

Safety Data Sheet for Chemical Products (91/155 EWG)

Date: 16 Dec 2005

Laser Marking Material LMM 6000

1. Product and Company Identification

Name: **LMM 6000**
Supplier: TherMark GmbH
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D-90547 Stein, Germany
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Internet: www.thermark.de
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60039 Frankfurt am Main
Germany
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Recommended Use: Ceramic coating suited for firing, for glass and ceramics

2. Composition / Information on ingredients

Chemical Nature

Product contains: metal oxide/hydroxide, alcohol, water, inorganic salt, silicatic material

Information in ingredients / Hazardous components:

Name	CAS-No.	Symbol(s)	Concentr.	EC-No.	R-phrases(s)
Molybdenum Trioxide	1313-27-5	Xn	30-50%	215-204-7	R36/37, R48/20/22
Ethanol	64-17-5	F	30-50%	200-578-6	R11
Sodium Trioxovanadate	13718-26-8	T	1-3%	237-272-7	R23/25
S-Butanedioic ac.ester, Na-salt	577-11-7	Xi	1-3%		R36/38, R52/53

See chapter 16 for text of risk phrases

3. Hazards Identification

Highly Flammable

Irritating to eyes and respiratory system

Harmful: Danger of serious damage to health by prolonged exposure through inhalation and if swallowed

Safety Data Sheet for Chemical Products (91/155 EWG)

Date: 16 Dec 2005

Laser Marking Material LMM 6000

4. First Aid Measures

General Advice

Bring affected person out of danger area. Place person on side in stable position if unconscious. Employ mouth-to-mouth resuscitation if breathing ceases. Remove contaminated or saturated clothing

Inhalation: Take affected persons out into fresh air.

Skin contact: Remove contaminated or saturated clothing. Wash off immediately with soap or plenty of water.

Eye contact: With eye held open, thoroughly rinse immediately with plenty of water for at least 10 minutes.

Ingestion: Make affected person vomit but only if he is fully conscious. Have patient rinse out mouth with water. If symptoms persist, call a physician. Have patient drink plenty of water in small sips.

Notes to physician: No own experience available.

5. Fire fighting measures

Suitable extinguishing media: Water (spray jet), mist, special quenching powder, quenching foam (use large amount of foam as it will be partially destroyed), carbon dioxide.
Extinguishing media which must not be used for safety reasons: high volume water jet

Specific hazards during fire fighting: May be released in case of fire: flammable smouldering gases. When heated, formation of explosive vapour/air mixtures.
Special protective equipment for fire-fighters: Standard procedure for chemical fires.

Further information: Water used to extinguish fire should not enter drainage systems, soil, or stretches of water. Ensure there are sufficient retaining facilities for water used to extinguish fire. Contaminated fire-extinguishing water must be disposed of in accordance with the regulations issued by the appropriate local authorities. In case of fire, remove the endangered containers and bring to a safe place, if this can be done safely.

6. Accidental release measures

Personal precautions: Ensure adequate ventilation. Remove all sources of ignition. Wear personal protective equipment; see section 8.

Environmental precautions: Avoid penetration into drainage system or in rooms situated at a lower level because of danger and explosion. Prevent penetration into soil, stretches of water and drainage systems.

Methods for cleaning up: Absorb with liquid-binding material (e.g. inert absorbent kieselguhruniversal binder) pick up.

Additional advice

Dispose of contaminated material as waste in accordance with section 13.

Safety Data Sheet for Chemical Products (91/155 EWG)

Date: 16 Dec 2005

Laser Marking Material LMM 6000

7. Handling and Storage

Handling

Safe handling advice: Keep away from sources of ignition – No smoking. Do not breathe in vapours or aerosols.

Advice on protection against fire and explosion: Highly volatile substances may be released during processing; therefore avoid sources of ignition. Take measures to prevent the build up of electrostatic charge.

Storage

Requirements for storage areas and containers: Fumes may be released in closed storage rooms or during processing. Store in a dry place at room temperature. Store in cool place.

Further information: Product is slightly water-pollutive. Observe the national and local regulations concerning handling and storage.

Advice on common storage: Keep away from tobacco products. Keep away from food, drink and animal feedingstuffs.

German Storage Class: 3A (classification by producer in accordance with VCI scheme)

8. Exposure controls / Personal protection

Components with workplace control parameters:

Name	CAS-No.	Control parameters	EC-No.
Ethanol	64-17-5	500,00 ml/m ³ , 960,00 mg/m ³	200-578-6 MAK (Germany)

Engineering measures: If possible, use material transfer/filling, metering and blending plants that are closed. Eventual aspiration in case of solvent fumes. Technical protection measures have always priority over personal protection equipment. Take precautionary measures against electrical discharges. Earthing of equipment.

Occupational exposure controls

Personal protective equipment

Respiratory protection: Ensure suitable suction/aeration at the work place and with operational machinery. If workplace exposure limit is exceeded apply Respirator with brown A-type filter.

Hand protection: Wear protective gloves made of the following materials: nitrile rubber.

Eye protection: wear basket-shaped glasses or safety goggles with side-shields.

Skin and body protection: Safety shoes. When handling larger quantities: rubber pron, plastic apron

Hygiene measures: Wash hands before breaks and immediately after handling the product. Wash hand before breaks and at the end of workday.

Environmental exposure controls: No data available

Safety Data Sheet for Chemical Products (91/155 EWG)

Date: 16 Dec 2005

Laser Marking Material LMM 6000

9. Physical and Chemical properties

Form:	Paste
Color:	white
Odor:	characteristic
Physical state:	liquid
Flash point:	12°C (DIN 51755 Part 1)
Lower explosion limit:	3,3% (V)
Upper explosion limit:	19% (V)
Water solubility:	soluble
Viscosity kinematic:	> 411 mm ² /s (23°C)

10. Stability and Reactivity

Conditions to avoid: No data available

Materials to avoid: oxidizing agents

Hazardous decomposition products: No data available

11. Toxicological information

Acute toxicity: Harmful if swallowed. Harmful by inhalation

Skin irritation: No data available

Eye irritation: Irritating to eyes and respiratory system. Vapour during processing may be irritating to the respiratory tract and to the eyes.

Sensitization: No data available

No results of animal experiments with the product available. (If applicable, information referring to individual components of the product is given below).

Acute oral toxicity

Ethanol: LD50 rat: 6200,00 mg/kg

Sodium Trioxovanadate: LD50 rat: > 700 mg/kg

Acute inhalation toxicity

Ethanol: LC50 rat: 8000,00 mg/l/4h

Acute dermal toxicity

Ethanol: LD50 rabbit: >20.000,00 mg/kg

12. Ecological information

Persistence and degradability

Biodegradability: No data available

Physico-chemical removability: No data available

Behaviour in environmental compartments

Mobility: No data available

Ecotoxicity effects

Specific information for this product is not available (If applicable, information referring to individual components of the product is given below).

Toxicity to fish

Ethanol: LC50 Fish: 8140,00 mg/l/48h

Toxicity to daphnia

Ethanol: EC50 Daphnia: >9.258,00 mg/l/48h

Further information on ecology

Further information: No data available

Safety Data Sheet for Chemical Products (91/155 EWG)

Date: 16 Dec 2005

Laser Marking Material LMM 6000

13. Disposal considerations

Product

In agreement with the waste code must be determined regional waste disposal authority or company. Dispose of as special waste in compliance with local and national regulations. Do not contaminate ponds, waterways or ditches with chemical or used container. Do not dispose of waste into sewer.

Uncleaned packaging

Dispose of as unused product. If there is product residue in the emptied container, follow directions for handling on the container's label.

14. Transport information

Land transport ADR/RID/GGVSE (Germany)

Class: 3
Code: F1
Packaging group: III
Orange warning plate: 33 / 1263
Description of the goods (Technical name): PAINT

Sea transport IMDG-Code/GGVSee

Class: 3
UN-No.: 1263
Packaging group: III
Proper technical name (Proper shipping name): PAINT

Air transport ICAO-TI/IATA-DGR

Class: 3
UN-No.: 1263
Packaging group: III
Proper technical name (Proper shipping name): PAINT

15. Regulatory information

Labelling according to EC Directives: Statutory basis/list: 1999/45/EC

Hazard-defining component(s)

Molybdenum trioxide

Symbol(s)	Xn	Harmful
	F	Highly flammable
R-Phrase(s)	R11	Highly Flammable
	R36/37	Irritating to eyes and respiratory system
	R48/20/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
S-Phrase(s)	S9	Keep container in a well-ventilated place
	S16	Keep away from sources of ignition – No smoking.
	S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	S33	Take precautionary measures against static discharges.
	S60	This material and its container must be disposed of as hazardous waste

Safety Data Sheet for Chemical Products (91/155 EWG)

Date: 16 Dec 2005

Laser Marking Material LMM 6000

16. Other information

Risk phrases (R phrase) texts

Molybdenum trioxide

R36/37 Irritating to eyes and respiratory system
R48/20/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed

Ethanol

R11 Highly flammable

Sodium trioxovanadate

R23/25 Toxic by inhalation and if swallowed

S-butanedioic ac. ester, Na-salt

R36/38 Irritating to eyes and skin
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Further information

Data sheet producing department: Ferro RC-PS, Tel.: +49 (0)69 27116-605

Changes since the last version will be highlighted in the margin. This version replaces all previous versions.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safety handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or any process, unless specified in the text.