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|  | MATERIAL SAFETY DATA SHEET | MSDS No. | M-01 |
| | DIBASIC ESTER | Effective From | 15/03/2023 |

Material Safety Data Sheet

1. Product and company identification

Product Name : Dibasic Ester
Company : Bloomchemag BV. Sint - Antoniusstraat 16 b1, B-2400 Mol, Belgium
Manufacturer : Yuanli Chemical Group Co.,Ltd.
Telephone : +91 7291999329
Fax : +91 7291999329
Emergency Phone No. : +91 7291999329

2. Hazards identification

Emergency Overview: Combustible, decomposes on heating emitting pungent smoke and fumes. Irritates eyes and skin.

GHS hazard category: According to the GB30000 series of Rules for Classification And Labelling Of Chemicals, this product is classified as Serious eye damage/eye irritation, Category 2B; Specific target organ system toxicity repeated exposure, Category 2; Hazard to the aquatic environment - acute, Category

3.

Pictogram(s):



Signal word: Warning

Hazard statements: Causes eye irritation; Prolonged or repeated exposure may cause organ damage; Harmful to aquatic organisms.


Precautionary statements

Precautionary measures: operate airtight and pay attention to ventilation. It is recommended that operators wear chemical safety glasses, fireproof and anti-toxic work clothes and rubber gloves. Keep away from fire and heat source, smoking is strictly prohibited in the workplace; use explosion-proof ventilation system and equipment. Avoid contact with oxidizing agents and acids, lightly load and unload when handling, prevent damage to packaging and containers; empty containers may have harmful substances.

Incident Response

Refer to Part 4 First Aid Measures.

Safe storage

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Refer to Part 7 Handling And Storage.

Disposal

Refer to Part 7 Handling And Storage.

Physical and chemical hazard: flammable liquid. Its vapour, when mixed with air, can form explosive mixtures. Combustion produces toxic carbon monoxide gas.

Health hazards: Irritating to eyes and mucous membranes. Prolonged exposure tends to make people drowsy, damages organs and organs and is irritating to the respiratory tract.

Environmental hazards: Do not allow undiluted or large quantities of product to come into contact with groundwater, waterways or sewage systems and do not discharge material into the surrounding environment without government permission.

3. Composition/information on ingredients

Common chemical name : Dibasic ester(DBE)/High boiling point solvent

Composition:

| Material | Cas No. | Concentration % |
|--------------------|-----------|-----------------|
| Dimethyl Succinate | 106-65-0 | 15-25 |
| Dimethyl Glutarate | 1119-40-0 | 55-65 |
| Dimethyl Adipate | 627-93-0 | 10-25 |

4. First aid measures

Inhalation

If inhaled, immediately remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Skin contact

Flush skin with water after contact. Wash contaminated clothing before reuse.

Eye contact


In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

Ingestion

If swallowed, do not induce vomiting. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

Notes to Physicians

Activated charcoal mixture may be beneficial. Suspend 50 g activated charcoal in 400 ml water and mix well. Administer 5 ml/kg, or 350ml for an average adult.

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5. Fire-fighting measures

Flammable properties

Flash Point :Not available

Method : TCC

Flammable limits in air,% by volume

LEL : 0.9

UEL :8.0

Autoignition :370 °C (698 °F)

Actual autoignition temperature (AIT) can be affected by the concentration of vapors and oxygen,vapor/air contact time,presure,volume,catalytic impurities,etc.Process conditions should be analyzed to determine if the AIT's may be higher or lower.

Vapor forms explosive mixture with air.hazardous gases/vapors produced in fire are carbon monoxide.

Extinguishing Media

Water Spray, Foam, Dry Chemical, CO₂.

Fire Fighting Instructions

Keep personnel removed and upwind of fire.Wear self-contained breathing apparatus.Wear full protective equipment.Cool tank/container with water spray.

6. Accidental release measures

Safeguards (personnel)

NOTE: Review fire fighting measures and handling (personnel)

Sections before proceeding with clean-up.Use appropriate personal protective equipment during clean-up.

Initial Containment

Remove source of heat,sparks,flame,impact,friction or electricity.Dike spill.Prevent material from entering sewers,waterways,or low areas.

Spill clean up

Recover free liquid for reuse or reclamation.Recover undamaged and minimally contaminated material for reuse and reclamation.Soak up with sawdust,sand,oil dry or other absorbent material.


7. Handling and storage

Handling (Personnel)

Avoid breathing vapors or mist.Avoid contact with eyes,skin,or clothing.Wash thoroughly after handing.

Storage

Do not mix with strong oxidants,acids,or alkalies.Store in a well ventilated place.Keep container tightly closed.

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8. Exposure controls/personal protection

Engineering Controls

Use sufficient ventilation to keep employee exposure below recommended limits.

Personal Protective Equipment

Eye/face protection

Wear safety glasses. Wear coverall chemical splash goggles when possibility exists for eye and face contact due to splashing or spraying material.

Respirator

A NIOSH approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a NIOSH approved positive pressure air-supplied respirator if there is any potential for an uncontrolled release. Exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

Protective Clothing

Wear impervious clothing, such as gloves, apron, boots, or whole bodysuit as appropriate. Recommended glove and clothing material: Butyl Rubber.

9. Physical and chemical properties

Physical Data

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|----------------------|--|
| Boiling Point: | 195-230 °C |
| Vapor Pressure: | 0.2 mm Hg 20 °C (68 °F) |
| Melting Point: | ~-20 °C (~-4 °F) |
| Volatiles %: | 100 WT% 20 °C (68 °F) |
| Evaporation Rate: | <0.1 (Butyl Acetate=1.0) |
| Solubility in water: | 5.3 WT % 20 °C (68 °F) |
| Odor: | Sweet |
| Odor Threshold: | 0.1 ppm 100% detection 0.01 ppm 50% detection |
| Form: | Liquid |
| Color: | Colorless |
| Specific Gravity: | 1.076-1.096 20 °C (68°F) |

10. Stability and reactivity


Chemical Stability

Stable, Incompatibility with Other Materials

Incompatible or can react with strong oxidizers, acids, alkalies.

Decomposition

Decomposes with heat.

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11. Toxicological information

Animal Data

Inhalation 4-hour LC50: >11 mg/L in rats

Inhalation 1-hour LC50: >10.7 mg/L in rats

Skin absorption LD50 : >2,250 mg/kg in rabbits

Oral LD50: 8,191 mg/kg in rats

The mixture is a mild to severe skin irritant and a moderate eye irritant, but is not a skin sensitizer in animals. Toxic effects described in animals from exposure by inhalation include upper respiratory tract irritation. A single 4-four exposure to 60 ppm caused transient corneal opacity and transient increases in the distance from the cornea to the anterior surface of the lens of the eye. Toxicity described in animals from repeated exposure by inhalation include decreased weight gain, absolute and relative liver weight decrease, and degeneration of olfactory epithelium(nasal tissue).

Toxicity described in animals from repeated exposure by ingestion include weight loss, but there were no pathological abnormalities noted.

A single application of 10 ul to the eye caused corneal opacity. The administration of 10-100 ul of a similar mixture caused corneal opacity, transient increases in corneal thickness, and transient corneal anesthesia. A single application of approximately 60 mg/kg to the skin caused transient increases in the distance from the cornea to the anterior surface of the lens of the eye.

The mixture does not produce genetic damage in animals, or in bacterial cell cultures, but it was positive in one study with cultures, but it was positive in one study with cultured mammalian cells. Animal testing indicates that this mixture does not have developmental, or reproductive effects.

12. Ecological information

AQUATIC TOXICITY

96 hour LC50 - Fathead minnows: 18-24 mg/L.

48 hour LC50 – Daphnia magna: 112-150 mg/L.

Moderately toxic.

Biodegradation Information:


The DIBASI ESTER components, dimethyl succinate, dimethyl glutarate, and dimethyl adipate were tested for biodegradability using the 28-day closed bottle test. A minimum of 60% biodegradation must be reached in a 14 day window after exceeding the 10% level in order to pass this test and be rated as readily biodegradable. All of the components of DBE pass this test and, therefore, DIBASIC ESTER is considered readily biodegradable.

Dimethyl Succinate - 67% biodegradability in day 7

Dimethyl Glutarate - 70% biodegradability in day 7

Dimethyl Adipate - 58% biodegradability in day 7

Dibasic Ester - 84% biodegradability in day 14

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13. Disposal considerations

Waste Disposal

Treatment, storage, transportation and disposal must be in accordance with applicable Federal, State/provincial and local regulations.

Recover unusable free liquid and dispose into either an approved and permitted incinerator or approved and permitted biological treatment system.

Recover any Dibasic Ester contaminated water and dispose of into an approved and permitted biological treatment system.

Do not flush any water or solids into surface water drains or sanitary sewer system..

Remove unusable solid material or contaminated soil for disposal into an approved and permitted landfill.

14. Transport information

DOT (US)

Not regulated

IMDG

Not regulated by IMDG/IMO

IATA Not

regulated

15. Regulatory information

U.S.Federal Regulations

TSCA Inventory Status : Reported/Included.

TITLE III HAZARD CLASSIFICATION SECTIONS 311,312

Acute: Yes

Chronic: No

Fire: No

Reactivity: No

Pressure: No

HAZARDOUS CHEMICAL LISTS


SARA Extremely Hazardous Substance: No

CERCLA Hazardous Substance: No

SARA Toxic Chemical: No

Canadian Regulations

CLASS D Division 2 Subdivision B-Toxic Material. Skin or Eye Irritant.

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16. Other information

Revision date: 15/05/2023

Disclaimers

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.