MacDermid Alpha to Revolutionize mSAP with New HDI Compatible Low Etch Direct Metallization Processes: Blackhole LE and Eclipse LE

(Waterbury, CT USA) – September 25th, 2020 – MacDermid Alpha Electronics Solutions, a global leader in specialty materials for electronics, announces the release of Blackhole LE and Eclipse LE, significantly upgraded direct metallization technologies for use in the manufacture of high-density mobile PCBs.

With over 260 active lines globally, the printed circuit industry has trusted Blackhole and Eclipse carbon based direct metallization technology for decades to make through holes and micro vias conductive in multilayer and Any Layer HDI designs. With the recent adoption of modified Semi-Additive Processing (mSAP) to further increase circuit densities in the manufacture of flagship level mobile devices, the conservation of the thin copper layer utilized in the starting build-up material has challenged the traditional direct metallization process. This is due to the carbon removal etching step that enables the selective activation of the laminate material. The low etch technology included in the Blackhole LE and Eclipse LE processes represents a revolutionary upgrade to equipment and chemical capabilities, resulting in a primary metallization step that is even leaner on the copper etch budget than that of electroless copper processes. Blackhole LE and Eclipse LE enable direct copper electroplating to the laminate walls and copper target pads of micro via structures without the need of intermediary copper layers from electroless or electrolytic flash plating. This highly reliable micro via structure can be used to create high circuit density with greater manufacturing quality and process yields than previously possible. Existing Blackhole or Eclipse lines can be upgraded to the LE variation with equipment modifications and chemical replacement.

Blackhole LE and Eclipse LE processes can be combined with the soon-to-be released, MacuSpec VF-TH 300 via filling technology, to create reliable mSAP layers that require a drastically shortened or no post bake while still being resistant to V-pitting defects that can occur during the layer final etch, reducing manufacturing time by hours.

For more information on Blackhole LE and Eclipse LE, please visit www.MicroviaReliability.com

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