

EMPSAND™ ELECTRONIC
MATERIAL and SERVICES ::

MATERIALS FOR 3D PRINTING, PCB FABRICATION
BULK MOULDED PRODUCTS AND MORE.

EMARENA®

HydrogenMiner@Yahoo.Com

MAXIMUM

Statement of the Problem and User Market:

With efforts designed to improve electronics performance, Emarena has entered into development of high performance materials for additive matrix formation. Such improved materials and inherent processes for guide both electrical and thermal conductivity. Market scope shows that Aerospace, Medical, Automotive and Marine industries have the most to gain from integration of large volumes of such materials. Such products include electrical frequency tuned elements, high power, high current conduit, disposable and recyclable electronics.

EMPSAND Application:

Empsand material may be integrated into electronics components by way of physical stencil, magnetic stencil or direct placement. Empsand has shown success in thermal transfer by way of RF inductive heating of tin and silver lamination.

Starting Material and Suggested Research Developments:

Products derived through Emarena's research initiative include copper clad steel granules as layered composite. Empsand variants may be homogenized and coated with tin and or silver coatings for use in bulk or selective joint fabrication, channel, wire, cable, trace formation in PCB joinery.

Magnetic Manipulation:

Empsand particulate can be manipulated below both the Neil and Curie points using magnetic impulse or field. By example an organized particle matrix was formed with no optically visible air gap or defect by way of magnetic compression. Cross section of the magnetically manipulated sections showed an organized particle matrix.

Zero Failure Solutions:

In general, electronics, inclusive of pick and place solutions have shown reduced shelf life from manufacture to assembly. This reduced shelf life compounds with reductions in size and increased oxidative exposure. Empsand is not exempt to oxidation where particulate can oxidize as found with getter materials. Reduction in failure may be treated in two ways; The first method is adherence to immediate use and zero shelf life warning. A second method is the use of Hydrogen torch such as Hydrogen Miner for assembly in open flame or reductive environments thereby reducing oxidized material content. Accordingly, Emarena is capable of manufacturing microparticulate for on site fabrication. Fabrication facilities or Hydrogen Miner Electrolysis machines may be upscaled for portable to improve capabilities.

Service Charge Disclaimer:

Material product lines have mandatory peripheral service charge to recapture research costs. Allied Products and Services include commodity assessment, material charge and finally service charges, in part.

Fee ::

500\$ per hour. Research and Development of Scientific methods for viewing, magnetic manipulating, joining and separating particles [handling].

500\$ per hour. Scientific Services.



Figure: EMPSAND™ pre etched container for starting material.