



MATERIAL SAFETY DATA SHEET

PRODUCT: Paste
REVISION NUMBER: 1

REVISION DATE: 05/14/2007
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1. PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURED BY: TherMark Holdings, Inc.
33 Hammond
Suite 205
Irvine, CA 92618
Prod Info 323-344-9500
CHEMTREC 800-424-9300

Use the CHEMTREC telephone number only in the event of chemical emergencies.

PREPARED BY: Paul Harrison
Chief Technology Officer

PRODUCT CODE: LMC74

PRODUCT TRADE NAME: LMC74 Yellow Laser Marking Paste

CAS NO: Mixture
CHEMICAL FAMILY: Decorative Coating
PRODUCT TYPE: Laser Marking Coating

2. COMPOSITION/INFORMATION ON INGREDIENTS

This product does not have exposure limit values. Exposure limit values for some of the components are listed below as a guideline for safe use of this product.

HAZARDOUS COMPONENTS

INGREDIENTS/CAS #	OSHA PEL:	ACGIH TLV:
Zinc Oxide 1314-13-2	TWA total dust: 15.0 mg/m ³ ; respirable dust: 5.0 mg/m ³ ; TWA fume: 5.0 mg/m ³	TWA dust: 10.0 mg/m ³ ; TWA fume: 5.0 mg/m ³ ; STEL fume: 10.0 mg/m ³
Crystalline Silica 14808-60-7	TWA respirable dust: 0.05 mg/m ³	TWA respirable fraction: 0.05 mg/m ³
Cadmium Compound NONE	TWA as Cd 0.005 mg/m ³	TWA as Cd 0.01 mg/m ³ Respirable Fraction 0.002 mg/m ³

3. HAZARDS IDENTIFICATION

PRINCIPLE ROUTES OF EXPOSURE: Inhalation, ingestion and dermal.

The key immediate hazards are:
Skin, eye, and respiratory irritant

Effects from Acute Exposure:

PRODUCT TRADE NAME: LMC74 Yellow Laser Marking Paste

- EYE CONTACT :** Causes eye irritation.
- SKIN CONTACT:** Causes skin irritation.
- INHALATION:** Causes lung irritation.
- INGESTION:** May be harmful if swallowed.

AGGRAVATED MEDICAL CONDITIONS:

Respiratory

Populations at increased risk to cadmium include individuals with kidney disease, genetic differences in induction of metallothionein and dietary deficiencies in metal ions and/or protein.

Effects from Chronic Exposure:

CARCINOGENIC INGREDIENTS:

This product contains greater than 0.1% crystalline silica. The International Agency for Research on Cancer (IARC) has determined that "there is sufficient evidence for the carcinogenicity of crystalline silica to experimental animals and limited evidence of carcinogenicity in humans. "The National Toxicology Program (NTP) Sixth Annual Report confirms this determination. It has listed crystalline silica as a substance reasonably anticipated to be a carcinogen.

Cadmium & cadmium compounds: "The evidence for the carcinogenicity of NTP (1983): Cadmium and certain cadmium compounds in experimental animals is sufficient; the evidence of carcinogenicity in humans is limited." (IARC) "cadmium chloride, oxide, sulfate, and sulfide are carcinogenic in rats, causing local sarcomas after subcutaneous injection. Cadmium powder and cadmium sulfide produce local sarcomas in rats following intramuscular administration..."(IARC).

PRODUCT TRADE NAME: LMC74 Yellow Laser Marking Paste

OVEREXPOSURE EFFECTS:

CONTAINS CRYSTALLINE SILICA:

Crystalline silica can cause silicosis, a lung disease characterized by coughing, wheezing, impaired lung function and increased sputum production. This damage can be progressive and may cause death. May cause cancer following repeated and prolonged inhalation of the fine dust. Smoking aggravates these effects. Skin and eye contact may cause irritation due to mechanical abrasion.

CONTAINS ZINC OXIDE (AS REACTED INTO THE FRIT/PIGMENT):

If processing can produce zinc oxide fumes, its inhalation may cause nausea, vomiting, fever, chills, metallic taste, and muscle pain.

CONTAINS CADMIUM COMPOUNDS:

Overexposure to cadmium by inhalation can result in a metallic taste in the mouth, headache, shortness of breath, chest-pain, weakness, leg pains and fluid in the lungs. These signs and symptoms may be delayed, sometimes occurring four to eight hours following exposure. Kidney and liver damage may also occur. Swallowing can result in severe nausea, vomiting, diarrhea, stomach cramps, salivation, headache, muscle cramps, and dizziness.

Long term overexposure to the fumes and dust of cadmium have been associated with emphysema, bronchitis and kidney damage. Chronic overexposure to the metal and cadmium compounds, such as cadmium oxide, cadmium sulfide, cadmium sulfate and cadmium chloride, may result in lung cancer, although a definite cause-effect relationship has not been fully established.

4. FIRST AID MEASURES

INGESTION: If swallowed, give at least 3-4 glasses of water, but do not induce vomiting. Do not give anything by mouth to an unconscious or convulsing person. Get immediate medical attention.

SKIN: For skin contact, wash affected areas with plenty of water, and soap if available, for several minutes. Get medical attention if irritation occurs.

INHALATION: If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

EYES: For eye contact, immediately flush eyes for at least 15 minutes with running water. Hold eyelids apart to ensure rinsing of the entire eye surface and lids with water. Get immediate medical attention if irritation develops.

NOTES TO PHYSICIAN: Use of this product is regulated by the OSHA Cadmium Standard (29 CFR 1910.1027). The extensive medical surveillance and worker removal provisions of this standard should be consulted. Cadmium and its inorganic compounds are harmful to the kidneys and lungs.

5. FIRE FIGHTING MEASURES

OSHA FLAMMABILITY CLASS: NON-COMBUSTIBLE

PRODUCT TRADE NAME: LMC74 Yellow Laser Marking Paste

FLASH POINT: >200 F

Flashpoint Method: Pensky-Martin Closed Cup or Grabner Mini-flash

Lower Explosive Limit: Not Available

Upper Explosive Limit: Not Available

EXTINGUISHING MEDIA: Water

FIRE FIGHTING PROCEDURES: Fire-Fighters should wear self-contained breathing apparatus and full protective clothing when fighting chemical fires.

Use water spray to cool nearby containers and structures exposed to fire.

UNUSUAL HAZARDS: Decomposition and combustion products may be toxic.

6. ACCIDENTAL RELEASE MEASURES

SPILL PROCEDURES:

Dry sweeping of cadmium containing dust is a violation of the OSHA Cadmium Standard (29 CFR 1910.1027).

For clean up of cadmium containing products, HEPA (high efficiency particulate air purifying) filtered vacuuming equipment or equally effective filtration methods shall be used and emptied in a manner that minimizes the re-entry of cadmium into the workplace. Wear appropriate protective equipment. Avoid the generation of dust. Collect (Vacuum, Absorb, or Shovel) material and place in closable container(s) for disposal.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Avoid contact with eyes, skin and clothing.

NOTES ON HANDLING INFORMATION: Minimize dust generation during handling. Use adequate ventilation.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION: Adequate ventilation should be provided to keep concentrations below acceptable Exposure Limits. Discharge from the ventilation system should comply with the applicable air pollution control regulations.

If air from exhaust ventilation is recirculated into the workplace, the system shall have a high efficiency filter and be monitored to assure effectiveness in accordance with the OSHA Cadmium Standards (29 CFR 1910.1027).

EYE PROTECTION: Wear safety glasses or goggles to protect against exposure.

PROTECTIVE GLOVES: Use gloves as a standard industrial handling procedure.

PRODUCT TRADE NAME: LMC74 Yellow Laser Marking Paste

RESPIRATORY PROTECTION: Appropriate respiratory protection is required when exposure to airborne contaminant is likely to exceed acceptable limits. Respirators should be selected and used in accordance with OSHA Subpart I (29 CFR 1910.134) and manufacturer's recommendations.

OTHER PERSONAL PROTECTIVE EQUIPMENT: None specified.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Yellow Paste

BOILING POINT: Not Applicable

VAPOR DENSITY (AIR=1): Non-Volatile

EVAP. RATE(BUTYL ACETATE=1): Non-Volatile

VOC, Wt.% (EPA METH.24): 0

BULK DENSITY: Not Available

SOLUBILITY (in water): Insoluble

10. STABILITY AND REACTIVITY

STABILITY DATA: STABLE

POLYMERIZATION: WILL NOT OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide and depending on conditions, some hydrocarbon fragments may also be formed.

INCOMPATIBILITY

(MATERIALS TO AVOID): Strong oxidizing agents

CONDITIONS/HAZARDS TO AVOID: None known.

11. TOXICOLOGICAL INFORMATION

No Toxicological data known.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: No data at this time

CHEMICAL FATE INFORMATION: No data at this time.

PERSISTENCE/DEGRADABILITY: No data at this time.

APPRAISAL: No data at this time.

MOBILITY: No data at this time.

13. DISPOSAL CONSIDERATIONS

DISPOSAL OF WASTE METHOD: Dispose in accordance with Federal, State and Local regulations.

14. TRANSPORT INFORMATION

DOT Shipping Name: NON-HAZARDOUS
DOT HAZARD CLASS: NONE
DOT LABEL(S): NONE
UN/NA NUMBER: NONE
PACKING GROUP: NONE

15. REGULATORY INFORMATION

SARA SECTION 302: None Found

SARA (311, 312) HAZARD CLASS: ACUTE HEALTH HAZARD

CHRONIC HEALTH HAZARD

SARA 313 Title III Toxic Chemical List:

The following chemicals are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

28	%	Barium compounds	1	%	Metal as Ba
28	%	Cadmium compounds, n.o.s.	19	%	Metal as Cd
28	%	Zinc compounds	< 1	%	Metal as Zn

TSCA Inventory Status: This product (and/or all of its components) is in compliance with the U.S. EPA Toxic Substance Control Act, TSCA, (15 U.S.C. 2604).

This product and all of its components is listed on the DSL inventory.

16. OTHER INFORMATION

Revisions: The Format has been changed to meet the requirements of the new ANSI Standard Z400.1.

LABEL INFORMATION:

DANGER!

Contains cadmium which is a cancer hazard. Cadmium can cause lung and kidney disease.

Skin, eye, and respiratory irritant.

Contains crystalline silica which can cause lung damage, including cancer.

Avoid contact with eyes, skin and clothing.

Do not breathe dust.

Keep away from food products.

Wash thoroughly after handling and before eating, drinking or using cosmetic or tobacco products or toilet facilities.

Use with adequate ventilation.

Handle in accordance with the OSHA Cadmium Standard.

Keep container closed when not in use.

FIRST AID: If inhaled, remove to fresh air. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water. Remove contaminated clothing. Get medical attention.

IN CASE OF FIRE: Use water, dry chemical or carbon dioxide.

IN CASE OF SPILL: Collect and dispose in accordance with federal, state and local regulations.

FOR INDUSTRIAL USE ONLY.

PRODUCT TRADE NAME: LMC74 Yellow Laser Marking Paste

DEFINITIONS AND ABBREVIATIONS :

ACGIH = American Conference of Governmental Industrial Hygienists
C (CEIL) = The concentration that shall not be exceeded during any part of the working exposure.
CAS # = Chemical Abstracts Service Registry Number
EPA = Environmental Protection Agency
IARC = International Agency for Research on Cancer
NIOSH = National Institute for Occupational Safety and Health
NTP = National Toxicology Program
OSHA = Occupational Safety and Health Administration
PEL = Permissible Exposure Limit
SARA = Superfund Amendments and Reauthorization Act
STEL = Short Term Exposure Limit. Usually a 15 minute time weighted average exposure.
TLV = Threshold Limit Values
TSCA = Toxic Substance Control Act
TWA = Time Weighted Average. Exposure concentration for a normal 8 hour day or 40 hour week.
VOC = Volatile Organic Content

DISCLAIMER: The information contained in this Material Safety Data Sheet (MSDS) has been compiled from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the MSDS was prepared. No guarantee is made as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine the regulatory compliance obligations under any applicable federal or state laws.

*** END OF MSDS ***