

Safety Data Sheet according to GB/T 16483-2008 and GB/T 17519-2013 - China

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

1.1 Product identifier

Product name : HEMPADUR ZINC 15349

Product identity : 1534919830

Product type : epoxy zinc primer (base for multi-component product)

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

Field of application : metal industry, ships and shipyards.

Ready-for-use mixture : 15341 = 15349 3 vol. / 95740 1 vol. 15342 = 15349 3 vol. / 95570 1 vol.

Identified uses : Industrial applications, Used by spraying.

1.3 Details of the supplier of the safety data sheet

Company details : **HEMPEL (CHINA) LTD.**
16th Floor, Millennium City 3,
370 Kwun Tong Road, Kwun Tong,
Kowloon, Hong Kong
Tel: +852 2857 7663
Fax: +852 2517 6311
hempel@hempel.com

1.4 Emergency telephone number

Shang Hai center of toxic chemicals information & consultation
+86 400-6267-911

Manufacturer : **HEMPEL (KUNSHAN) COATINGS LTD.**
No.1 Haihong Road, Zhangpu, Kunshan, Jiangsu, China
Postal Code: 215321
Tel: +86 512 57440886 Fax: +86 512 57440389

HEMPEL (YANTAI) COATINGS LTD.
No.12 Zhujiang Road, Economic & Tech.
Development Zone, Yantai, Shandong, China
Postal Code: 264006
Tel: 86 535 6936699 Fax: +86 535 6936688

HEMPEL (GUANGZHOU) COATINGS LTD.
Canghai Si Road No.3, Yonghe District, Guangzhou
Economic Technology Development
District, Guangdong, China
Postal Code: 511356
Tel: +86 20 32812888 Fax: +86 20 32226478

Date of issue : 26 April 2018

Date of previous issue : 14 July 2017.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

GHS Classification

FLAMMABLE LIQUIDS - Category 3

SKIN CORROSION/IRRITATION - Category 2

SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1

SKIN SENSITIZATION - Category 1

CARCINOGENICITY - Category 2

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

AQUATIC HAZARD (ACUTE) - Category 1

AQUATIC HAZARD (LONG-TERM) - Category 1

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



SECTION 2: Hazards identification

| | |
|----------------------------|--|
| Signal word : | Danger |
| Hazard statements : | H226 - Flammable liquid and vapor. H318 - Causes serious eye damage. H315 - Causes skin irritation. H317 - May cause an allergic skin reaction. H351 - Suspected of causing cancer. H373 - May cause damage to organs through prolonged or repeated exposure. H410 - Very toxic to aquatic life with long lasting effects. |
| Precautionary statements : | |
| Prevention : | Obtain special instructions before use. Avoid breathing vapors, spray or mists. Wear protective gloves/ protective clothing/eye protection/face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| Response : | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor. |
| Storage : | Keep cool. |
| Hazardous ingredients : | zinc powder - zinc dust (stabilized) middle molecular epoxy resin MMW 700-1200 xylene n-butanol ethylbenzene |

2.3 Other hazards

Other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

| Product/ingredient name | Identifiers | % | GHS Classification |
|---|-------------|-----------|---|
| zinc powder - zinc dust (stabilized) | 7440-66-6 | ≥50 - ≤75 | AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 1 |
| middle molecular epoxy resin MMW 700-1200 | 25068-38-6 | ≥10 - ≤25 | SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 2 |
| xylene | 1330-20-7 | ≥5 - ≤10 | FLAMMABLE LIQUIDS - Category 3 SKIN CORROSION/IRRITATION - Category 2 AQUATIC HAZARD (ACUTE) - Category 2 |
| n-butanol | 71-36-3 | ≥3 - ≤5 | FLAMMABLE LIQUIDS - Category 3 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 |
| zinc oxide | 1314-13-2 | ≥3 - ≤5 | AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 1 |
| solvent naphtha (petroleum), light arom. | 64742-95-6 | ≥1 - ≤3 | FLAMMABLE LIQUIDS - Category 3 SKIN CORROSION/IRRITATION - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 |
| ethylbenzene | 100-41-4 | ≥1 - ≤3 | ASPIRATION HAZARD - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 2 FLAMMABLE LIQUIDS - Category 2 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 |
| 1,2,4-trimethylbenzene | 95-63-6 | ≥1 - ≤3 | ASPIRATION HAZARD - Category 1 AQUATIC HAZARD (ACUTE) - Category 2 FLAMMABLE LIQUIDS - Category 3 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 AQUATIC HAZARD (ACUTE) - Category 2 AQUATIC HAZARD (LONG-TERM) - Category 2 |

SECTION 3: Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

| | |
|------------------------------|---|
| General : | In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. |
| Eye contact : | Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Seek immediate medical attention. |
| Inhalation : | Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Give nothing by mouth. If unconscious, place in recovery position and get medical attention immediately. |
| Skin contact : | Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners. |
| Ingestion : | If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do not induce vomiting unless directed to do so by medical personnel. Lower the head so that vomit will not re-enter the mouth and throat. |
| Protection of first-aiders : | No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. |

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

| | |
|----------------|--|
| Eye contact : | Causes serious eye damage. |
| Inhalation : | No known significant effects or critical hazards. |
| Skin contact : | Causes skin irritation. May cause an allergic skin reaction. |
| Ingestion : | No known significant effects or critical hazards. |

Over-exposure signs/symptoms

| | |
|----------------|--|
| Eye contact : | Adverse symptoms may include the following: pain watering redness |
| Inhalation : | No specific data. |
| Skin contact : | Adverse symptoms may include the following: pain or irritation redness blistering may occur |
| Ingestion : | Adverse symptoms may include the following: stomach pains |

4.3 Indication of any immediate medical attention and special treatment needed

| | |
|-----------------------|---|
| Notes to physician : | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| Specific treatments : | No specific treatment. |

SECTION 5: Firefighting measures

5.1 Extinguishing media

| | |
|-----------------------|---|
| Extinguishing media : | Recommended: Approved Class D extinguisher or smother with dry sand, dry clay or dry ground limestone. NOT TO BE USED: WATER. Risk of formation of very flammable and explosive vapours. |
|-----------------------|---|

5.2 Special hazards arising from the substance or mixture

| | |
|---|--|
| Hazards from the substance or mixture : | Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. |
|---|--|

SECTION 5: Firefighting measures

Hazardous combustion products : Decomposition products may include the following materials: carbon oxides halogenated compounds
metal oxide/oxides

5.3 Advice for firefighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard. Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid all direct contact with the spilled material. Do not use water. Violent reaction may occur. Exclude sources of ignition and be aware of explosion hazard. Ventilate the area. Avoid breathing vapor or mist. Refer to protective measures listed in sections 7 and 8. No action shall be taken involving any personal risk or without suitable training. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

6.2 Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

6.3 Methods and materials for containment and cleaning up

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air. Prevent the creation of flammable or explosive concentrations of vapors in air and avoid vapor concentrations higher than the occupational exposure limits. In addition, the product should be used only in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. No sparking tools should be used. Contains epoxy constituents. Avoid all possible skin contact with epoxy and amine containing products, they may cause allergic reactions. Open with care, danger of overpressure.

Avoid inhalation of vapour, dust and spray mist. Avoid contact with skin and eyes. Eating, drinking and smoking should be prohibited in area where this material is handled, stored and processed. Appropriate personal protective equipment: see Section 8. Always keep in containers made from the same material as the original one.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations for flammable liquids. Store in a cool, well-ventilated area away from incompatible materials and ignition sources. Keep out of the reach of children. Keep away from: Oxidizing agents, strong alkalis, strong acids as well as of amines, alcohols and water. No smoking. Prevent unauthorized access. Containers that are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

See separate Product Data Sheet for recommendations or industrial sector specific solutions.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

| Product/ingredient name | Exposure limit values |
|---|---|
| xylene n-butanol solvent naphtha (petroleum), light arom. ethylbenzene 1,2,4-trimethylbenzene | GBZ 2.1 (China, 4/2007). PC-TWA: 50 mg/m ³ 8 hours. PC-STEL: 100 mg/m ³ 15 minutes. GBZ 2.1 (China, 4/2007). PC-TWA: 100 mg/m ³ 8 hours. GBZ 2.1 (China). TWA Tentative: 25 ppm 8 hours. GBZ 2.1 (China, 4/2007). PC-STEL: 150 mg/m ³ 15 minutes. PC-TWA: 100 mg/m ³ 8 hours. GBZ 2.1 (China). TWA Tentativ: 20 ppm 8 hours. |

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

8.2 Exposure controls

Appropriate engineering controls

Arrange sufficient ventilation by local exhaust ventilation and good general ventilation to keep the airborne concentrations of vapors or dust lowest possible and below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Individual protection measures

General :

Gloves must be worn for all work that may result in soiling. Apron/coveralls/protective clothing must be worn when soiling is so great that regular work clothes do not adequately protect skin against contact with the product. Safety eyewear should be used when there is a likelihood of exposure.



Hygiene measures :

Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using lavatory, and at the end of day.

Eye/face protection :

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Hand protection :

Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training. The quality of the chemical-resistant protective gloves must be chosen as a function of the specific workplace concentrations and quantity of hazardous substances.

Since the actual work situation is unknown. Supplier of gloves should be contacted in order to find the appropriate type. Below listed glove(s) should be regarded as generic advice:

Recommended: Silver Shield / Barrier / 4H gloves, polyvinyl alcohol (PVA), Viton®

May be used: nitrile rubber

Short term exposure: neoprene rubber, butyl rubber, natural rubber (latex), polyvinyl chloride (PVC)

Body protection :

Personal protective equipment for the body should be selected based on the task being performed and the risks involved handling this product.

Wear suitable protective clothing. Always wear protective clothing when spraying.

SECTION 8: Exposure controls/personal protection

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If working areas have insufficient ventilation: When the product is applied by means that will not generate an aerosol such as, brush or roller wear half or totally covering mask equipped with gas filter of type A, when grinding use particle filter of type P. Be sure to use an approved/certified respirator or equivalent.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|--|---|
| Physical state : | Liquid. |
| Color : | Red-grey |
| Odor : | Solvent-like |
| pH : | Testing not relevant or not possible due to nature of the product. |
| Melting point/freezing point : | 419.85°C This is based on data for the following ingredient: Zinc |
| Boiling point/boiling range : | Testing not relevant or not possible due to nature of the product. |
| Flash point : | Closed cup: 30°C (86°F) |
| Evaporation rate : | Testing not relevant or not possible due to nature of the product. |
| Flammability : | Highly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat. Flammable in the presence of the following materials or conditions: oxidizing materials. Slightly flammable in the presence of the following materials or conditions: reducing materials. |
| Lower and upper explosive (flammable) limits : | 0.8 - 11.3 vol % |
| Vapor pressure : | Testing not relevant or not possible due to nature of the product. |
| Vapor density : | Testing not relevant or not possible due to nature of the product. |
| Specific gravity : | 2.114 g/cm³ |
| Solubility(ies) : | Partially soluble in the following materials: cold water and hot water. |
| Partition coefficient (LogKow) : | Testing not relevant or not possible due to nature of the product. |
| Auto-ignition temperature : | Lowest known value: 355°C (671°F) (n-butanol). |
| Decomposition temperature : | Testing not relevant or not possible due to nature of the product. |
| Viscosity : | Testing not relevant or not possible due to nature of the product. |
| Explosive properties : | Explosive in the presence of the following materials or conditions: open flames, sparks and static discharge and heat. Slightly explosive in the presence of the following materials or conditions: moisture. |
| Oxidizing properties : | Testing not relevant or not possible due to nature of the product. |

9.2 Other information

| | |
|---------------------------|------------------------------|
| Solvent(s) % by weight : | Weighted average: 20 % |
| Water % by weight : | Weighted average: 0 % |
| VOC content : | 30.9 g/l |
| VOC content - Hong Kong : | 30.9 g/l |
| TOC Content : | Weighted average: 355 g/l |
| Solvent Gas : | Weighted average: 0.103 m³/l |

SECTION 10: Stability and reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

The product is stable.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

10.5 Incompatible materials

Highly reactive or incompatible with the following materials: oxidizing materials and acids.

Reactive or incompatible with the following materials: reducing materials, organic materials, alkalis and moisture.

10.6 Hazardous decomposition products

When exposed to high temperatures (i.e. in case of fire) harmful decomposition products may be formed:

Decomposition products may include the following materials: carbon oxides halogenated compounds metal oxide/oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Exposure to component solvent vapor concentrations may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Solvents may cause some of the above effects by absorption through the skin. Symptoms and signs include headaches, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. If splashed in the eyes, the liquid may cause irritation and reversible damage. Accidental swallowing may cause stomach pain. Chemical lung inflammation may occur if the product is taken into the lungs via vomiting.

Epoxy and amine containing products can cause skin disorders such as allergic eczema. The allergy may arise after only a short exposure period.

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|--|---------------------------------|---------|-------------------------|----------|
| Zinc powder - zinc dust (stabilized) | LC50 Inhalation Dusts and mists | Rat | 5.41 mg/l | 4 hours |
| | LD50 Oral | Rat | >2000 mg/kg | - |
| | LD50 Dermal | Rat | >2000 mg/kg | - |
| middle molecular epoxy resin MMW 700-1200 xylene | LC50 Inhalation Gas. | Rat | 5000 ppm | 4 hours |
| | LC50 Inhalation Vapor | Rat | 6350 ppm | 4 hours |
| | LD50 Dermal | Rabbit | >4200 mg/kg | - |
| solvent naphtha (petroleum), light arom. | LD50 Oral | Rat | 3523 mg/kg | - |
| | LC50 Inhalation Vapor | Rat | 6193 mg/m ³ | 4 hours |
| | LD50 Dermal | Rabbit | 3160 mg/kg | - |
| n-butanol | LD50 Oral | Rat | 8400 mg/kg | - |
| | LC50 Inhalation Vapor | Rat | 24000 mg/m ³ | 4 hours |
| | LD50 Dermal | Rabbit | 3400 mg/kg | - |
| zinc oxide | LD50 Oral | Rat | 790 mg/kg | - |
| | LC50 Inhalation Dusts and mists | Rat | >5.7 mg/l | 4 hours |
| | LD50 Dermal | Rat | >2000 mg/kg | - |
| ethylbenzene | LD50 Oral | Rat | >5000 mg/kg | - |
| | LD50 Dermal | Rabbit | >5000 mg/kg | - |
| | LD50 Oral | Rat | 3500 mg/kg | - |

Acute toxicity estimates

| Route | ATE value |
|---------------------|---------------|
| Oral | 32287.4 mg/kg |
| Dermal | 17930.1 mg/kg |
| Inhalation (gases) | 81500.6 ppm |
| Inhalation (vapors) | 816.8 mg/l |

Irritation/Corrosion

SECTION 11: Toxicological information

| Product/ingredient name | Result | Species | Score | Exposure |
|--|-----------------------------|---------|-------|--------------------------------------|
| zinc powder - zinc dust (stabilized) | Skin - Mild irritant | Human | - | 72 hours 300 Micrograms Intermittent |
| xylene | Eyes - Severe irritant | Rabbit | - | 24 hours 5 milligrams |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 500 milligrams |
| solvent naphtha (petroleum), light arom. | Eyes - Mild irritant | Rabbit | - | 24 hours 100 microliters |
| n-butanol | Eyes - Severe irritant | Rabbit | - | 24 hours 2 milligrams |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 20 milligrams |
| zinc oxide | Eyes - Mild irritant | Rabbit | - | 24 hours 500 milligrams |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 milligrams |
| ethylbenzene | Skin - Mild irritant | Rabbit | - | 24 hours 15 milligrams |
| | Respiratory - Mild irritant | Rabbit | - | - |
| | Eyes - Mild irritant | Rabbit | - | - |

Sensitizer

| Product/ingredient name | Route of exposure | Species | Result |
|---|-------------------|------------|-------------|
| middle molecular epoxy resin MMW 700-1200 | skin | Guinea pig | Sensitizing |

Specific target organ toxicity (single exposure)

| Product/ingredient name | Category | Route of exposure | Target organs |
|--|------------|-------------------|---|
| n-butanol | Category 3 | Not applicable. | Respiratory tract irritation and Narcotic effects |
| solvent naphtha (petroleum), light arom. | Category 3 | Not applicable. | Respiratory tract irritation and Narcotic effects |
| 1,2,4-trimethylbenzene | Category 3 | Not applicable. | Respiratory tract irritation |

Specific target organ toxicity (repeated exposure)

| Product/ingredient name | Category | Route of exposure | Target organs |
|-------------------------|------------|-------------------|----------------|
| ethylbenzene | Category 2 | Not determined | hearing organs |

Aspiration hazard

| Product/ingredient name | Result |
|--|--|
| solvent naphtha (petroleum), light arom. ethylbenzene | ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 |

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential chronic health effects

Sensitization : Contains middle molecular epoxy resin MMW 700-1200. May produce an allergic reaction.

Other information : No additional known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Do not allow to enter drains or watercourses. Very toxic to aquatic life with long lasting effects.

| Product/ingredient name | Result | Species | Exposure |
|---|--|---|----------------------------------|
| zinc powder - zinc dust (stabilized) | Acute EC50 0.3 mg/l Marine water Acute EC50 0.354 mg/l Fresh water Acute LC50 0.238 - 0.269 mg/l Fresh water Chronic EC10 27.3 µg/l Fresh water | Algae Daphnia Fish | 72 hours 48 hours 96 hours |
| | Chronic EC10 59.2 µg/l Fresh water Chronic NOEC 9 mg/l Fresh water | Algae - Pseudokirchneriella subcapitata - Exponential growth phase Daphnia - Daphnia magna Aquatic plants - Ceratophyllum demersum | 72 hours 21 days 3 days |
| | Chronic NOEC 178 µg/l Marine water Chronic NOEC 2.6 µg/l Fresh water Acute EC50 >100 mg/l | Crustaceans - Palaemon elegans Fish - Cyprinus carpio Daphnia | 21 days 4 weeks 48 hours |
| middle molecular epoxy resin MMW 700-1200 | Acute LC50 >100 mg/l | Fish | 96 hours |
| solvent naphtha (petroleum), light arom. | Acute EC50 19 mg/l | Algae - Pseudokirchneriella subcapitata (green algae) | 96 hours |
| | Acute EC50 6.14 mg/l Acute LC50 9.22 mg/l | Daphnia - Daphnia magna Fish - Oncorhynchus mykiss (rainbow trout) | 48 hours 96 hours |
| n-butanol | Acute EC50 1328 mg/l | Daphnia | 96 hours |

SECTION 12: Ecological information

| | | | |
|--------------|--|---|----------------------|
| zinc oxide | Acute LC50 1.376 mg/l Acute EC50 0.17 mg/l | Fish Algae - Pseudokirchneriella subcapitata - Exponential growth phase | 96 hours 72 hours |
| | Acute EC50 1 mg/l | Daphnia - Pseudokirchneriella subcapitata - Exponential growth phase | 48 hours |
| ethylbenzene | Acute LC50 24600 µg/l Fresh water Chronic NOEC <1000 µg/l Fresh water | Daphnia - Daphnia magna - Neonate Algae - Pseudokirchneriella subcapitata | 48 hours 96 hours |

12.2 Persistence and degradability

| Product/ingredient name | Test | Result | Dose | Inoculum |
|--|---------------------------------------|---------------------------|------|----------|
| xylene | - | >60 % - Readily - 28 days | - | - |
| solvent naphtha (petroleum), light arom. | - | >70 % - Readily - 28 days | - | - |
| n-butanol | OECD 301D Ready | 92 % - 20 days | - | - |
| ethylbenzene | Biodegradability - Closed Bottle Test | >70 % - Readily - 28 days | - | - |

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|--|-------------------|------------|------------------|
| xylene | - | - | Readily |
| solvent naphtha (petroleum), light arom. | - | - | Readily |
| n-butanol | - | - | Readily |
| ethylbenzene | - | - | Readily |

12.3 Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|---|--------------------|------------|-----------|
| middle molecular epoxy resin MMW 700-1200 | 2.64 - 3.78 | 31 | low |
| xylene | 3.12 | 8.1 - 25.9 | low |
| solvent naphtha (petroleum), light arom. | - | 10 - 2500 | high |
| n-butanol | 1 | 3.16 | low |
| zinc oxide | 2.2 | 60960 | high |
| ethylbenzene | 3.6 | - | low |

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : No known data available in our database.

Mobility : No known data available in our database.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods






The generation of waste should be avoided or minimized wherever possible. Residues of the product is listed as hazardous waste. Dispose of according to all state and local applicable regulations. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Spillage, remains, discarded clothes and similar should be discarded in a fireproof container.

Packaging

The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

SECTION 14: Transport information

Transport may take place according to national regulation or ADR for transport by road, RID for transport by train, IMDG for transport by sea, IATA for transport by air.

| | 14.1 UN no. | 14.2 Proper shipping name | 14.3 Transport hazard class(es) | 14.4 PG* | 14.5 Env* | Additional information |
|-------------------|----------------|---|--|-------------|--------------|---|
| UN Class | UN1263 | PAINT | 3   | III | Yes. | - |
| IMDG Class | UN1263 | PAINT. (zinc powder - zinc dust (stabilized)) | 3   | III | Yes. | The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. Emergency schedules F-E, S-E |
| IATA Class | UN1263 | PAINT | 3  | III | Yes. | The environmentally hazardous substance mark may appear if required by other transportation regulations. |

PG* : Packing group

Env.* : Environmental hazards

14.6 Special precautions for user

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable.

SECTION 15: Regulatory information

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

Chinese legislation and regulation:

1. Regulations on the Safety Administration of Dangerous Chemicals (No.591)
2. GB30000.2-2013~GB30000.29-2013 Safety rules for classification, precautionary labelling and precautionary statement of chemicals
3. GB13690-2009 General rule for classification and hazard communication of chemicals
4. List of hazardous chemicals (2015)
5. GB15258-2009 General rules for preparation of precautionary label for chemicals
6. GB/T 16483-2008 Safety data sheet for chemical products- Content and order of sections
7. GB/T 17519-2013 Guidance on the compilation of safety data sheet for chemical products
8. GB12268-2012 List of dangerous goods
9. GB6944-2012 Classification and code of dangerous goods
10. GB/T 15098-2008 The principle of classification of transport packaging groups of dangerous goods
11. The hazardous chemical waste environmental pollution control measures (2005.10.1)
12. China hazardous waste list (2016)

International legislation and regulation:

1. UN Recommendations on the Transport of Dangerous Goods - Model Regulations

SECTION 16: Other information

Abbreviations and acronyms :

ATE = Acute Toxicity Estimate
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
DNEL = Derived No Effect Level
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

GHS Classification

SECTION 16: Other information

| Classification | Justification |
|---|---|
| FLAMMABLE LIQUIDS - Category 3 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 1 | On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method |

Notice to reader

Indicates information that has changed from previously issued version.

The information contained in this safety data sheet is based on the present state of knowledge and EU and national legislation. It provides guidance on health, safety and environmental aspects for handling the product in a safe way and should not be construed as any guarantee of the technical performance or suitability for particular applications.

It is always the duty of the user/employer to ascertain that the work is planned and carried out in accordance with the national regulations.