5030	12	11	5B
Aluminum Castings	5030	1	5	5B
Zinc Die Castings	5030	1	2	5B



Typical crosshatch 5B results for ECOPLATE 5030 film after environmental conditioning.

Heat Aging Study, 125°C

Description	ECOPLATE Alloy	Time 0	4000 hours	4000 hours
		(m-Ω/sq)	(m-Ω/sq)	Crosshatch
PPO (Polyphenylene Oxide) - Noryl	5030	5	4	5B
PC/ABS (Polycarbonate/Acrylonitrile-butadiene-styrene blend) - Cycloy	5030	9	8	5B

continued

ECOPLATE™ Performance Data

Temperature-Humidity Study, 85°C and 85% RH

Description	ECOPLATE Alloy	Time 0	1000 hours	1000 hours
		(m-Ω/sq)	(m-Ω/sq)	Crosshatch
PAA (Polyarylamide) - IXEF	5030	10	29	5B
LCP (Polyester - Liquid Crystal Polymer) - Vectra	5030	5	21	5B
PA (Polyamide) - Nylon	5030	7	33	5B
PET Polyester - (Polybutylene-terephthalate) - Valox	5030	5	16	5B
PET Polyester - (Polybutylene-terephthalate)	5030	16	45	5B
PPO (Polyphenylene Oxide) - Noryl	5030	10	14	5B
PEI (Polyetherimide) - Ultem	5030	7	14	5B
Polysulphone	5030	11	24	5B
PC (Polycarbonate) - Makrolon	5030	9	5	5B
ABS (Acrylonitrile-butadiene-styrene) - Cycolac	5030	8	3	5B
PC/ABS (Polycarbonate/Acrylonitrile-butadiene-styrene blend) - Cycology	5030	9	19	5B
Aluminum Castings	5030	6	19	5B
Zinc Die Castings	5030	2	12	5B



ECOPLATE 5030 film after 1000 hours, 85°C/ 85% RH exposure.

Salt Fog Study, 96 hours, 95°F, 95% RH, 5% NaCl

Description	ECOPLATE Alloy	Time 0	96 hours	96 hours
		(m-Ω/sq)	(m-Ω/sq)	Crosshatch
PAA (Polyarylamide) - IXEF	5030	6	190	5B
LCP (Polyester - Liquid Crystal Polymer) - Vectra	5030	4	39	5B
PA (Polyamide) - Nylon	5030	12	20	5B
PC/ABS (Polycarbonate/Acrylonitrile-butadiene-styrene blend) - Cycology	5030	7	72	5B
PET Polyester - (Polybutylene-terephthalate) - Valox	5030	7	55	5B
PC (Polycarbonate) - Lexan	5030	8	37	5B
ABS (Acrylonitrile-butadiene-styrene) - Cycolac	5030	4	22	5B
PET Polyester - (Polyethylene-terephthalate)	5030	6	21	5B
PPO (Polyphenylene Oxide) - Noryl	5030	11	36	5B
PEI (Polyetherimide) - Ultem	5030	6	43	5B
Polysulphone	5030	17	72	5B
Aluminum Castings	5030	1	21	5B
Zinc Die Castings	5030	1	9	5B

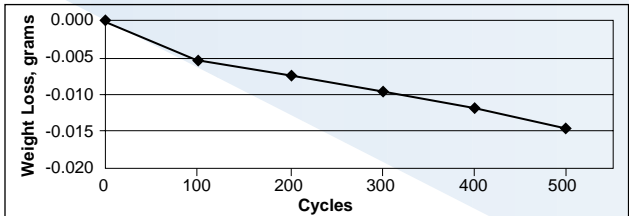


ECOPLATE 5030 film after 96 hours of salt fog exposure.

Tabor Abrasion

Samples	ECOPLATE Alloy	Cycles					
		0	100	200	300	400	500
1	5030	26.9893	26.9831	26.9818	26.9788	26.9762	26.9745
2	5030	26.9888	26.9832	26.9808	26.9795	26.9771	26.9742
3	5030	26.9884	26.9836	26.9813	26.9795	26.9764	26.974
Average		26.9888	26.9833	26.9813	26.9795	26.9769	26.9742
Weight Loss from Initial		0	-0.0055	-0.0075	-0.0096	-0.0119	-0.0146

Tabor Abrasion Test



www.chomerics.com

North America • 77 Dragon Court, Woburn, MA 01888-4014 TEL +(1) 781-935-4850 FAX +(1) 781-933-4318
 Europe • Marlow, Bucks, UK TEL +(44) 1628 404000 FAX +(44) 1628 404090
 Asia Pacific • Hong Kong TEL +(852) 2 428 8008 FAX +(852) 2 423 8253
 South America • São Paulo, Brazil TEL +(55) 11 3917 1099 FAX +(55) 11 3917 0817

CHOMERICS

Parker Seals

NOTICE: The information contained herein is to the best of our knowledge true and accurate. However, since the varied conditions of potential use are beyond our control, all recommendations or suggestions are presented without guarantee or responsibility on our part and users should make their own tests to determine the suitability of our products in any specific situation. This product is sold without warranty either expressed or implied, of fitness for a particular purpose or otherwise, except that this product shall be of standard quality, and except to the extent otherwise stated on Chomerics' invoice, quotation, or order acknowledgement. We disclaim any and all liability incurred in connection with the use of information contained herein, or otherwise. All risks of such are assumed by the user. Furthermore, nothing contained herein shall be construed as a recommendation to use any process or to manufacture or to use any product in conflict with existing or future patents covering any product or material or its use.

