



Conductive Coating Comparison Chart

	Acrylic				Epoxy		Water Based		
Uncured Working Properties	838AR	841AR	843AR	842AR	841ER	843ER	841WB	843WB	842WB
Conductive Filler	C	Ni	Ag/Cu	Ag	Ni	Ag/Cu	Ni	Ag/Cu	Ag
Format	Liquid	Liquid	Liquid	Liquid	Liquid	Liquid	Liquid	Liquid	Liquid
Color	Black	Dark grey	Metallic brown	Metallic silver	Grey	Metallic brown	Grey	Metallic Brown	Silver
Number of Components	1	1	1	1	2	2	1	1	1
Solids Percentage	15%	57%	31%	61%	32%	30%	54%	42%	60%
Density @25 °C	0.85 g/mL	1.7 g/mL	1.1 g/mL	1.7 g/mL	1.64 g/mL	1.0 g/mL	1.8 g/mL	1.3 g/mL	1.5 g/mL
Viscosity @25 °C	154 cP	1 460 cP	<30 cP	873 cP	200 cP (A), 18 cP (B)	35 cP (A), 9 cP (B)	143 cP	234 cP	195 cP
VOC Content	47%	14%	17%	12%	49%	76%	145 g/L ^{d)}	51 g/L ^{d)}	53 g/L ^{d)}
Shelf Life	2 y	2 y	2 y	2 y	1 y	1 y	1 y	1 y	1 y
Coverage/Application Properties									
Ready to Spray	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Theoretical HVLP Spray Coverage	≤25 300 cm ² /L	≤29 600 cm ² /L	≤15 000 cm ² /L	≤59 600 cm ² /L	≤40 900 cm ² /L	≤31 100 cm ² /L	≤15 200 cm ² /L	≤42 200 cm ² /L	≤69 000 cm ² /L
Recoat Time	3 min	3 min	3 min	3 min	5 min	3 min	30 min ^{c)}	20 min ^{c)}	20 min ^{c)}
Cure/Drying Time @25 °C	24 h	24 h	24 h	24 h	—	24 h	24 h	24 h	24 h
Cured Properties									
Electrical Properties									
Volume Resistivity	0.33 Ω·cm	0.0040 Ω·cm	0.00030 Ω·cm	0.0001 Ω·cm	0.1 Ω·cm	0.0018 Ω·cm	0.027 Ω·cm	0.00068 Ω·cm	0.000075 Ω·cm
Volume Conductivity	3.1 S/cm	250 S/cm	3 300 S/cm	9 337 S/cm	11 S/cm	556 S/cm	37 S/cm	1 470 S/cm	13 300 S/cm
Surface Resistance @1 coat	170 Ω/sq	0.52 Ω/sq	0.071 Ω/sq	<0.01 Ω/sq ^{a)}	72 Ω/sq	0.3 Ω/sq	1.4 Ω/sq	0.21 Ω/sq	0.04 Ω/sq
@2 coats	60 Ω/sq	0.38 Ω/sq	0.018 Ω/sq	<0.01 Ω/sq ^{a)}	21 Ω/sq	0.2 Ω/sq	0.68 Ω/sq	0.11 Ω/sq	0.02 Ω/sq
Attenuation (0.01 to 18 000 MHz)	23 dB ± 25 dB	59 dB ± 12 dB	65 dB ± 11 dB	73 dB ± 11 dB	TBD	60 dB ± 12 dB	46 dB ± 16 dB	61 ± 12 dB	65 ± 11 dB
Salt Fog Test @35 °C, 96 h ^{b)}	Before: 70 Ω/sq After: 70 Ω/sq	Before: 0.38 Ω/sq After: 0.51 Ω/sq	Before: 0.08 Ω/sq After: 3.3 Ω/sq	Before: <0.01 Ω/sq After: 0.05 Ω/sq	"	Before: 0.15 Ω/sq After: 0.73 Ω/sq	Before 0.4 Ω/sq After 3 Ω/sq	TBD	Before 0.012 Ω/sq After 0.081 Ω/sq
Thermal Properties									
Constant Service Temperature	-40 to 120 °C	-40 to 120 °C	-40 to 120 °C	-40 to 120 °C	-40 to 150 °C	-40 to 120 °C	-40 to 120 °C	-40 to 120 °C	-40 to 120 °C
Intermittent Temperature Limits	-50 to 125 °C	-50 to 125 °C	-50 to 125 °C	-50 to 125 °C	-50 to 165 °C	-60 to 130 °C	-50 to 125 °C	-50 to 125 °C	-50 to 125 °C
Mechanical Properties									
Adhesion ^{b)}	5B	5B	5B	5B	5B	5B	5B	5B	5B
Pencil Hardness ^{b)}	H, hard	3H, hard	F, medium	3H, hard	4H, hard	6H, hard	HB, hard	HB, hard	HB, hard
Magnetic Properties									
Magnetic Class	Diamagnetic	Ferromagnetic	Diamagnetic	Diamagnetic	Ferromagnetic	Diamagnetic	Ferromagnetic	Diamagnetic	Diamagnetic
Relative Permeability	<1.0	≥100	<1.0	<1.0	≥100	<1.0	≥100	<1.0	<1.0

TBD=To be determined. Values for conductive coatings in aerosol format will vary slightly. Please see product's TDS for exact values.

- a) Readings less than 0.01 Ω/sq are below the detection limit of the test apparatus.
- b) Tested on acrylonitrile butadiene styrene (ABS).
- c) Recoat time for plastic. Dry wall recoat times can be found on product's TDS.
- d) Values for regulated VOC.