# SAFETY DATA SHEET

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

### 1.1 Product identifiers

Product name : Methylmagnesium chloride solution

Brand : Freehoo

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Identified uses : Laboratory chemicals, Manufacture of substances

### 1.3 Details of the supplier of the safety data sheet

Company : Nanjing Freehoo Chemical Technology Co., Ltd
Room 1404, 625 Geguan Road,
Dachang Street, Liuhe District,
211500,Nanjing City,
Jiangsu, China

Telephone : +86-25-57798086
Fax : +86-25-57798086
E-mail address : freehoochem@126.com

### 1.4 Emergency telephone number

Emergency Phone # : +86-25-57798086

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Classification according to Regulation (EC) No 1272/2008**
Flammable liquids (Category 2), H225
Substances and mixtures, which in contact with water, emit flammable gases (Category 1), H260
Skin corrosion (Category 1B), H314
Carcinogenicity (Category 2), H351
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

**Classification according to EU Directives 67/548/EEC or 1999/45/EC**

| | | |
|---|---|---|
| F | Highly flammable | R11 |
| C | Corrosive | R34 |
| Xi | Irritant | R37 |
| | | R19, R14 |

For the full text of the R-phrases mentioned in this Section, see Section 16.

### 2.2 Label elements

**Labelling according Regulation (EC) No 1272/2008**
Pictogram

| | |
|---|---|
| Signal word | Danger |

Hazard statement(s)

| | |
|---|---|
| H225 | Highly flammable liquid and vapour. |
| H260 | In contact with water releases flammable gases which may ignite spontaneously. |
| H314 | Causes severe skin burns and eye damage. |
| H335 | May cause respiratory irritation. |
| H351 | Suspected of causing cancer. |

Precautionary statement(s)

| | |
|---|---|
| P210 | Keep away from heat/sparks/open flames/hot surfaces. - No smoking. |
| P223 | Keep away from any possible contact with water, because of violent reaction and possible flash fire. |
| P231 + P232 | Handle under inert gas. Protect from moisture. |
| P261 | Avoid breathing vapours. |
| P370 + P378 | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction. |
| P422 | Store contents under inert gas. |

Supplemental Hazard information (EU)

| | |
|---|---|
| EUH014 | Reacts violently with water. |
| EUH019 | May form explosive peroxides. |

**According to European Directive 67/548/EEC as amended.**

Hazard symbol(s)

F Highly flammable
C Corrosive

R-phrase(s)

| | |
|---|---|
| R11 | Highly flammable. |
| R14 | Reacts violently with water. |
| R19 | May form explosive peroxides. |
| R34 | Causes burns. |
| R37 | Irritating to respiratory system. |

S-phrase(s)

| | |
|---|---|
| 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. |
| S36/37/39 | Wear suitable protective clothing, gloves and eye/face protection. |
| S45 | In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). |

**2.3 Other hazards** - none

## SECTION 3: Composition/information on ingredients

**3.2 Mixtures**

| | | |
|---|---|---|
| Formula | : | CH3ClMg |
| Molecular Weight | : | 74,79 g/mol |

**Hazardous ingredients according to Regulation (EC) No 1272/2008**

| Component | | Classification | Concentration |
|---|---|---|---|
| **Tetrahydrofuran** | | | |
| CAS-No. | 109-99-9 | Flam. Liq. 2; Eye Irrit. 2; Carc. 2; STOT SE 3; H225, H319, H335, H351, EUH019 | <= 100 % |
| EC-No. | 203-726-8 | | |
| Index-No. | 603-025-00-0 | | |
| Registration number | 01-2119444314-46-XXXX | | |
| **Methylmagnesium chloride** | | | |
| CAS-No. | 676-58-4 | Pyr. Sol. 1; Water-react. 1; Skin Corr. 1B; H250, H260, | 25 - 50 % |
| EC-No. | 211-629-7 | | |

| | | | |
|---|---|---|---|
| Index-No. | 012-003-00-4 | H314, EUH014 | |

**Hazardous ingredients according to Directive 1999/45/EC**

| Component | | Classification | Concentration |
|---|---|---|---|
| **Tetrahydrofuran** | | | |
| CAS-No. | 109-99-9 | F, Xn, Carc.Cat.3, R11 - R19 - R40 - R36/37 | <= 100 % |
| EC-No. | 203-726-8 | | |
| Index-No. | 603-025-00-0 | | |
| Registration number | 01-2119444314-46-XXXX | | |
| **Methylmagnesium chloride** | | | |
| CAS-No. | 676-58-4 | F, C, R14 - R17 - R34 | 25 - 50 % |
| EC-No. | 211-629-7 | | |
| Index-No. | 012-003-00-4 | | |

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

**General advice**
Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed
no data available

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Dry powder

### 5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen chloride gas, Magnesium oxide

### 5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

### 5.4 Further information
no data available

## SECTION 6: Accidental release measures

**6.1 Personal precautions, protective equipment and emergency procedures**
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

**6.2 Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**6.3 Methods and materials for containment and cleaning up**
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water.

**6.4 Reference to other sections**
For disposal see section 13.

## SECTION 7: Handling and storage

**7.1 Precautions for safe handling**
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities**
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Never allow product to get in contact with water during storage.

Air and moisture sensitive. hygroscopic Store under inert gas.

**7.3 Specific end use(s)**
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## SECTION 8: Exposure controls/personal protection

**8.1 Control parameters**

**Components with workplace control parameters**

**8.2 Exposure controls**

**Appropriate engineering controls**
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment**

**Eye/face protection**
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Body Protection**
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | | |
|---|---|---|
| a) | Appearance | Form: cloudy, liquid<br>Colour: grey |
| b) | Odour | no data available |
| c) | Odour Threshold | no data available |
| d) | pH | no data available |
| e) | Melting point/freezing point | no data available |
| f) | Initial boiling point and boiling range | no data available |
| g) | Flash point | -17 °C - closed cup |
| h) | Evapouration rate | no data available |
| i) | Flammability (solid, gas) | no data available |
| j) | Upper/lower flammability or explosive limits | Upper explosion limit: 11,8 %(V)<br>Lower explosion limit: 2,3 %(V) |
| k) | Vapour pressure | no data available |
| l) | Vapour density | no data available |
| m) | Relative density | 1,010 g/cm3 |
| n) | Water solubility | no data available |
| o) | Partition coefficient: n-octanol/water | no data available |
| p) | Auto-ignition temperature | The substance or mixture is not classified as pyrophoric. |
| q) | Decomposition temperature | no data available |
| r) | Viscosity | no data available |
| s) | Explosive properties | no data available |
| t) | Oxidizing properties | no data available |

### 9.2 Other safety information
no data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity
no data available

### 10.2 Chemical stability
Stable under recommended storage conditions.

**10.3 Possibility of hazardous reactions**
Reacts violently with water.

**10.4 Conditions to avoid**
Do not allow water to enter container because of violent reaction.
Heat, flames and sparks. Extremes of temperature and direct sunlight. Exposure to moisture.

**10.5 Incompatible materials**
Water

**10.6 Hazardous decomposition products**
Other decomposition products - no data available
In the event of fire: see section 5

## SECTION 11: Toxicological information

**11.1 Information on toxicological effects**

**Acute toxicity**
no data available

**Skin corrosion/irritation**
no data available

**Serious eye damage/eye irritation**
no data available

**Respiratory or skin sensitisation**
no data available

**Germ cell mutagenicity**
no data available

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Reproductive toxicity**
no data available

**Specific target organ toxicity - single exposure**
no data available

**Specific target organ toxicity - repeated exposure**
no data available

**Aspiration hazard**
no data available

**Additional Information**
RTECS: Not available

spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting

## SECTION 12: Ecological information

**12.1 Toxicity**
no data available

**12.2 Persistence and degradability**
no data available

**12.3 Bioaccumulative potential**
no data available

**12.4 Mobility in soil**
no data available

**12.5 Results of PBT and vPvB assessment**
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Other adverse effects**
no data available

## SECTION 13: Disposal considerations

**13.1 Waste treatment methods**

**Product**
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**
Dispose of as unused product.

## SECTION 14: Transport information

**14.1 UN number**

| | | |
|---|---|---|
| ADR/RID: 3399 | IMDG: 3399 | IATA: 3399 |

**14.2 UN proper shipping name**

ADR/RID: ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE (Tetrahydrofuran, Methylmagnesium chloride)
IMDG: ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE (Tetrahydrofuran, Methylmagnesium chloride)
IATA: Organometallic substance, liquid, water-reactive, flammable (Tetrahydrofuran, Methylmagnesium chloride)

**14.3 Transport hazard class(es)**

| | | |
|---|---|---|
| ADR/RID: 4.3 (3) | IMDG: 4.3 (3) | IATA: 4.3 (3) |

**14.4 Packaging group**

| | | |
|---|---|---|
| ADR/RID: II | IMDG: II | IATA: II |

**14.5 Environmental hazards**

| | | |
|---|---|---|
| ADR/RID: no | IMDG Marine pollutant: no | IATA: no |

**14.6 Special precautions for user**
no data available

## SECTION 15: Regulatory information

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

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

no data available

**15.2 Chemical Safety Assessment**
For this product a chemical safety assessment was not carried out

## SECTION 16: Other information

**Full text of H-Statements referred to under sections 2 and 3.**

| | |
|---|---|
| Carc. | Carcinogenicity |
| EUH014 | Reacts violently with water. |
| EUH019 | May form explosive peroxides. |
| Eye Irrit. | Eye irritation |
| Flam. Liq. | Flammable liquids |
| H225 | Highly flammable liquid and vapour. |
| H250 | Catches fire spontaneously if exposed to air. |
| H260 | In contact with water releases flammable gases which may ignite spontaneously. |
| H314 | Causes severe skin burns and eye damage. |

| | |
|---|---|
| H319 | Causes serious eye irritation. |
| H335 | May cause respiratory irritation. |
| H351 | Suspected of causing cancer. |
| Pyr. Sol. | Pyrophoric solids |
| Skin Corr. | Skin corrosion |
| STOT SE | Specific target organ toxicity - single exposure |
| Water-react. | Substances, which in contact with water, emit flammable gases |

**Full text of R-phrases referred to under sections 2 and 3**

| | |
|---|---|
| C | Corrosive |
| F | Highly flammable |
| R11 | Highly flammable. |
| R14 | Reacts violently with water. |
| R17 | Spontaneously flammable in air. |
| R19 | May form explosive peroxides. |
| R34 | Causes burns. |
| R36/37 | Irritating to eyes and respiratory system. |
| R37 | Irritating to respiratory system. |
| R40 | Limited evidence of a carcinogenic effect. |
| Xn | Harmful |

**Further information**



The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Nanjing Freehoo Chemical Technology Co., Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.

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