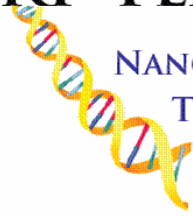


RP TEMPERING™ TECHNOLOGY NEWS



NANO-COMPOSITE
TECHNOLOGY

SOLID FREEFORM ADDITIVE TECHNOLOGY &
PATENTED ENGINEERING TECHNIQUE

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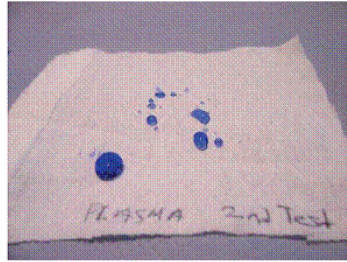
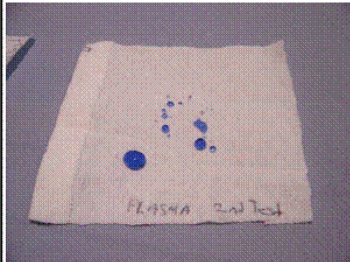
Proto-Plasma™ - Water Repellent Properties

Proto-Plasma™ has always been a popular product with many uses in a diverse array of applications. It is a versatile product offering excellent mechanical properties. It improves 3-4 point flexibility, torsional strength, impact strength and chemical resistance.

However, there is always more in Proto-Plasma™. Below are examples of cotton cloth samples treated with Proto-Plasma™. The photos show 4 hours after the blue died water

droplets are applied on the surface. As it can be clearly seen, the product repels water even on a porous surface like cotton.

The product also offers excellent grip properties as well, making it an excellent solution for recreational and extreme sports equipment products like tennis racquets, golf clubs, tennis shoes, surfboards, etc. Any tough environment where grip is the issue, Proto-Plasma™ is the solution. Article submitted by Baran Dag of Alphacam fdag@alphacam.de.



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New Application Videos Courtesy of Alphacam

Alphacam is pleased to announce new product application videos. The files are short, google quality videos, prepared to aid with the use of RP Tempering™ products. They show step by step instructions on how each application is done. Currently the videos are available for the living hinge, sealing, electrical insulating and RFI shielding.

Everyone is welcome to download the videos. Please contact



fdag@alphacam.de to receive the download link for the application videos.



Alphacam Temperman Expands Territory

With a recent agreement between Par3 Technology and alphacam/Temperman, new territory has been added to the existing ones. Effective immediately, alphacam/Temperman will assume all distributing activities in

Far Eastern and Asian markets in addition to Europe.

Alphacam/Temperman will be responsible of setting the distributor network and ensuring clear logistics and technical support for all parties. There is a substantial amount

of potential in the East markets for innovative products. This proved to be true for RP Tempering™ products as well. From the day of introduction, it has been accepted with great interest in high end 3D Printing and Rapid Prototyping projects.

Electronic Shielding Applications for RP and Non RP Applications

Electromagnetic waves generated by electronic devices can cause other devices to malfunction. Manufacturers of commercial electronic products generally contend with three types of EMI problems:

- Suppression of internally generated signals
- External ambient interference with equipment operation
- Internally generated emissions interfering with equipment operation

EMI from one circuit can interfere with the function of another within the same system or subsystem. Typically called cross-talk, this problem is the most common source of system susceptibility. Cross-talk frequently occurs in densely packaged mobile or portable equipment.

Other Industry Examples:

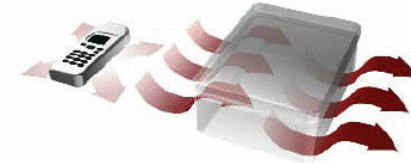
Medical Applications: Shielding medical equipment to meet FDA pre-market requirements and protect against cellular phones, hand-held transceivers, etc. Shielding electric wheelchairs, pace-makers, and anesthesia machines.

Aerospace Applications: Shielding the electronic flight control on aircrafts from radar beams and other electromagnetic fields. Shielding aircraft control systems located within the aircraft, sensitive navigation systems, radio emissions from another transmitter at approximately the same frequency as the emission of interest will impede the reception of the desired

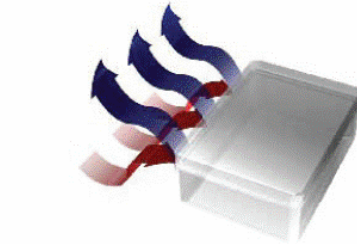
signal by the intended recipient.

Electronic devices give off EMI / RFI signals and/or light waves.

*Enclosure without shielding
Before Shielding Part Substrate*



*Enclosure with shielding
After Shielding Part Substrate*



Both RP Tempering™ EMI and RFI shielding products were used for this cell phone and base station pictured left:

The RF13 Absorb© product can be used in ESD sensitive applications for its conductive /static dissipative properties. Other particles can be added to our product to meet other applications. For example, adding tungsten to our base RP Tempering™ Formula can block radiation light waves at a high percentage with the proper fill ratio. Tungsten can take the place of lead applications and is environmentally cleaner.



Pictured above are two other RP Tempering™ EMI Shielding Digital Manufacturing Applications.

RP Tempering™ Technologies has products available, in stock, to meet your shielding needs, including: EMI Shielding, RFI Shielding, RF Shielding (microwave absorption), Shielding and/or blocking Radiation Light waves and electronic or static displacement applications. Par3 frequently is asked to change one of our base formulas to meet a special Digital Manufacturing Applications. Adding particles and/or other additives to our base formula to meet applications has proven to be fast and cost effective. If you have a special application please, do not hesitate to contact Par3 Technology, Inc. or one of our global distributors for a test sample.

Protective Packaging, Reusable Dunge, & Material Handling Trays

Simmons Medical used plastic trays and tubs as reusable dunge and to organize parts in there assembly operation. To protect parts



from surface scratching and/or damage during shipping and handling before shipping, Proto-Plasma is sprayed over the surfaces. Proto-Plasma coating works and last for about one month before recoating the same base vacuum form tray. Another added benefit is the coating adds strength and durability to the thin plastic parts pictured.

Trays like these are on the third month of usage and only showing minimal ware. Before coating the parts with Proto-Plasma, the tray would last only about 6 trips back

and forth to the supplier averaging 6 weeks to 2 months usage before replacement. The estimated tray usage based on what we see now should top six months of usage.

Proto-Plasma Successful in Thin Wall & Glass Products

Proto-Plasma has proven successful as a containment coating for thin wall and glass products. Recently, Proto-Plasma Coating and RP Tempering™ Compound has been used to enhance RP and Non-RP products alike manufactured out of various materials and processes. Catastrophic breakage and shattering of thin wall and/or brittle materials is an on going safety concern for many manufactures. Companies continue taking cost out of products by reducing material usage by thinning the walls, reducing weight to enhance performance, save energy and/or reduce packaging/shipping costs. Recent materials and applications have been:

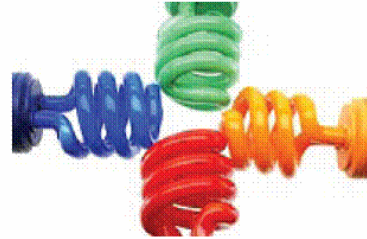
- Products and parts for Digital Manufacturing Applications to enhance durability/strength, product life perfor-

mance, prevent catastrophic breakage and/or shattering for safety/liability concerns.

- Products and parts made from RP/SFF materials and processes to enhance durability/strength, product life performance, prevent catastrophic breakage and/or shattering.
- Thin wall products made from CF Composites and/or Plastics to enhance prevent catastrophic breakage and/or shattering for safety/liability concerns.
- Glass products to prevent catastrophic breakage and/or shattering for safety/liability concerns.

Coca Cola, Tricor Braun and NASA are just a few organizations currently using RP Tempering™ Products for these applications. When products made from these materials and processes do break, Proto-Plasma and RP Tempering™ Coating are very successful con-

taining products so they do not shatter during failure and reduce the chances for catastrophic breakage long enough to control the situation. Below NASA used Proto-Plasma to coat the florescent lamps and glass lab ware.



Thin wall parts produced out of any material always present a safety issue because of the for potential catastrophic breakages and shattering. RP Tempering™ coatings proved to be successful and cost effective for these applications.

SLA Containers Maintian Fluids Under Pressure

RP Tempering™ products were successful in sealing a jar and an aerosol spray container made out of SLA resins. The SLA jar had to seal a pigmented water-based liquid without leaking. The SLA lid had to hold a seal when tightened down to keep the product from drying out. After one week in ambient temperatures the jar was opened and the liquid inside showed no sign of drying out.



The seal was successful using RP Tempering™ Products. The jar was treated with 2 coats of Proto-Reinforcement Infiltrate Coating on the inside, plus only 2 coats of RP Tempering™ Compound.

The SLA aerosol container had to hold liquid under pressure without leaking or fracturing. In this application, the spray nozzle needed to be fully functional. The SLA container was coated on the inside with 3 coats of Proto-Reinforcement Infiltrate Coating on the inside, plus only 2 coats of



RP Tempering™ Compound. Fluid was then poured into the empty container and next the spray nozzle was glued into place. The outside of the SLA aerosol container was coated on the outside with two coats of Proto-Reinforcement Infiltrate Coating and then painted white with a label applied for a product demonstration. After the glue and paint dried the contain was charged to 80% of a comparable metal can container from the top nozzle end. During the demonstration the result was successful.

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