

Technical Data Sheet

Solutions for LMM-14 Aerosol



LMM-14 is one of our laser marking material for metals. **LMM-14 Aerosol** 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-14** marking material **will not work**.

Using LMM-14:

LMM-14 is ready to use in aerosol can form. **IMPORTANT: Shake can well before using. Allow the agitator ball to rattle for at least 2 minutes. Failure to shake thoroughly will result in spitting and clogging of the nozzle.** For best results, use when aerosol is between 70 and 90 degrees F.

Applying:

Clean the surface of the metal so that it is free of any type of lubricants or oils. Hold can approximately 8-12 inches from substrate to be sprayed. Depress valve fully during spray. Apply a thin coat of **LMM-14** to the metal, try to apply an even coating. Try to cover the area to be marked with a light spray, using two passes. If the material is applied too thick, it will require more power to make the mark. It is important that **LMM-14** is applied with **an even and thin coat**. Applying **LMM-14** may require practice to achieve the right coverage. After use, the can nozzle should be cleaned by inverting the can and spraying until mist becomes clear. Any excess material on the nozzle should be cleaned off with water. **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-14** is allowed to dry thoroughly. It will air dry in about 2 minutes. This process can be sped up by using an oven, hair dryer or a heat lamp.

LMM-14 dries quickly as a light-gray powder coat and is extremely easy to wash after laser marking. This coat should not be extensively handled prior to laser marking, however, so **LMM-14** should be marked shortly after application.

If you are interested in a general marking product which offers a more durable hard coat for handling during the process, please check out our LMM-6000.

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.

Storage:

Do not expose to temperatures exceeding 50 degrees C / 120 degrees F.

There are solids and liquids that make up the aerosol marking products. If the aerosol can remains unused for any length of time the liquids and solids will separate, with the solids settling to the bottom of the can. It's best to store the can upside down. When doing so this will prevent the solids from settling on the bottom of the can where the intake stem is located. When this is done it will be easier to prevent the solids from entering the stem before the solids are mixed back into solution with the liquids.

It's very important to shake the aerosol can for 2 minutes after the rattle ball inside the can has been released.

It is also recommend that you invert the can after use and spray for a few seconds to clear the system. If you limit this to just a few seconds (3-5) there will be no waste of propellant gases, the aerosol cans have an adequate supply of gas for this procedure.

A simple wipe of the nozzle is recommended so that products doesn't dry over the hole causing a disruption in the spray pattern.

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Clean up:

Wash with water or a wet towel or sponge.

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

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