



## Metalon® Conductive Inks for Printed Electronics

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### Metalon® JR-038

#### Carbon Ink – Aqueous dispersion for Aerosol Printing

**JR-038** is a resistive ink designed to be printed on a variety of porous and non-porous substrates including Novele™, polycarbonate, PET, polyimide, metals, and glass. The ink can be thermally cured or PulseForge® processed. JR-038 is formulated for printing with aerosol jet technology.

<b>Performance Properties</b>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #4F81BD; color: white;"> <th>Cure temperature (°C)</th> <th>Cure time (minutes)</th> <th>Volume Resistivity (Ω-cm)<sup>1</sup></th> <th>Substrate</th> </tr> </thead> <tbody> <tr><td>100</td><td>30</td><td>0.8</td><td>PET</td></tr> <tr><td>120</td><td>15</td><td>0.8</td><td>PET</td></tr> <tr><td>140</td><td>10</td><td>0.8</td><td>PET</td></tr> <tr><td>175</td><td>10</td><td>0.8</td><td>Polyimide</td></tr> <tr><td>200</td><td>5</td><td>0.8</td><td>Polyimide</td></tr> <tr><td>250</td><td>5</td><td>0.8</td><td>Polyimide</td></tr> </tbody> </table> <p>Excellent adhesion (crosshatch: 5B) and good water resistance after curing.</p> <p><sup>1</sup>Value calculated based on estimate of 25% porosity of cured print.</p>	Cure temperature (°C)	Cure time (minutes)	Volume Resistivity (Ω-cm) <sup>1</sup>	Substrate	100	30	0.8	PET	120	15	0.8	PET	140	10	0.8	PET	175	10	0.8	Polyimide	200	5	0.8	Polyimide	250	5	0.8	Polyimide
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<b>Physical Properties</b>	<p><b>General Description</b> ..... Water-based carbon ink  <b>Flash Point</b> ..... Non-flammable</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th></th> <th>Value<sup>2</sup></th> <th>Units</th> </tr> </thead> <tbody> <tr><td>Carbon black content</td><td>5</td><td>wt%</td></tr> <tr><td>Viscosity</td><td>4-7</td><td>cP</td></tr> <tr><td>Surface tension</td><td>25-30</td><td>dyne/cm</td></tr> <tr><td>z-avg particle size<sup>2</sup></td><td>120-150</td><td>nm</td></tr> <tr><td>Specific gravity</td><td>1.1</td><td>–</td></tr> </tbody> </table> <p><sup>2</sup> Typical values  <sup>3</sup> Malvern dynamic light scattering</p>		Value <sup>2</sup>	Units	Carbon black content	5	wt%	Viscosity	4-7	cP	Surface tension	25-30	dyne/cm	z-avg particle size <sup>2</sup>	120-150	nm	Specific gravity	1.1	–										
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<b>Shipping and Packaging</b>	Standard sample order is 50 mL or multiples of 50 mL.																												

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