

Technical Data Sheet

Solutions for LMM-6000 Paste



LMM-6000 is our 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, copper, nickel and the like. If the metal has **a lacquered** coating, the **LMM-6000** marking material **will not work**.

Thinning:

LMM-6000 is formulated thick to prevent settling. It may be necessary to thin the paste before using. We recommend thinning with ethanol, denatured alcohol, acetone or methyl ethyl ketone (MEK). **Isopropyl rubbing alcohol should be avoided**. Application method will determine how much you need to thin **LMM-6000**. When spraying we recommend a 1:1 mix of **LMM-6000** to ethanol, by volume. MEK and acetone are stronger solvents, so you will need less thinner if using these. When applying with foam brush we recommend a 2:1 ratio to start, 2 parts ethanol to 1 part **LMM-6000** by volume, add more ethanol as needed. Keep in mind that the more the material is thinned, the less active ingredients are being applied. If **LMM-6000** is thinned too much, the mark may appear to be lighter in color than what the **LMM-6000** could produce.

Applying:

Clean the surface of the metal so it is free of any type of lubricants or oils. Apply a thin coat of **LMM-6000** to the metal; try to apply an even coating. **LMM-6000** can be applied by a spray gun, air brush, paint brush or a foam brush. If the material is applied too thin, the mark will not be as dark. If the material is applied too thick, it will require more power to make the mark. It is important that **LMM-6000** is applied with **an even and thin coat**. Applying **LMM-6000** may require practice to achieve the right coverage. **We recommend that all CerMark LMM products be applied in a well-ventilated area or spray booth designed to pull air away from user.**

Drying:

It is important that the **LMM-6000** is allowed to dry thoroughly. It can air dry in about 2 minutes. This process can be sped up by using a drying oven, hair dryer or a heat lamp.

Marking On Stainless Steel & Other metals:

This step 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, the type of laser, the laser's power, dot size, and other factors:

	25 Watt	35 Watt	50 Watt
Power	100%	100%	100%
Speed	10%	15%	20-30%
DPI/PPI	500/500	500/500	500/500

Marking On Aluminum & Brass:

Softer Metals require more power or slower speeds to obtain a permanent mark. We recommend at least a 50 Watt CO₂ lasers for such metals.

	Brass			Aluminum		
	25 Watt	35 Watt	50 Watt	25 Watt	35 Watt	50 Watt
Power	100%	100%	100%	100%	100%	100%
Speed	2%	4%	6%	4%	7%	10%
DPI/PPI	500/500	500/500	500/500	500/500	500/500	500/500

Additional Testing Grid (CO₂) similar testing can be adapted for solid state systems as well

- Set laser power output at 100% or 90% is optional for laser systems over 75 watts.
- Then laser test marks at various speed settings one beside the other.
- Scrub test marks with 3M Scotch-Brite / Medium Duty Scrub Pad to verify durability.
- Based on these results choose the best setting for your application.

If you are using a **YAG** laser, you will need to use about **20-25 Watts** of power and a writing speed between **10-20 inches/second**. Again, you may need to run several tests to optimize the settings for your particular laser, similar to above Testing Grid.

Clean up:

Wash with water or a wet towel or sponge.

Storage

Recommended Storage at room temperature

Contact Information:

To place an order or questions about properties of this product, application techniques or laser settings please call:

800-245-4951
Customer Service & Technical Service Representative

Limitation of Warranty and Liability

Ferro believes that the information contained in this document is accurate at the time of its publication. Ferro makes no warranty with respect to the information contained in this document. The information in this document is not a product specification, either in whole or in part. Your use of the information contained in this document and your purchase and use of this Ferro product are at your sole discretion. Downstream users are responsible for determination of the suitability of this product and for testing in specific applications. Nothing in this document shall be construed as a license for use that infringes upon any property rights of any third party. Please refer to the Safety Data Sheet (SDS) for safe use, handling and disposal information. All sales by Ferro to you are subject to Ferro's Terms and Conditions of Sale, as amended from time to time and available at www.ferro.com. In the event this document conflicts with Ferro's Terms and Conditions of Sale, Ferro's Terms and Conditions of Sale shall control.