

BENEFITS

- A superior alternative to common industry coatings such as thermal spray, plasma spray, HVOF, metalizing, twin arc, wire arc, or thermal powder deposition
- Features unsurpassed resistance to wear
- Enhanced thermal spraying technique produces a coating more ductile than chrome plate
- Lends structural integrity to the coating by providing a mechanical bond that serves as a binder
- Can be applied in thick or thin layers
- Available with a release (non-stick) or gripping surface
- Ideal for protecting or restoring all types of parts
- Some coatings perform at temperatures as high as 1,300°F
- Many coatings are USDA/FDAcompliant
- Exceptional mold release characteristics
- With the addition of our proprietary polymers, it seals all surface voids, eliminating porosity and creating superior corrosion resistance



Enhanced Composite Coatings for Most Base Metals

Unlike conventional, single component thermal spray coatings which are extremely brittle and porous, PLASMADIZE coatings are true composites made up of a matrix of high tech materials including metals, ceramics, polymers and/or dry lubricants. These components are applied either simultaneously or in as many as three sequential process steps. Our technicians customize each PLASMADIZE coating, selecting the appropriate combination of materials to suit the application, such as including polymers for chemical resistance or dry lubricants to reduce friction and increase wear resistance and provide excellent non-stick/ release properties. The condition of the substrate surface is a primary element in the effectiveness of the coating. Therefore, we developed exclusive, proprietary pre-deposition surface cleaning and preparation techniques to prepare the parts for coating.

PLASMADIZE coatings' main advantage over conventional plating processes is that they can be applied cost-effectively to very large surfaces or parts, such as large rolls. These abradable coatings can be applied in thicknesses starting at .015-.020", pre-grind, and thicker depending on





GENERAL MAGNAPLATE CORPORATION



PLASMADIZE 3129-53

Extremely wear resistant and excellent release, this coating is used in applications that are extreme and allow open tolerances. USDA/FDA-compliant.

• **PLASMADIZE 1401-04** Ability to release adhesive tapes and hot melt glue.

PLASMADIZE 3029-04

Ability to release adhesives, tapes and hot melt glue. Similar to 1401-04, but smoother profiles allow use where films or package surfaces are subject to marring.

• PLASMADIZE 1401-10

Excellent release and durability with a textured surface that minimizes point contact in applications where film release is required. Outstanding thermal conductivity and corrosion resistance. USDA/FDA-compliant.

PLASMADIZE 3129-00

Offers exceptional non-stick properties on wide variety of materials as well as wear and abrasion resistance. Outstanding corrosion protection against harsh cleaning agents to help reduce downtimes in FDA/USDA environments.

PLASMADIZE 3129-10

Good all-purpose coating with abrasion resistance, wear resistance and corrosion resistance. Excellent for lowering friction of sliding objects. USDA/ FDA-compliant.

PLASMADIZE EXC

Ultimate in wear resistance and low coefficient of friction. Used in the most severe applications USDA/FDA-compliant. the application requirements. The new surface can be precision-ground or machined back to specific, close tolerances. This is an ideal solution for rebuilding worn parts and restoring them to even "better-than-new" condition. Most PLASMADIZE coatings maintain their outstanding performance characteristics at continuous service temperatures up to 500°F (260°C) and some can tolerate up to 1300°F (704°C).

CORROSION

Can exceed 1000 hours in salt spray tests conducted according to ASTM B-117. Standard plasma coatings can exhibit corrosion after only 50 hours of exposure. Corrosion resistance: Exceeds 300 to 1,000 hours salt spray as per ASTM B-117, depending on the polymer and substrate used. Resists acids, alkalis, most organic solvents, chlorides, sulfites and thiosulfates, as well as pulp bleaching chemicals. Their non-stick, contamination-free surfaces permit quick, easy cleanup, with just water, eliminating the need for harsh environmentally-harmful cleaning chemicals. Where cleaners or detergents must still be used, PLASMADIZE has the ability to resist the wide pH range encountered in washdown solutions making them even more desirable. Because of their superior resistance to attack by acids, alkalis and a wide range of chemicals, PLASMADIZE coatings are being used to protect all types of parts in chemical, pulp and paper, fertilizer, paint and printing ink processing and manufacturing plants.

WEAR/ABRASION RESISTANCE

Provides unsurpassed abrasion resistance for diffuse loads. PLASMADIZE coatings exhibit improvement in wear resistance over conventional

plasma-applied tungsten carbide coatings, and up to 30% over surfaces produced by plasmaapplied ceramic coatings. Long-term wear resistance is exceptional for all the coatings in the PLASMADIZE family. Their wear resistance is significantly superior to that of chrome plating or heat treated electroless nickel. They outperform any of the conventional plasma coatings currently specified to combat wear.







TYPICAL APPLICATIONS FOR:

WEAR RESISTANCE	LOW COEFFICIENT OF FRICTION	CORROSION RESISTANCE	FOOD & PHARMACEUTICAL	RELEASE/ NON-STICK	HIGH TEMPERATURE
Screw conveyors Wire drawing blocks Cutter wheels Mandrels Pump packings Molds Cylinder liners Piston rods Conveyor guides Sprockets Guide rails Textile rolls	Doctor blades Support rolls Cutter wheels Thread guides Indexing pins Collett fingers Cam shafts Tension rolls Extruder hoppers Clutch plates Molds Grates	Structural steels Extruders Flow solder equipment Paper mill rolls Mixer shafts Pumps Augers Hydraulic ram bearings Gland seals Gate and ball valves Bag formers	Cookie molds & dies Pharma molds Potato chip paddles Vibratory feeder bowls Calibration rolls Flow guides Seal bars Plates and formers Cooking pans Hoppers Filling machines Griddles Bag formers	Molds Glide sheets Applicator rolls Rolls Seal & peeler bars Crimping jaws Heat stake tools Forming dies (dup) Pre-heat plates Troughs Conformal fixtures	Cylinder heads Seal bars High temperature grippers Pouring troughs Extruders High temperature molds



Seal bars can be coated with PLASMADIZE to increase wear life and prevent packaging films from sticking during heat sealing operations. **Temperature**. Infused proprietary polymers can maintain their performance characteristics at $a \le 500^{\circ}$ F (260°C) continuous operating temperature.

Friction. Plasmadize surfaces exhibit coefficients of friction as low as 0.06 compared to 0.22 for a typical thermal spray tungsten carbide coated surface, and a COF of 0.17 for the typical thermal spray ceramic surface. Appropriate selection of the infused polymer or the application of another surface polymer provides a highly lubricious non-stick surface, with a COF as low as 0.13.

Thickness. Can be applied in substantial thicknesses, extending service life. Thickness range from .002" to .010". PLASMADIZE is not recommended for tiny parts or where coating thicknesses of less than 0.002" are required.

Hardness. Exact hardness measurements not available due to composite nature. Hardness of matrix materials used surpasses Rc scale. Equilibrium wear rates as low as 0.1 mg per 1,000 cycles.

Release/Non Stick. Exhibits superior release properties against glue, tape and other sticky substances with addition of infused proprietary polymers. Coatings can be customized for the type of sticky residue coming into contact with the surface.

FDA/USDA. Many meet USDA/FDA codes making them ideal for use in the food, beverage and pharmaceutical processing and packaging industries.