

# DECACHEM DOO, Novi Sad, Serbia

Address: Lozionicka 14/9, 21000 Novi Sad, Serbia ;  
PIB: 113353206    Matični broj: 21851396

[Http://www.decachem.com](http://www.decachem.com)

Phones: +381 63 658 074 / +381 64 27 54 268

Email: [info@decachem.com](mailto:info@decachem.com)

**DATE / Datum:** 27.06.2024

## DBE - TDS

1. Main compositions: Dimethyl succinate, dimethyl glutarate, dimethyl adipate. It is non toxic, colorless transparent liquid with light ester aroma.

2. Features:

- 1). Wide boiling and distilling range.
- 2). Slow evaporation in normal temperature, but evaporations will speed up as temperature rise.
- 3). Excellent levelling property, can improve lustrousness, improve hiding powder of pigments, increase

3. Quality Specification:

Ester Content:	99.0% min
Dimethyl Succinate	15-25%
Dimethyl Glutarate:	55-65%
Dimethyl Adipate:	10-25%
Density (20deg. c.)	1.076-1.096
Distillation Range (20deg. c.):	196-230
Moisture:	0.1% max
Acid value (MgKOH/g):	0.3 max
Colour:	15 APHA max
Methanol:	0.2% max
Appearance:	Colorless transparent liquid

4. Uses: It is an environmentally sound solvent for coatings, mainly used as high boiling solvent for coating industry can coating, printing ink industry, metal furniture, coating, foundry resin (cold box resin) and insulating coating industry. It can take the place of isophorone, glycol ether, cyclohexanone etc. It is suitable for baking-type synthetic resin paint and high-temperature fast drying coil coatings, board coatings, auto coatings etc.

5. Packing & Transport: 220kgs/steel drum; Flexitanik, IBC & Isotank, transported as per general chemicals

6. Molecular Formula:  $\text{CH}_3\text{OOC}(\text{CH}_2)_n\text{COOCH}_3$  n=2, 3, 4

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Compound	admixture ✓	
Component	CAS Number	Content
Dimethyl Glutarate	1119-40-0	55-65%
Dimethyl Adipate	627-93-0	10-25%
Dimethyl Succinate	106-65-0	15-25%

DBE – COA

## Certificate of Analysis

Date: Nov. 10, 2023

Product Name : Dibasic Ester(DBE)

Quantity/Weight: 17.6 mt

Batch No. :20231110

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	Spec:	Result:
Ester Content:	99.0% min	99.47%
Dimethyl Succinate	15-25%	21.58%
Dimethyl Glutarate:	55-65%	57.97%
Dimethyl Adipate:	10-25%	19.92%
Density(20deg.c.)	1.076-1.096	1.09
Distillation Range(20deg.c.):	196-230	196-230
Moisture:	0.1% max	0.048%
Acid value (MgKOH/g):	0.3 max	0.15
Colour:	15 APHA max	10
Methanol:	0.2% max	0.04%
Appearance:	Colorless transparent liquid	

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## Material Safety Data Sheet

### Dibasic Ester (DBE)

Date: Apr.28,2022

### Part One    Chemical and Company Identification

Chemical Code: DBE

Chemical English Name: Dibasic Ester

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### Part two    Composition/Component Information

Compound                      admixture ✓

Component	CAS Number	Content
Dimethyl Glutarate	1119-40-0	55-65%
Dimethyl Adipate	627-93-0	10-25%
Dimethyl Succinate	106-65-0	15-25%

### Part Three    Hazards Identification

Hazards Class:

Way to Enter: Absorb by skin or inhalation

Human Health Effects: Skin contact may cause skin irritation with discomfort or rash.

Eye contact may cause eye irritation with discomfort, tearing, or blurring of vision. Inhalation may cause irritation of the upper respiratory passages, with coughing and discomfort. Some individuals who have been overexposed by inhalation or skin contact experienced blurry vision. Some symptoms of pre-existing eye disease could be aggravated by overexposure to this material.

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Hazards to Environment:

Explosion Hazard: Vapor forms explosive mixture with air.

## Part Four    First Aid Measures

Any question or continual symptom, ask for help from doctors.

Skin Contact: Flush skin with water after contact.

Wash contaminated clothing before next use.

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

Inhalation : If inhaled, immediately remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. 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 5mL/kg, or 350 mL for an average adult.

## Part Five    Fire Fighting Measures

Hazards: Vapor forms explosive mixture with air.

Hazardous Formed Gas: Carbon monoxide.

Extinguishing Way: Water Spray, Foam, Dry Chemical, CO<sub>2</sub>.

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.

## Part six    Accidental Release Measures

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

## Part Seven    Handling and Storage



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- Handling : Avoid breathing vapors or mist. Avoid contact with eyes, skin, or clothing.  
Wash thoroughly after handling.
- Storage : Do not mix with strong oxidants, acids, or alkalis. Store in a well ventilated place. Keep container tightly closed.

## Part Eight Exposure Controls/Personal Protection

### Exposure Limits

DBE

PEL (OSHA) : None Established

TLV (ACGIH) : None Established

AEL \* (DuPont) : 1.5 ppm, 10 mg/m<sup>3</sup>, 8 Hr, TWA This limit is for DBE.

\* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

### Monitoring Method:

Engineering Controls: Use sufficient ventilation to keep employee exposure below recommended limits.

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.

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.

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

## Part Nine Physical and Chemical Properties

Appearance : Colorless liquid with some sweet odor.

pH Value: 0.3(mgKOH/g )max

Melting point (°C): about -20

Specific gravity: about 1.092

Boiling point(°C): 196-230

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Vapor Pressure: 0.2mmHg (at 20°C)

Flash point (°C): 100 (TCC)

Lower explosion limit[% (V/V)]: 0.9

Upper explosion limit[% (V/V)]: 8.0

Firing point: 370°C

Solubility in water: 5.3%(weight, at 20°C)

## Part Ten    Stability and Reactivity

Stability: Stable

Incompatibility with Other Materials: Incompatible or can react with strong oxidizers, acids, alkalis.

Avoid in conditions: Heating

Polymerization: Polymerization will not occur.

Decomposition: Carbon monoxide

## Part Eleven    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

Sub-acute toxicity and chronic toxicity: 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.

Irritability: The mixture is a mild to severe skin irritant and a moderate eye irritant,

Sensitivity: not a skin sensitizer

Damage : The mixture does not produce genetic damage in animals, or in bacterial cell cultures, but it was positive in one study with cultured mammalian cells.

Deformation : Animal testing indicates that this mixture does not have developmental, or reproductive effects.

Carcinogenicity Information : None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSIIA or ACGIII as a carcinogen.

Other : 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,

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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.

## Part Twelve    Ecological Information

Ecological Toxicity:

Aquatic toxicity

DBE.

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

Moderately toxic.

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

Biodegradation Information :    The DBE 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, DBE 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

- 84% biodegradability in day 14

## Part Thirteen    Disposal Considerations

Kind of Waste Disposal: Hazardous Waste

Treatment: Treatment and disposal must be in accordance with applicable provincial and local regulations. Recover unusable free liquid and dispose into either an approved and permitted incinerator or approved and permitted biological treatment system.

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

## Part Fourteen    Transportation Information

Not Regulated as a hazardous material by Hazardous Goods List DOT, IMO, or IATA.

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## Part Fifteen    Regulatory Information

Regulations : Safety Regulation for Hazardous Chemicals  
Detail Application Rules of Safety Regulation for Hazardous Chemicals  
Rules of Using Chemical Safely at Working Spot  
Class and Sign For Common Hazardous Chemicals (GB13690-92)  
General Technique Conditions For Transportation and  
Packing Hazardous Goods (GB12463-90)

## Part Sixteen    Other Information

References : 1. Safety Management for Chemicals at Working Spot  
2. Safety Handbook for Hazardous Goods  
3. All-Round Book for Safety Technology Hazardous Chemicals  
4. Register Regulation for Hazardous Chemicals

Writing Date: November, 2015

Writing Account: Writing according to Rules for Writing MSDS (GB16483-2000).

Others:

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS