

山东元利科技股份有限公司

SHANDONG YUANLI SCIENCE AND TECHNOLOGY CO., LTD.

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MATERIAL SAFETY DATA SHEET

DIBASIC ESTER(DBE)/HIGH BOILING POINT SOLVENT

Version: 5.01

Date: 01/01/2015

Cancels and replaces version:4.01

1 Product and company identification

Product Name : Dibasic ester/High boiling point solvent

Use : It is widely used in the paints and coatings,inks,fourdry chemical and so on.Als
it is one kind of environmental protection cleanser and paint remover.

Supplier : Manufacturer

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2 Composition / information on ingredients

SUBSTANCE

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

Composition:	Material	Cas No.	%
	Dimethyl succinate	Cas No.: 106-65-0	15-25
	Dimethyl glutarate	Cas No.: 1119-40-0	55-65
	Dimethyl adipate	Cas No.: 627-93-0	10-25

3 Hazards identification

Potential Health Effects

DBE may irritate skin,eyes,nose and throat.May cause blurry vision.

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.

The mechanism of blurred vision in humans is unknown.

Based on observed effects from animal studies,we believe that some symptoms of pre-existing eye disease could be aggravated by overexposure to this material.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC,NTP,OSHA or Acgih as a carcinogen.

4 First-aid measures

First Aid

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 350 ml for an average adult.

5 Fire - fighting measures

Flammable properties

Flash Point : 100 c (212 F)

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, pressure, 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.

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.

Exposure guidelines

Exposure Limits

DBE

PEL (OSHA): None established

TLV (ACGIH):None Established

AEL : 1.5PPM,10 mg/m³,8 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.

9 Physical and chemical properties

Physical Data

Boiling Point	:	195-230
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	:	0.1ppm 100% detection 0.01 ppm 50% detection

Form : Liquid
Color : Colorless
Specific Gravity : 1.076-1.096 @ 20 C (68F)

10 Stability and reactivity

Chemical Stability

Stable

Incompatibility with Other Materials

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

Decomposition

Decomposes with heat.

Polymerization

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-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. 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 µl to the eye caused corneal opacity. The administration of 10-100 µl 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

Ecotoxicological Information

AQUATIC TOXICITY

DIBASIC ESTER

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

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

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, 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

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 DBE 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

Shipping Information

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

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

VOC's for DBE per the EPA Federal Register/Volume 57,
No.22/, 2/3/92/page 3945, considered to be 100% VOC
(1090 gr/ltr) .

Canadian Regulations

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

16 Other information

NFPA, NPCA-HMIS

NPCA-HMIS Rating
Health : 1
Flammability :1
Reactivity :0

Personal Protection rating to be supplied by user depending on use conditions.

Additional Information

The hydrogen cyanide concentration in this product is so low (<10ppm) as to be toxicologically insignificant when this product is used as a solvent. However, when this product is chemically reacted with alcohols, and methanol is recovered from that reaction and purified for reuse by distillation, concentration of highly volatile impurities such as hydrogen cyanide to toxicologically significant levels can occur in the waste stream from this process. Processors using this product as a raw material should be aware of this potential hazard.

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.

End of MSDS