

TECHNICAL INFORMATION
LASER MARKING PRODUCT

CerMark™



LMM-6000 Metal Marking Material

1.0 Product characteristics

LMM-6000 is a laser marking material for metals. LMM-6000 is ethanol based, which allows for a fast drying time. It can be used on a variety of bare metal substrates including stainless steel, brass, aluminum, titanium, tin, nickel, and many more. LMM-6000 will not work on metals with a lacquered coating.

2.0 Product characteristics

2.1 Physical Properties	
Appearance	Yellowish gray colored, thick, pancake batter-like consistency.
Density	11.6 – 11.8 pounds/gallon
Flash Point	<66° F / <18.9° C
Drying Rate	Fast
2.2 Strengths of Product	
Versatility and ease of application. High quality, high contrast, durable marks on a variety of metal substrates.	
2.3 Recommended Application Parameters	
Application Methods	Spray gun, airbrush, paintbrush, Bird applicator, draw down bar or foam brush.
Application	Clean surface of metal so that it is free of any lubricants or oils. LMM-6000 Must be applied with an even and thin coat to ensure a consistent mark.
Wet Film Thickness	0.5-2 wet mils.
Thinner	Ethanol, denatured alcohol or grain alcohol. Isopropyl alcohol or water should be avoided.
Recommended reduction	For brushing applications, a 4:1 mix of LMM-6000 to thinner. For spray applications, a 2:1 mix of LMM-6000 to thinner.
Suggested Cleaning Solvents	Wash up with water or a wet towel.
2.4 Curing/Drying of Product	

Drying Method	Air dry, radiant heat, hair dryer or convection oven.
Drying Parameters	Typically air dries in about 2 minutes, can be sped up by force drying.
2.5 Laser Marking of Product	
Laser Marking Method	CO2 or YAG laser
Recommended Starting Point for Settings	CO2: 90-100% power (35 watt laser) 15-30% speed 500 DPI / 500 PPI YAG: 20-25 watts 10-20 inches/sec speed
2.6 Application Notes	
<p>For optimum mark quality, a thin even covering of LMM-6000 should be used. If the material is applied too thin, the marks won't be as dark. If the material is applied too thick, more power will be required to make the mark. Applying LMM-6000 may require a little practice to get the right coverage. It is also important to allow the coating to dry thoroughly.</p> <p>LMM-600 is formulated to be thick to prevent settling. It may be necessary to thin the paste before using. Application method will determine the amount of thinner required, along with room temperature and humidity. The ratios recommended above should be sufficient. Keep in mind that the more the material is thinned, the less active ingredients are being applied. Overthinning will result in a lighter mark than properly thinned and applied LMM-6000.</p>	
2.7 Marking Notes	
<p>Marking may require some trial and error to optimize your laser with a particular substrate. Keep in mind that all lasers react differently depending on the substrate. Also, if you are working on a "softer" metal substrate such as aluminum or brass, more power and/or slower speed may be needed. Again, you may need to run several tests to optimize the setting for your laser.</p> <p>Marking may possibly be done using diode pumped, fiber and other similar types of lasers.</p>	

3.0 Product Preparation

Insure that the product has been well mixed prior to use. Some settling may occur during long storage. Paste temperature should be equivalent to your printing room temperature prior to measuring viscosity or application.

4.0 Viscosity Test Method

dmc² product viscosity is measured by a Brookfield™ RVT DVIII Rheometer using a #27 spindle at 100 RPM, 24.0 °C.

5.0 Storage Recommendations

Product must be stored in cool and dry conditions. The storage temperatures should not be below 5°C and not exceed 35°C. Settling could occur if stored for long periods of time. Before use, products must be stirred thoroughly. Partly used containers must be tightly sealed after use. If stored as recommended, a minimum shelf life of six months after the production date is guaranteed.



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