Shanghai Macklin Biochemical Technology Co., Ltd.
TEL:400-623-8666
FAX:021-50706099
E-mail:sales@macklin.cn
WEB:www.macklin.cn

1. IDENTIFICATION

Product name: Diisononyl Phthalate
CAS No. : 28553-12-0
Brand: Macklin
Company: Shanghai Macklin Biochemical Co.,Ltd.
Address: Shanghai Pudong Zhangjiang High-tech Park; 1st Building, 68 Huatuo Road; SHANGHAI CHINA
Zip code: 201206
Telephone: +86 21-50706066
Fax: +86 21-50706099
E-mail: sales@macklin.cn; tech@macklin.cn
Revision date: 2019/12/12

2. HAZARDS IDENTIFICATION

GHS classification

PHYSICAL HAZARDS

HEALTH HAZARDS

ENVIRONMENTAL HAZARDS

GHS label elements, including precautionary statements

Pictograms or hazard symbols

Signal word

No signal word

Hazard statements

none

Precautionary statements

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name
Di-''isononyl'' phthalate

Components:Diisononyl Phthalate
CAS No.:28553-12-0
Chemical Formula:$C_{26}H_{42}O_4$

4. FIRST AID MEASURES

4.1
Description of necessary first-aid measures
If inhaled
Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.
Following skin contact
Rinse and then wash skin with water and soap.
Following eye contact
Rinse with plenty of water for several minutes (remove contact lenses if easily possible).

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

4.2

Most important symptoms/effects, acute and delayed

Produces no ill effects at normal temperatures, but may give off irritating vapors at high temperatures. (USCG, 1999)

4.3

Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Esters and related compounds

5. FIRE-FIGHTING MEASURES

5.1

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Wear self-contained breathing apparatus for firefighting if necessary.

5.2

Specific hazards arising from the chemical

This chemical is combustible. (NTP, 1992)

5.3

Special protective actions for fire-fighters

Use water spray, powder, alcohol-resistant foam, carbon dioxide.

6. ACCIDENTAL RELEASE MEASURES

6.1

Personal precautions, protective equipment and emergency procedures

Collect leaking and spilled liquid in covered containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.2

Environmental precautions

Collect leaking and spilled liquid in covered containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.3

Methods and materials for containment and cleaning up

ACCIDENTAL RELEASE MEASURES: Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Methods and materials for containment and cleaning up: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

NO open flames. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

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): Non Combustible Liquids.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure limit values

Component
Di-''isononyl'' phthalate
CAS No.
28553-12-0
Limit value - Eight hours
Limit value - Short term
ppm
mg/m
3
ppm
mg/m
3
Denmark
3
6
Ireland
5
New Zealand
5
United Kingdom
5
Remarks
Biological limit values
no data available
Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Personal protective equipment

Eye/face protection
Wear safety spectacles.
Skin protection
Protective gloves.
Respiratory protection
Use ventilation.
Thermal hazards
no data available

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state
Di-isononyl phthalate is an oily colorless liquid with a slight ester odor. Denser than water. Insoluble in water. (USCG, 1999)
Colour
Colorless liquid
Odour
no data available
Melting point/freezing point
-43 °C
Boiling point or initial boiling point and boiling range
244-252 °C (5 mmHg)
Flammability
Combustible.
Lower and upper explosion limit/flammability limit
no data available
Flash point
235°C
Auto-ignition temperature
380°C
Decomposition temperature
no data available

pH
no data available
Kinematic viscosity
500 cST at 0 deg C; 102 cST at 20 deg C; 37 cSt at 37.8 deg C; 6 cSt at 100 deg C
Solubility
Insoluble (<1 mg/ml at 70° F) (NTP, 1992)
Partition coefficient n-octanol/water
log Kow = 9.37 (est)
Vapour pressure
5.4X10-7 mm Hg at 25 deg C
Density and/or relative density
0.972g/mLat 25°C(lit.)
Relative vapour density
no data available
Particle characteristics
no data available

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
DI-ISONONYL PHTHALATE reacts exothermically with acids to generate isononyl alcohol and phthalic acid. Strong oxidizing acids may cause a vigorous reaction that is sufficiently exothermic to ignite the reaction products. Heat is also generated by interaction with caustic solutions. Flammable hydrogen is generated by mixing with alkali metals and hydrides. Can generate electrostatic charges. [Handling Chemicals Safely, 1980. p. 250].
10.4
Conditions to avoid
no data available
10.5
Incompatible materials
no data available
10.6
Hazardous decomposition products
When heated to decomposition it emits acrid smoke and irritating vapors.

11. TOXICOLOGICAL INFORMATION

Acute toxicity
Oral: LD50 Rat oral >10 g/kg
Inhalation: LC50 Rat inhalation >4.4 mg/L for 4hr
Dermal: no data available
Skin corrosion/irritation
no data available
Serious eye damage/irritation
no data available
Respiratory or skin sensitization
no data available
Germ cell mutagenicity
no data available
Carcinogenicity
no data available
Reproductive toxicity
no data available

STOT-single exposure
no data available
STOT-repeated exposure
Tumours have been detected in experimental animals but may not be relevant to humans.
Aspiration hazard
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

12. ECOLOGICAL INFORMATION

12.1
Toxicity
Toxicity to fish: LC50; Species: Pimephales promelas (Fathead minnow); Conditions: flow through, 20-24 deg C, pH 6.6-7.2; Concentration: >0.19 mg/L for 96 hr
Toxicity to daphnia and other aquatic invertebrates: no data available
Toxicity to algae: EC50; Species: Pseudokirchneriella subcapitata (Green algae) 2-3 instar; Conditions: freshwater, static, 22-24 deg C, pH 7.6-7.9, hardness 25-50 mg/L CaCO3, alkalinity 25-50 mg/L CaCO3; Concentration: 1800 ug/L for 96 hr; Effect: decreased population abundance /> or = 95% purity
Toxicity to microorganisms: no data available
12.2
Persistence and degradability
AEROBIC: A shake flask CO2 evolution test using an inoculum prepared from soil and sewage, resulted in 99% biodegradation of diisononyl phthalate and 62% theoretical CO2 evolution after a 28 day incubation period(1). Diisononyl phthalate had a biodegradation half-life of 5.31 days with a 7.1 day lag time(1). Diisononyl phthalate was classified as slowly degradable in semi-continuous activated sludge test in which 32% degradation was achieved for a 3 ppm feed(2). In another semi-continuous activated sludge test (Soap and Detergent Association procedure), the mean percentage degradation for diisononyl phthalate (3 ppm) was 67.8% in 24 hr(2). In a die-away phase of the testing, it took 5 days to achieve 90% degradation(2). Using a modified Sturm test, diisononyl phthalate was biodegraded an average of 79% in 28 days(3). Diisononyl had degradation rates of 68 and >90% at initial concentrations of 1-3 and 3 ppm, in 1 and 4 days incubation time, respectively, using an activated sludge inoculum(4). Diisononyl phthalate exhibited a primary biodegradation to intermediates of >95% in 12 days from a starting concentration of 1 ppm using a fresh water inoculum(4). Ultimate biodegradation in fresh water sediment was <1 to 8% in 28 days with respective starting concentrations of 10 to 0.02 ppm(5). Total degradation of diisononyl phthalate with starting concentrations of 45, 35, and 100 ppm using activated sludge inoculum with a 28 day incubation period were 70, 57, and 71%, respectively(4). Diisononyl phthalate, present at 100 mg/L, reached 74% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test(6).
12.3
Bioaccumulative potential
An estimated BCF of 230 was calculated in fish for diisononyl phthalate(SRC), using an estimated log Kow of 9.37(1) and a regression-derived equation(1). According to a classification scheme(2), this BCF suggests the potential for bioconcentration in aquatic organisms is high(SRC). However, bioconcentration studies on compounds which are structurally similar suggest that bioconcentration may be lower than that indicated by the regression-derived equations due to the ability of aquatic organisms to readily metabolize this class of compounds(3).
12.4
Mobility in soil
Using a structure estimation method based on molecular connectivity indices(1), the log Koc of diisononyl phthalate can be estimated to be 5.52(SRC). Another estimated value is reported as 5.49(2). According to a classification scheme(3), these estimated Koc values suggest that diisononyl phthalate is expected to be immobile in soil.
12.5
Other adverse effects
no data available

13. DISPOSAL CONSIDERATIONS

Product
The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.
Contaminated packaging
Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14. TRANSPORT INFORMATION

14.1
UN Number
ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)
14.2
UN Proper Shipping Name
ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)
14.3
Transport hazard class(es)
ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)
14.4
Packing group, if applicable
ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)
14.5
Environmental hazards
ADR/RID: No
IMDG: No
IATA: No
14.6
Special precautions for user
no data available
14.7
Transport in bulk according to IMO instruments
no data available

15. REGULATORY INFORMATION

15.1
Safety, health and environmental regulations specific for the product in question
Chemical name
Common names and synonyms
CAS number
EC number
Di-''isononyl'' phthalate
Di-''isononyl'' phthalate
28553-12-0
249-079-5
European Inventory of Existing Commercial Chemical Substances (EINECS)
Listed.
EC Inventory
Listed.

United States Toxic Substances Control Act (TSCA) Inventory
Listed.
China Catalog of Hazardous chemicals 2015
Not Listed.
New Zealand Inventory of Chemicals (NZIoC)
Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)
Listed.
Vietnam National Chemical Inventory
Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)
Listed.
Korea Existing Chemicals List (KECL)
Listed.

16. OTHER INFORMATION

This SDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority.The products are supposed to be used promptly after purchase in consideration of safety.Some new information or amendments may be added afterwards.If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only.In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal.Safe usage conditions shall be set up on each user's own responsibility.