

MATERIAL SAFETY DATA SHEET

Verison 2.0

Revision Date:03/13/2019

1. CHEMICAL PRODUCT & COMPANY INFORMATION

| | |
|---------------------|---|
| Company Information | Green Chemicals Co., Ltd |
| Phone Number: | No.6, DingLan Road, AoYang Industrial Park, FuNing,YanCheng, P.R.China +86-515-87883661 |
| Email: | market@greenchem-china.com |
| Website: | www.greenchem-china.com/ |
| Use: | For industrial use only |

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 3), H226

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 3), H331

Acute toxicity, Dermal (Category 3), H311

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

2.2. GHS Label elements, including precautionary statements

Pictogram



Signal Word:

Danger

Hazard statement(s)

H226

Flammable liquid and vapour.

H302

Harmful if swallowed.

H311 + H331

Toxic in contact with skin or if inhaled.

Precautionary statement(s)

P210

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233

Keep container tightly closed.

P240

Ground/bond container and receiving equipment.



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| | |
|--------------------|---|
| P241 | Use explosion-proof electrical/ ventilating/ lighting equipment. |
| P242 | Use only non-sparking tools. |
| P243 | Take precautionary measures against static discharge. |
| P261 | Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. |
| P264 | Wash skin thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P280 | Wear protective gloves/ eye protection/ face protection. |
| P301 + P312 + P330 | IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. |
| P303 + P361 + P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. |
| P304 + P340 + P311 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor. |
| P362 | Take off contaminated clothing and wash before reuse. |
| P370 + P378 | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to Extinguish. |
| P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P403 + P235 | Store in a well-ventilated place. Keep cool. |
| P405 | Store locked up. |
| P501 | Dispose of contents/ container to an approved waste disposal plant. |

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| | |
|------------------|--|
| Synonyms: | 2,4-Pentanedione |
| Formula: | C ₅ H ₈ O ₂ |
| Molecular weight | 100.12 g/mol |
| CAS-No. | 123-54-6 |
| EC-No. | 204-634-0 |

3.2 Hazardous components

| Component | Classification | Concentration |
|-----------|----------------|---------------|
|-----------|----------------|---------------|



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| | | |
|------------------|---|------------|
| PENTAN-2,4-DIONE | Flam. Liq. 3; Acute Tox. 4; Acute Tox. 3; H226, H302, H311 + H331 | 90 - 100 % |
|------------------|---|------------|

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

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. Move out of dangerous area.

Eyes: In the case of contact with eyes, flush eyes with water as a precaution. and seek medical advice.

Skin: Wash off with soap and plenty of water. Take victim immediately to hospital.
Consult a physician.

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

Ingestion: 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

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing Media: Dry powder Dry sand

Unsuitable Extinguishing Media: Do NOT use water jet.

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES



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6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. 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 non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

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 buildup of electrostatic charge.

For precautions see section 2.2.

Storage: 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.

Storage class (TRGS 510): 3: Flammable liquids

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines: There are no OSHA or ACGIH exposure guidelines available for component(s) in this product

Personal Protective Equipment.

Eye/Face Protection: Face shield and safety glasses 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.

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.



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Respiratory Protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose 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).

Engineering Controls:

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

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--|--|
| Physical Form: | Liquid |
| Color: | N/A |
| Odor: | N/A |
| Initial boiling point and boiling range: | 140.4 °C (284.7 °F) - lit. |
| Freezing/Melting Point: | Melting point/range: -23 °C (-9 °F) - lit. |
| Water solubility: | soluble |
| Vapor Density: | 3.46 - (Air = 1.0) |
| Vapor Pressure: | N/A |
| Relative density: | 0.975 g/cm ³ at 25 °C (77 °F) |
| Specific Gravity: | Not applicable |
| Viscosity: | N/A |
| PH: | 6 at 200 g/l at 20 °C (68 °F) |
| Partition Coefficient (Octanol/Water): | log Pow: 1.9 |
| Flash point: | 38 °C (100 °F) |
| Test Method (for Flash Point): | Closed cup |

Other safety information:

| | |
|-------------------------|----------------------------|
| Surface tension: | 31.2 mN/m at 20 °C (68 °F) |
| Relative vapour density | 3.46 - (Air = 1.0) |

10. STABILITY AND REACTIVITY

| | |
|-----------------------------------|--|
| Chemical stability: | Stable under recommended storage conditions. |
| Conditions to Avoid: | Heat, flames and sparks. |
| Incompatible materials: | Strong oxidizing agents, Reducing agents, Strong bases, Metals |
| Possibility of Hazardous | No data available |
| Hazardous decomposition products: | Hazardous decomposition products formed under fire conditions. - Carbon oxides |



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Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

| | |
|---|---|
| Acute Oral Toxicity: | LD50 Oral - Rat - male - 760 mg/kg LD50 Oral - Rat - female - 570 mg/kg |
| Acute Dermal Toxicity: | LD50 Dermal - Rabbit - male - 790 mg/kg LD50 Dermal - Rabbit - female - 1,370 mg/kg |
| Acute Inhalation Toxicity: | LC50 Inhalation - Rat - 4 h - 5.1 mg/l |
| Eye Irritation: | (Rabbits) Result: Mild eye irritation (Directive 67/548/EEC, Annex V, B.5.) |
| Skin Irritation: | (Rabbits) Result: Mild skin irritation |
| Respiratory or skin sensitisation: | No data available |
| Carcinogenicity (IARC; NTP; OSHA; ACGIH): | 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. NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens. |
| Mutagenicity: | Laboratory experiments have shown mutagenic effects. Hamster ovary Mutation in mammalian somatic cells. Rat Result: negative Micronucleus test |
| Reproductive Toxicity: | Not determined |
| Teratogenicity: | Not determined. |
| Neurotoxicity: | Not determined |
| Subacute Toxicity: | No data available |
| Subchronic Toxicity: | No data available |
| Chronic toxicity: | Not determined |
| Absorption / Distribution / Excretion / Metabolism: | Not determined |
| Additional Information: | RTECS: SA1925000 Inhalation may provoke the following symptoms: Dizziness, |



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Suffocation

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

| | |
|--|---|
| Toxicity to Fish: | LC50 - other fish - 106 mg/l - 96 h |
| Toxicity to daphnia and other aquatic invertebrates: | EC50 - Daphnia magna (Water flea) - 40 mg/l - 24 h EC100 - Daphnia magna (Water flea) - 90 mg/l - 24 h LC50 - Daphnia magna (Water flea) - 34,409 µg/l - 48 h |
| Persistence and degradability: | No data available |
| Bioaccumulative potential: | No data available |
| Mobility in soil: | No data available |
| Results of PBT and vPvB assessment t: | PBT/vPvB assessment not available as chemical safety assessment not required/not conducted |
| Other adverse effects: | No data available |

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

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|-------------------------|--|
| Product: | Contact a licensed professional waste disposal service to dispose of this material. Offer surplus and non-recyclable solutions to a licensed disposal company. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. |
| Contaminated packaging: | Dispose of as unused product. |

14. TRANSPORT INFORMATION

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|--|---|
| U.S. Department of Transportation (DOT): | UN number: 2310 Class: 3 (6.1) Packing group: III Proper shipping name: Pentane-2,4-dione Reportable Quantity (RQ): Poison Inhalation Hazard: No |
| International Maritime Dangerous Goods (IMDG): | UN number: 2310 Class: 3 (6.1) Packing group: III EMS-No: F-E, S-D Proper shipping name: Pentane-2,4-dione |
| International Air Transportation Authority (IATA): | UN number: 2310 Class: 3 (6.1) Packing group: III |



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Proper shipping name: Pentane-2,4-dione

15. REGULATORY INFORMATION

| | |
|---|--|
| SARA 302 Components: | No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302. |
| SARA 313 Components: | This material does not contain any chemical components with known CAS numbers that exceed the threshold (DeMinimis) reporting levels established by SARA Title III, Section 313. |
| SARA 311/312 Hazards: | Fire Hazard, Acute Health Hazard, Chronic Health Hazard |
| Massachusetts Right To Know Components: | Acetylacetone CAS-No.: 123-54-6 Revision Date: 1993-04-24 |
| Pennsylvania Right To Know Components: | Acetylacetone CAS-No.: 123-54-6 Revision Date: 1993-04-24 |
| New Jersey Right To Know Components: | Acetylacetone CAS-No.: 123-54-6 Revision Date: 1993-04-24 |
| California Prop. 65 Components: | This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm. |

16. OTHER INFORMATION

Disclaimer:

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. Green Chemicals Co.,Ltd shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.