TherMark LMC12
Black for Plastic

Recommended use:
Formerly recommended for marking glass and ceramic, LMC12 is now recommended for creating black marks on nylon, PVC, polyethylene, polyurethane, polycarbonate, and other thermo-plastics. LMC12 dries quickly as a black powder coat and is easy to wash after marking. The coat can be smudged or wiped off prior to laser marking, however, so LMC12 should be marked shortly after application. Certain plastic substrates may require washing with soap to remove the excess ink after laser marking.

If you are interested in making black marks on glass or ceramic please check out our LMC6044P. LMC6044P makes darker black marks on glass and ceramic than LMC12. If you are currently using LMC12 for marking glass or ceramic, we recommend upgrading to LMC6044P.

Recommended substrates:
LMC12 makes great marks on the thermo-plastics listed below. This list is not exhaustive, however, so if your substrate does not appear on the list, this does not mean LMC12 will not mark it.

Nylon	Polyurethane
HDPE	UHMWPE
Polycarbonate	PVC

Lasers that work:
LMC12 will work with either CO_2 or solid state lasers, but it is easier to achieve a high quality mark on plastic with a CO_2 laser.

Dilution:
LMC12 will need to be diluted differently depending on how you plan to apply it.

- **Air brush application:** Ratio of 1:3 (1 part in volume of LMC12, 3 parts in volume of denatured alcohol) is recommended (please refer to your air brush manual for information about material thickness for your model type).

- **Foam brush (hand) application:** Ratio of 1:2 (1 part in volume of LMC12, 2 parts in volume of denatured alcohol) is recommended.

For more detailed information on dilution, please visit www.thermark.com.

Application methods:
Please make sure that the surface to be marked is free and clear of oils, cleaning agent films, dust, and lacquer coating.

- **Air brush application:** When applying LMC12 from an air brush, the resulting coating should be about 1/2 mil thick (~12 µm). Spray uniformly at a 10" distance from the surface and move the nozzle from one side to the other covering the whole substrate area. Start spraying away from the area to be marked and move towards the opposite side and past the target area. Over-spraying before and after the target area allows constant velocity of movement and will help provide an even coating on the substrate. Make sure the substrate is not visible underneath. If necessary spray one or two more times.

- **Foam brush (hand) application:** When hand applying LMC12 the resulting coating of LMC12 should be ½ - 1 mils thick. Use about a 1" wide foam brush and soak less than ¼" of the brush with LMC12. There is no need to soak more than that, otherwise the ink may splash and result in an uneven coat thickness. Apply with smooth, even strokes.

Note: Air brush application is preferred over foam brush application. It can be challenging to achieve the smooth, even coating of laser marking material necessary for optimal marks when using a foam brush. We only recommend foam brush application if you do not have an air brush or are coating a small surface area.

For more detailed information on application, please visit www.thermark.com.

Drying time & methods:
If left to air dry, LMC12 is normally fully dry in about 60 seconds. If air drying takes too long, however, a hair drier or forced air heater may be used to speed up the process. LMC12 can be fully dried with an average household hair dryer in less than five seconds.

Laser settings:
Power and speed are the two most important variables to control when using TherMark laser marking materials with any laser, but there are other relevant variables depending on which laser you are using, such as the focal length of the focusing lens, resolution (DPI), rep rate (PPI, Hz), or hatch spacing (for vectoring mode operation). Please visit www.thermark.com to read more about laser settings and to download an LMC12 laser settings chart.

Product Appearance:
LMC12 is a jet black liquid which is thick and dense like children's glue. It will need to be thinned and stirred prior to use, but will remain jet black in color after dilution.

Once applied to the substrate and dry, LMC12 will be a black powder-like coating.

Shipping options:
LMC12 liquid is a non-hazardous, water-based product and can be shipped via ground or air with no additional charges.

Product storage:
All LMC products should be stored between 40ºF (5ºC) and 95ºF (35ºC) in a dark, dry place.

Disposal:
LMC12 is a water-based material and is environmentally safe and non-hazardous. After laser bonding, any excess, un-bonded material can be washed off the substrate and down the drain into your normal water/sewer waste area.

Unused containers of liquid ink/paste can be safely disposed of in your regular trash and solid waste area.

Availability:
LMC12 comes in 2 sizes: for price and availability, please contact TherMark.

LMC12.TM.50	50 gm liquid ink, up to 1,200 sq/in
LMC12.TM.250	250 gm liquid ink, up to 6,000 sq/in

* Product coverage in above table assumes proper application (dilution/coating thickness).