

MATERIAL SAFETY DATA SHEET

PRODUCT: Spray
REVISION NUMBER: 1

REVISION DATE: 05/04/2007
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1. PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURED BY: RINSYUNDOU Co.,Ltd

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

PREPARED BY: Paul Harrison
 Chief Technology Officer

PRODUCT CODE: **LMM14**

PRODUCT TRADE NAME: **LMM14 Black Laser Marking Aerosol**

CAS NO: Mixture
CHEMICAL FAMILY: Aerosol 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
Acetone 67-64-1	TWA 1000 ppm; 2400 mg/m ³	TWA 500 ppm; 1188 mg/m ³ Ceiling 750 ppm; 1782 mg/m ³
Ethanol 64-17-5	TWA 1000 ppm; 1900 mg/m ³	TWA 1000 ppm; 1880 mg/m ³
Propane 74-98-6	TWA 1000 ppm; 1800 mg/m ³	TWA 1000 ppm; 1800 mg/m ³
Isobutane 75-28-5	None	TWA 1000 ppm
Molybdenum Trioxide 1313-27-5	TWA Insoluble Mo as dust: 15.0 mg/m ³ Soluble, as Mo: 5.0 mg/m ³	TWA Insoluble Mo, respirable fraction: 3.0 mg/m ³ Soluble Mo, respirable fraction: 0.5 mg/m ³
Crystalline Silica 14808-60-7	TWA respirable dust: 0.05 mg/m ³	TWA respirable fraction: 0.025 mg/m ³

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Mica 12001-26-2	TWA 20 mppcf	TWA respirable fraction: 3 mg/m ³
Iron Oxide 1309-37-1	TWA Fume: 10 mg/m ³	TWA respirable fraction: 5 mg/m ³
Manganese 7439-96-5	Ceiling 5.0 mg/m ³	TWA 0.2 mg/m ³
Chromium (III) 7440-47-3	TWA 0.5 mg/m ³	TWA as Cr (III) 0.5 mg/m ³
Nickel 7440-02-0	TWA 1.0 mg/m ³	TWA total inhalable fraction:1.5 mg/m ³ [Insoluble 0.2 mg/m ³ ; Soluble 0.1 mg/m ³]

3. HAZARDS IDENTIFICATION

PRINCIPLE ROUTES OF EXPOSURE: Inhalation, ingestion and dermal.

The key immediate hazards are:

Extremely flammable aerosol
Contents under pressure
Harmful if inhaled or swallowed
Skin, eye, and respiratory irritant

Effects from Acute Exposure:

EYE CONTACT : May cause eye irritation.

SKIN CONTACT: Skin irritant. May cause an allergic skin reaction.

INHALATION: Respiratory irritant. May cause an allergic respiratory reaction.

INGESTION: Harmful if swallowed.

AGGRAVATED MEDICAL CONDITIONS: Skin, eye and lung.

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.

Nickel and certain nickel compounds: There is sufficient evidence of the carcinogenicity of nickel and nickel compounds (NTP-1985) also, (IARC 1976, vol. 11) states there is sufficient evidence for the carcinogenicity of certain nickel compounds. Nickel subsulfide is carcinogenic in rats by inhalation, producing lung cancer. Nickel compounds (nickel powder, subsulfide, oxide, carbonate, and nickelocene) produced local sarcomas in

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mice, rats and hamsters when given intramuscularly. Inhalation of nickel carbonyl produced a low incidence of lung tumors in rats.

OVEREXPOSURE EFFECTS:

CONTAINS MOLYBDENUM COMPOUND(S) :

Molybdenum compounds can cause eye and respiratory irritation. They can be toxic if swallowed or inhaled based on animal studies where symptoms included anemia, loss of appetite, diarrhea, tiredness, joint pain and changes, liver and kidney damage, and lung effects.

CONTAINS CHROMIUM (III) COMPOUNDS:

Compounds of chromium, in its trivalent state, have no established toxicity. Skin contact has been reported to cause skin irritation. Allergic skin reactions may occur in sensitive individuals, although it is believed that the hexavalent (VI) form of chromium is responsible for most of the reported cases.

CONTAINS MANGANESE COMPOUNDS:

Manganese compounds are not considered toxic by ingestion or skin contact. Chronic overexposure to manganese and its compounds, such as manganese oxide, is potentially hazardous due to effects on the central nervous system. This occupational disease called "manganism" has been identified as occurring at levels well above the current recommended exposure limit.

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 MICA:

Mica is similar to crystalline silica and its hazards from exposure may also be similar. 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 IRON OXIDE (AS REACTED INTO THE PIGMENT):

Long-term inhalation of iron oxide dust may lead to siderosis or iron deposition in the lung. This is not considered to be a hazardous condition.

CONTAINS PROPANE AND ISOBUTANE:

When inhaled, this product is an asphyxiant and may exhibit anesthetic properties at very high concentrations. Initial symptoms of exposure at these concentrations are disorientation, lack of coordination, rapid respiration, headache, and nausea. Continued exposure may result in unconsciousness, coma, and possible death.

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CONTAINS NICKEL COMPOUNDS:

Nickel overexposure can cause allergic skin reactions and asthma. Inhalation can cause effects on the lungs such as bronchitis, emphysema, and impaired function, as well as kidney damage. Swallowing can result in nausea, vomiting, diarrhea and abdominal cramps. Chronic overexposure during nickel production has been shown to cause lung and nasal cavity cancers in workers; these effects are directly related to the degree of exposure. The compounds associated with the production environment included metallic nickel, nickel oxides and nickel sulfides. Workplaces other than those involved with mining, refining, and alloy manufacture have not been studied.

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: None specified.

5. FIRE FIGHTING MEASURES

OSHA FLAMMABILITY CLASS: EXTREMELY FLAMMABLE

FLASH POINT: -156 °F (-104°C)

Lower Explosive Limit: 2.2%

Upper Explosive Limit: 9.5%

EXTINGUISHING MEDIA: Carbon Dioxide, Dry Chemical, Foam or Water Mist

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.

Keep away from heat, sparks and flame.

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This product presents an extreme fire hazard. Liquid very quickly evaporates, even at low temperatures, and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment. This may include self-contained breathing apparatus against the hazardous effects of normal products of combustion or oxygen deficiency. Petroleum gases are heavier than air and travel along the ground or into drains to possible distant ignition sources, causing an explosive flashback.

6. ACCIDENTAL RELEASE MEASURES

SPILL PROCEDURES: Wear appropriate protective equipment. Avoid the generation of dust. Collect material and place in closable container(s) for disposal.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Caution, contents under pressure. Do not puncture, incinerate, crush, or store above 120 degrees fahrenheit. Store in a cool, dry location away from incompatible materials. Heat from sunlight, radiators, stoves, or other sources may cause container to burst.

DIRECTIONS FOR USE: Minimize dust generation during handling. Use only with adequate ventilation.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION: Local exhaust 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.

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

PROTECTIVE GLOVES: Use chemical resistant gloves.

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: To protect clothing, plastic or rubber apron may be used.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Black Liquid

BOILING POINT: Not Available

VAPOR DENSITY (AIR=1): Heavier than air

EVAP. RATE(BUTYL ACETATE=1): Slower than n-Butyl Acetate

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VOC CONTENT, Wt.%: 84%

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 breakdown products may also be formed.

INCOMPATIBILITY

(MATERIALS TO AVOID): None known.

CONDITIONS/HAZARDS TO AVOID: Keep away from heat, sparks and flame. Avoid any source of ignition.

11. TOXICOLOGICAL INFORMATION

No Toxicological data available for this product.

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: CONSUMER COMMODITY

DOT HAZARD CLASS: ORM-D

DOT LABEL(S): NONE

UN/NA NUMBER: ID8000

PACKING GROUP: NONE

15. REGULATORY INFORMATION

SARA SECTION 302: None Found

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SARA (311, 312) HAZARD CLASS: ACUTE HEALTH HAZARD
CHRONIC HEALTH HAZARD
FIRE 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.

4%	Manganese compounds	< 1%	Metal as Mn
4%	Nickel compounds	< 1%	Metal as Ni
4%	Chromium (III) compounds	< 1%	Metal as Cr
28%	Molybdenum Trioxide		

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.

CANADIAN WHMIS: Class A, Class B5, Class D2A

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

CALIFORNIA PROPOSITION 65: WARNING - This product contains chemicals known to the State of California to cause cancer.

16. OTHER INFORMATION

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

LABEL INFORMATION: DANGER!

Extremely flammable.

Contents under pressure.

Harmful if inhaled or swallowed.

Skin, eye, and respiratory irritant.

May cause allergic skin reaction and asthma.

Do not breathe dust.

Inhalation may cause lung damage and cancer.

Use only in well ventilated area.

Wash hands after handling.

Keep away from food.

KEEP OUT OF REACH OF CHILDREN.

FOR INDUSTRIAL USE ONLY.

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.

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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 ***