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Material Safety Data Sheet GRAFMETAL Ceramic Rinseable aerosol for laser marking of metals

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers: GRAFMETAL Ceramic Rinseable aerosol for laser marking of metals

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product application: Marking metals with CO₂ lasers

1.3 Details of the supplier of the safety data sheet

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1.4 Emergency telephone

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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition: mixture

Classification according to Regulation (EC) No 1272/2008:

H222 Extremely flammable aerosol. H225 Highly flammable liquid and vapour. H229 Pressurized container: may burst if heated. H240 Heating may cause an explosion. H319 Causes serious eye irritation. H335 May cause respiratory irritation. H351 Suspected of causing cancer. H360D May damage the unborn child.

2.2. Label elements:

Pictogram:



Signal word: danger

Hazard statements: H222 Extremely flammable aerosol. H225 Highly flammable liquid and vapour. H229 Pressurized container: may burst if heated. H240 Heating may cause an explosion. H319 Causes serious eye irritation. H335 May cause respiratory irritation. H351 Suspected of causing cancer. H360D May damage the unborn child.

Precautionary statements: P102 Keep out of reach of children. P103 Read label before use. P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P211 Do not spray on an open flame or other ignition source. P233 Keep container tightly closed. P251 Do not pierce or burn, even after use. P262 Do not get in eyes, on skin, or on clothing. P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective

gloves/protective clothing/eye protection/face protection. P410 Protect from sunlight. P412 Do not expose to temperatures exceeding 50 °C/122 °F. P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. P305+P351+P338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. P312 Call a POISON CENTER or doctor/physician if you feel unwell. P337+P313 If eye irritation persists: Get medical advice/attention.

2.3. Other hazards:

No information about meeting PBT or vPvB criteria according to the 12th appendix of the REACH regulation.

SECTION 3: Composition/information on ingredients

Dimethyl ether C₂H₆O (CAS: 115-10-6), maximum content 70%; Ethanol C₂H₅OH (CAS: 64-17-5), maximum content 50%; Molybdenum trioxide MoO₃ (CAS: 1313-27-5), maximum content 50%. H222 Extremely flammable aerosol. H225 Highly flammable liquid and vapour. H229 Pressurized container: may burst if heated. H240 Heating may cause an explosion. H319 Causes serious eye irritation. H335 May cause respiratory irritation. H351 Suspected of causing cancer. H360D May damage the unborn child.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

One shall not take any actions, which could pose a risk for anyone. If it is suspected that vapours are still present, then the rescuer should put on an appropriate mask or breathing apparatus. It is necessary to accurately rinse contaminated clothes with water before taking them off or put on protective gloves.

If inhaled:

Transport the person to fresh air. If vapour may be still present, then the rescuer should put on means of protection of respiratory tract. If the exposed person do not breathe or has problems with breathing, a qualified personnel should perform artificial respiration or deliver oxygen. In case of losing consciousness, put the person in a safe position and call medical help.

If swallowed:

Induce vomiting and get medical help immediately. Flush the mouth with water and then drink a moderate amount of water or milk. Never give anything by mouth to an unconscious person. Place the victim in a safe position, cover and keep warm, observe, provide medical care.

In case of skin contact:

Rinse with water.

In case of eye contact:

Remove contact lenses and flush eyes for at least 10 minutes. Seek medical attention from an ophthalmologist if symptoms are worrisome.

4.2 Most important symptoms and effects, both acute and delayed:

Eye contact: possible irritation, burning, redness.

Contact following inhalation: irritation of the nose, throat and respiratory tract, difficulty breathing, coughing; prolonged or repeated exposure is suspected to lead to cancer.

Contact following ingestion: prolonged or repeated exposure is suspected to lead to tumors.

Skin contact: prolonged contact may cause dryness; prolonged or repeated exposure is suspected to lead to cancer.

4.3 Indication of any immediate medical attention and special treatment needed:

In case of any worrisome symptoms, immediately arrange medical help, show the product packaging or label.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Pressurized container: heating may cause explosion. Vapours form explosive mixtures with air. The vapours are denser than air and may accumulate by the earth surface and in lower parts of rooms. Containers exposed to fire or high temperature may explode.

5.1 Extinguishing media

Suitable extinguishing media: carbon dioxide, extinguishing powder, extinguishing foam, use extinguishing medium suitable for the surrounding fire

Unsuitable extinguishing media: stream of water, sprayed water may be used only for cooling the containers at risk of explosion.

5.2 Special hazards arising from the substance or mixture

None

5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus and protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

It is recommended to use gloves, clothing and protective goggles, and if necessary, respiratory protection.

6.2 Environmental precautions:

Stop the leak, inform appropriate authorities, do not let the product to leak to the sanitation system, water or soil.

6.3 Methods and materials for containment and cleaning up:

Big amounts of the product should be walled and collected to containers. Contaminated surface should be rinsed with water.

SECTION 7: Handling and storage

7.1 Precautions for safe handling:

Wear protective clothing, protective gloves and safety glasses. Do not eat nor drink in the vicinity of the mixture. Make sure that aerosols or vapours do not form mixtures with concentrations above the explosive limits. Do not inhale the vapours or sprayed mist. Avoid contact with skin and eyes. Container under pressure. Do not expose to sunlight and temperature above 50°C. Emptied container should not be destroyed or placed in a fire. Do not spray over open flame or on hot objects. Do not store the product in vicinity of ignition sources. Prevent occurrence of electrostatic discharges, which may cause vapour ignition. Electric devices should be protected against explosion.

7.2 Conditions for safe storage, including any incompatibilities:

Keep in closed containers at room temperature far away from sources of heat, ignition or electric discharges. Avoid exposing the containers to sunlight.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Recommccupational exposure limits:

Dimethyl ether: TWA = 1000 mg/m³. Acetone: TWA = 600 mg/m³; TWA = 1800 mg/m³, Ethanol: TWA = 1900 mg/m³.

Individual protective measures:

Wash hands before and after working with the product.

8.2 Exposure controls

Hand protection:

Wear protective gloves, which are impermeable for liquids.

Eye protection:

Wear safety glasses for protection against splashes. While using the product during laser processing of metals it is necessary to close the device cover, so the laser beam will not be reflected toward any person. If the laser cover is not available for the particular device, then it is necessary to build one of polycarbonate or glass.

Skin protection:

Wear protective clothing.

Respiratory tract protection:

Ensure adequate ventilation both during application and during laser processing and rinsing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance: aerosol

Colour: grey

pH: not applicable

Odour: alcoholic

Boiling point [°C]: -40

Flow temperature [°C]: not applicable

Melting point [°C]: -114

Flash point [°C]: -60

Flash point [°C]: -60

Explosive properties: lower explosive limit 1.4% vol., upper explosive limit 10.8% vol.

Vapour pressure: >3000 hPa (at 20°C)

Viscosity: no data

Density at 20°C [g/cm³]: 0.9±0.1

Solubility:

in water: partially miscible

other solvents: miscible with alcohols

SECTION 10: Stability and reactivity

10.1 Stability:

The product is stable at recommended storage conditions

10.2 Reactivity

A risk of ignition, the vapours may form explosive mixtures with air.

10.3 Incompatible materials:

Strong oxidisers and reducers, anhydrides, peroxides, concentrated mineral acids.

10.4 Conditions to avoid:

Exposure to high temperatures and sources of ignition. Avoid exposure of eyes and skin to the product. Do not inhale vapours.

10.5 Hazardous decomposition products:

Under normal conditions, decomposition does not occur. As a result of burning, carbon dioxide and molybdenum trioxide dust may form.

SECTION 11: Toxicological information

11.1. Information on toxicological effects:

Acute toxicity:

Ethanol, LD₅₀ = 11 mg/kg (rat, ingestion)

Ethanol, LC₅₀ = 120 mg/l/4 h (rat, inhalation)

Dimethyl ether, LC₅₀ = 308 mg/l/4 h (rat, inhalation)

Acetone, LC₅₀ = 76 mg/l/4 h (rat, inhalation)

Health risk:

No data

Inhalation:

The product is not volatile; when used with lasers gas vapours and soot suspension in the air may occur

Skin:

Is not dangerous

Eyes:

May cause mild eye irritation

Swallowing:

The product swallowed in very big quantities may cause mild threat to health.

SECTION 12: Ecological information

12.1 Toxicity:

Acute toxicity:

LD₅₀ = 5 mg/kg (rat, ingestion)

LC₅₀ = 60 mg/l/4 h (rat, inhalation)

12.2 Mobility in soil:

No data available

12.3 Bioaccumulative potential:

No data available

12.4 Biodegradability:

No data available

12.5 Results of PBT and vPvB assessment:

Not applicable.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Limit waste of the product, reuse when possible, and do not throw away. Do not flush larger amounts of raw product down the drain. Do not incinerate used packaging. Small amounts can be flushed with very large amounts of water.

Waste treatment:

Waste classification (EWC):

08 01 12 Waste paint and varnish other than those mentioned in 08 01 11

Disposal method:

The product retains its properties for a long time, making it necessary to consider the consumption of the product before liquidation. If the product has dried out, pure methanol can be added to it.

Container:

Used containers should be recycled.

SECTION 14: Transport information

The mixture is included in international regulation concerning transport of dangerous materials (IMDG, IATA, ADR/RID). The product is classified as dangerous in transport.

UN1950, Aerosols, 2.1. Limited quantity. Shipping papers are not required for limited quantities unless transported by air or vessel – each package must be marked with Limited Quantity Mark.

IMDG description: UN1950, Aerosols, 2.1, LTD QTY

ICAO description: UN1950, Aerosols, flammable, 2.1

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)

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Observe work restrictions in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

SECTION 16: Other information

Use in accordance to the User manual provided by the manufacturer.

The product is available for professional use only, the manufacturer is not accountable for its incorrect use.

Manufacturer:

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