

IN CASE OF TRANSPORTATION EMERGENCY CONTACT:

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## 1. IDENTIFICATION

PRODUCT NAME: DIBASIC ESTER  
CAS NO: 1119-40-0  
ALTERNATE NAME: DBE DIBASIC ESTERS

## 2. HAZARDS IDENTIFICATION

Emergency Overview

Caution!

May Cause eye and respiratory tract irritation. May cause blurred vision.

Routes of exposure

Inhalation. Skin contact. Eye contact. Ingestion.

Potential Health Effects, Skin

This material is no more than slightly toxic or slightly irritating based on toxicity studies.

Potential Health Effects, Eye

This material may cause pain, redness, and tearing based on toxicity studies. May cause blurred vision based on human experience.

Potential Health Effects, Inhalation

This product may cause coughing, chest tightness, chest pain and runny nose based on toxicity studies with the components. Overexposure to vapors has caused a blurring of vision.

Potential Health Effects, Ingestion

This material is no more than slightly toxic. Significant adverse health effects are not expected to develop if only small amounts (less than a mouthful) are swallowed.

## 3. COMPOSITION

Components	CAS #	Concentration
DIMETHYL GLUTARATE	1119-40-0	55 - 65%
DIMETHYL SUCCINATE 10 - 25%	106-65-0	15 - 25%
DIMETHYL ADIPATE	627-93-0	10 - 20%

Composition Comments

Manufacturer's Recommendations - 8 hour threshold limit value (TWA): 1.5ppm (10mg/m3) for Dibasic Ester.

## 4. FIRST AID MEASURES

### Skin

Immediate first aid is not likely to be required. This material can be removed with soap and water. Wash heavily contaminated clothing before reuse.

### Eye

Immediately rinse with plenty of water. If easy to do, remove any contact lenses. Rinse under the eyelids, for at least 15 minutes. Get medical attention if irritation develops or persists.

### Inhalation

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Remove material from eyes, skin and clothing.

### Ingestion

Have victim rinse mouth thoroughly with water. If swallowed, do NOT induce vomiting. Never give anything by mouth to a victim who is unconscious or is having convulsions. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Obtain medical attention.

## 5. FIRE FIGHTING MEASURES

### General fire hazards

Vapors may form explosive mixtures with air. Vapors are heavier than air and may travel along the ground to some distant source of ignition and flash back.

### Extinguishing media

Suitable extinguishing media. Dry chemical, CO<sub>2</sub>, water spray or regular foam.

### Unsuitable extinguishing media

Do not use water jet.

### Protection of firefighters

#### Specific hazards arising from the chemical

None known.

### Protective equipment and precautions for firefighters

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Move containers from fire area if you can do it without risk.

### Hazardous combustion products

Combustion products include fumes, smoke, carbon monoxide and carbon dioxide. Irritating and toxic gases or fumes may be released during a fire.

Auto-ignition temperature: 698°F (370°C)

Flammability limits in air, lower, 0.9  
% by volume

Flammability limits in air, upper, 8  
% by volume

### Flash point

217.4°F (103°C) Tag Closed Cup

## 6. ACCIDENTAL RELEASE MEASURES

#### Personal precautions

Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained.

#### Environmental precautions

Do not let product enter drains. Do not flush into surface water.

#### Methods for containment

Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewers, basements or confined areas.

#### Methods for cleaning up

Large Spills: Dike far ahead of liquid spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean contaminated surface thoroughly.

#### Other information

Clean up in accordance with all applicable regulations.

## 7. HANDLING AND STORAGE

#### Handling

Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Do not breathe gas/fumes/vapor/spray. Do not get this material in contact with skin or eyes. Use this product with adequate ventilation. Use non-sparking tools when opening or closing containers.

#### Storage

Keep tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, and flame. Store away from strong oxidizers.

#### Ventilation

Provide natural or mechanical ventilation to control exposure levels below airborne limits (see below). The use of local mechanical exhaust ventilation at sources of air contamination such as open process equipment is preferred.

Airborne Exposure Limits have not been established.

The manufacturer recommends an airborne exposure guideline of 10 mg/m<sup>3</sup> (1.5 ppm) (8-hr. TWA) for this product.

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

#### Eye Protection: Personal Protection Equipments (PPE)

Where there is significant potential for eye contact, wear chemical goggles and have eye flushing equipment available.

#### Skin Protection: Personal Protection Equipments (PPE)

Although this product does not present significant skin concern, minimize skin contamination by following good industrial practice. Wearing protective gloves is recommended. Wash hands and contaminated skin thoroughly after handling.

#### Respiratory Protection: Personal Protection Equipments (PPE)

Avoid breathing vapor or mist. Use NIOSH/MSHA approved respiratory protection equipment when airborne limits are exceeded (see above). Consult the respirator manufacturer to determine the appropriate type of equipment for a given application. Observe respirator use limitations specified by NIOSH/MSHA or the manufacturer. Respiratory protection programs must comply with 29 CFR 1910.134.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Form/Appearance: Liquid.

Color: Colorless

Odor: Sweet

Auto-ignition temperature: 698° F (370° C)

Boiling point: 384.8 - 437° F (196-225° C)

Decomposition temperature: Not determined

Evaporation rate: <0.1; Butyl Acetate = 1.0

Flammability limits in air, 0.9  
lower, % by volume

Flammability limits in air, 8  
upper, % by volume

Flash point: 217.4°F (103° C) Tag closed cup

Freezing point: Not determined

Melting point: -4°F (-20°C)

Octanol/H2O coeff: log Pow: 0.19 at 25°C

Odor threshold: 0.1 ppm - 100% detection; 0.01 ppm - 50% detection

pH: Not determined

Solubility (H2O): 5.3% w/w @ 20°C

Specific gravity: 1.09 @ 20°C

Vapor density: Not determined

Vapor pressure: 0.01 kPa @ 20°C

Viscosity: 2.6 mPa/s @ 25°C

Comments: DBE is considered 100% VOC (1090 g/l) per EPA 40 CFR 51.100 (s) 1 for industrial application

## 10. STABILITY AND REACTIVITY

Chemical stability

Stable at normal conditions.

Conditions to avoid

Heat, flames and sparks.

Incompatible materials

Strong acids, alkalies and oxidizing agents.

Hazardous decomposition products

At thermal decomposition temperatures, carbon monoxide and carbon dioxide.

Possibility of hazardous reactions

Will not occur.

## 11. TOXICOLOGICAL INFORMATION

Acute effects

Acute LD50: > 5000 mg/kg, Rat, Oral

Acute LC50: > 10.7 mg/I, Rat, Inhalation  
Acute LD50: > 2250 mg/kg, Rabbit, Dermal

## Component analysis - LD50

### Toxicology Data - Selected LD50s and LC50s

DIMETHYL SUCCINATE	106-65-0	Oral LD50 Rat: >5 g/kg; Dermal LD50 Rabbit: >5 g/kg
DIMETHYL ADIPATE	627-93-0	Oral LD50 Rat: 1920 mg/kg
DIMETHYL GLUTARATE	1119-40-0	Inhalation LC50 Rat: 6.1 mg/L/4H; Oral LD50 Rat: 8191 mg/kg

### Routes of exposure

Inhalation. Skin contact. Eye contact. Ingestion.

### Sensitization

Did not cause sensitization on laboratory animals.

### Human experience

Temporary blurred vision has been reported with inhalation, skin and eye contact.

Inhalation can cause irritation to mucous membranes.

Skin contact can cause irritation, rash, discomfort.

Eye contact can cause irritation, excessive tearing, and discomfort.

### Eye contact

Contact with eyes may cause irritation.

A single application of 10 uL to the eye cause corneal opacity. The administration of 10-100 uL of a similar mixture caused corneal opacity, transient increases in corneal thickness, and transient corneal anesthesia.

### Skin contact

This product was not a skin irritant in rabbits when applied to intact skin for 4 hours under semi-occlusive dressings. Earlier studies indicated skin irritation is evident when applied to intact skin for 24 hours under rubber sheeting.

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.

### Inhalation

Avoid inhalation of mists or aerosols.

Toxic effects described in animals from exposure by inhalation include upper respiratory tract irritation. A single 4-hour 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.

### Further information

Repeated dose toxicity: oral, rat: 28 day, NOEL: >1,000 mg/kg

Repeated dose toxicity: inhalation, rat: 90 day, NOEL: 0.02 mg/L

## 12. ECOLOGICAL INFORMATION

### Aquatic Toxicity

Invertebrate - 48 hr. EC50 Daphnia Magna: 137 mg/L

Dimethyl esters of succinic, glutaric and adipic were determined to be "inherently biodegradable" in a semi-continuous activated sludge (SCAS) test following OECD guidelines method 302A. BOD data suggests that these materials are "readily biodegradable".

In five-day BOD tests, all materials had a BOD-5/COD ratios greater than 0.6.

#### Ecotoxicity

EC50/48-hour/Daphnia =17 mg/L

EC50/72-hour/Algae =46.9 mg/L

LC50/96-hour/Bluegill sunfish =7.5 mg/L

#### Persistence / degradability

Readily biodegradable, according to appropriate OECD test.

Assessment of biological degradability (Closed-Bottle Test): 87% after 28 days.

### 13. DISPOSAL CONSIDERATIONS

#### Waste Disposal

This material, when discarded, is not a hazardous waste as that term is defined by the Resource, Conservation and Recovery Act (RCRA), 40 CFR 261. Dispose of by incineration or recycle in accordance with local, state and federal regulations. Consult your attorney or appropriate regulatory officials for information on such disposal.

This product should not be dumped, spilled, rinsed or washed into sewers or public waterways.

### 14. TRANSPORT INFORMATION

#### Department of Transportation (DOT) Requirements

Not regulated as dangerous goods.

### 15. REGULATORY INFORMATION

#### United States Regulations

#### Federal Regulations

All components are on the U.S. EPA TSCA Inventory List.

#### U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export

#### Notification

DIMETHYL SUCCINATE	106-65-0	Section 4 (applies only to those companies that signed an Enforceable. Consent Agreement for this chemical)
DIMETHYL ADIPATE	627-93-0	Section 4 (applies only to those companies that signed an Enforceable Consent Agreement for this chemical)
DIMETHYL GLUTARATE	1119-40-0	Section 4 (applies only to those companies that signed an Enforceable Consent Agreement for this chemical)

#### Superfund Amendments and Reauthorization Act of 1986 (SARA)

#### Hazard categories

Immediate Hazard - Yes

Delayed Hazard - No

Fire Hazard - No

Pressure Hazard - NoReactivity Hazard No

Section 302 extremely hazardous substance: No

### 16. OTHER INFORMATION

#### Disclaimer

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