

**Safety Data Sheet**  
**Dibasic Ester (DBE-1)**

**SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION**

**1.1 Product identifier**

**Product name:** Dibasic Ester (DBE-1)  
**Synonym(s):** DBE; Dibasic ester mixture

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

**General use:** For industrial and laboratory use only  
**Uses advised against:** None specified

**1.3 Details of the supplier and of the safety data sheet**

**Manufacturer/Distributor**

Silver Fern Chemical, Inc.  
2226 Queen Anne Avenue North, Suite C  
Seattle, WA 98109 USA  
1-866-282-3384  
Website - www.silverfernchemical.com; email address - info@silverfernchemical.com

**1.4 Emergency telephone number**

+1-800-535-5053; Outside USA & Canada +1-352-323-3500

**SECTION 2 - HAZARDS IDENTIFICATION**

**2.1 Classification of substance or mixture**

**Product definition:** Mixture

**Classification in accordance with 29 CFR 1910 (OSHA HCS) and Regulation EC No. 1272/2008**  
Eye Irritation - Category 2B [H320]

**2.2 Label elements**

**Hazard symbol(s):** None

**Signal word:** **Warning**

**Hazard statement(s):** H320 - Causes eye irritation

**Precautionary statements:**

[Prevention] P264 - Wash hands and other exposed skin areas thoroughly after handling.

[Response] P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.  
P337 + P313 - If eye irritation persists: Get medical attention.

**2.3 Hazards not otherwise classified (HNOC) or not covered by GHS**

None as defined under 29 CFR 1900.1200.

**SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS**

**3.1 Substances**

No data available

**3.2 Mixtures**

% by Weight	Ingredient	CAS Number	EC Number	Index Number	GHS Classification
55 - 73	Dimethyl glutarate	1119-40-0	214-277-2	-----	-----
15 - 25	Dimethyl succinate	106-65-0	203-419-9	-----	-----
10 - 25	Dimethyl adipate	627-93-0	211-020-6	-----	-----

There are no additional ingredients present in this product which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

**SECTION 4 – FIRST AID MEASURES**

**4.1 Description of first aid measures**

**Inhalation:** If product mist or vapor causes respiratory irritation or distress, move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen; if respiratory arrest occurs, start artificial respiration by trained personnel. If unconscious, maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. If symptoms persist or if the victim feels unwell, seek medical attention.

**Eyes:** Immediately flush eyes with large amounts of water or saline solution for at least 15 minutes, occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do after first 2 minutes and continue rinsing. If irritation persists seek medical attention, preferably from an ophthalmologist.

**Skin:** Flush skin with large amounts of water while removing contaminated clothing. Wash the affected area with soap and water followed by thorough rinsing. Wash contaminated clothing and shoes before reuse. If irritation persists, seek medical attention.

**Ingestion:** Rinse mouth with water if the victim is conscious. Remove dentures if present. Do not induce vomiting unless directed to do so by medical personnel. Vomiting may occur spontaneously. To prevent aspiration of vomit into the lungs, lay the victim on one side with the head lower than the waist. Never give anything by mouth to an unconscious or convulsing person. Do not leave the victim unattended. Seek immediate medical attention.

#### 4.2 Most important symptoms and effects, both acute and delayed

##### Potential health symptoms and effects

**Eyes:** May cause mild to severe eye irritation. Symptoms may include redness, itching, pain, discomfort and tearing. Mist can cause eye irritation.

**Skin:** Not expected to be a skin irritant.

**Inhalation:** Not expected to be an inhalation hazard for normal handling due to the materials low vapor pressure.

**Ingestion:** May cause digestive upset when ingested in large quantities with nausea, vomiting, abdominal pain and diarrhea.

**Chronic:** No data available

#### 4.3 Indication of any immediate medical attention and special treatment needed

##### Advice to doctor and hospital personnel

Treat symptomatically and supportively.

### SECTION 5 – FIRE FIGHTING MEASURES

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#### 5.1 Extinguishing media

**Suitable methods of extinction:** Use extinguishing media suitable for the surrounding fire.

**Unsuitable methods of extinction:** Water jets or direct streams may spread the fire.

#### 5.2 Special hazards arising from the substance or mixture

Closed containers may rupture due to the buildup of pressure when exposed to extreme heat. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent or may be delayed. Obtain medical attention.

**Explosion hazards:** This product is not considered to be an explosion hazard.

#### 5.3 Advice to firefighters

Full protective equipment including self-contained breathing apparatus should be used. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion when exposed to extreme heat. If possible, water contaminated by this material must be contained from being discharged to any waterway, sewer or drain to prevent environmental contamination.

### SECTION 6 – ACCIDENTAL RELEASE MEASURES

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#### 6.1 Personal precautions, protective equipment and emergency procedures

Evacuate non-essential personnel. Wear appropriate protective clothing and equipment designated in Section 8.2. Ventilate the area. Remove all sources of ignition. No smoking. Clean up spills immediately. Spill creates a slip hazard.

#### 6.2 Environmental precautions

Avoid dispersal of spilled material or runoff and prevent contact with soil and entry into drains, sewers or waterways.

#### 6.3 Methods and materials for containment and cleaning up

Approach spill from upwind direction. DO NOT flush large spills down the drain. Cover drains and contain spill. Cover spill with a large quantity of inert absorbent. Do not use combustible material such as sawdust. Collect material using non-sparking tools and place into an approved container for proper disposal. Observe possible material restrictions (Sections 7.2 and 10.5). Do not allow material or runoff from rinsing contaminated areas to enter floor drains or storm drains and ditches that lead to waterways. Dispose of in accordance with federal, state and local regulations.

#### 6.4 Reference to other sections

For indications about waste treatment, see Section 13.

### SECTION 7 – STORAGE AND HANDLING

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#### 7.1 Precautions for safe handling

Wear all appropriate personal protective equipment specified in Section 8.2. Do not get in eyes or on skin or clothing. Do not inhale mist or vapor. No smoking. If normal use of material presents a respiratory hazard, use only adequate ventilation or wear an appropriate respirator. Wash contaminated clothing and shoes thoroughly before reuse.

##### Advice on protection against fire and explosion

Keep away from heat and sources of ignition.

#### 7.2 Conditions for safe storage, including any incompatibilities

Store in dry, cool, well-ventilated areas away from incompatible materials (see Section 10.5), food and drink. Transfer only to approved containers having correct labeling. Keep containers tightly closed when not in use. Protect containers against physical damage. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Containers are hazardous when empty as they contain product residue. Use appropriate containment to avoid environmental contamination. Ventilate closed areas. Keep out of reach of children.

### 7.3 Specific end uses

Apart from the uses mentioned in Section 1.2, no other specific uses are stipulated.

## SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Control parameters

Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

**Engineering measures:** Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation. Local exhaust is preferable. Refer to Section 7.1.

**Individual protection measures:** Wear protective clothing to prevent repeated or prolonged contact with product. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the representative supplier.

**Hygiene measures:** Facilities storing or using this material should be equipped with an eyewash station and safety shower. Change contaminated clothing. Preventive skin protection is recommended. Wash hands thoroughly after use, before eating, drinking, smoking or using the lavatory.

**Eye/face protection:** Wear safety glasses with unperforated side shields or protective splash goggles during handling or use.

**Hand protection:** For long periods of exposure wear gloves made of natural rubber, nitrile rubber, PVC or those recommended by glove supplier for protection against materials in Section 3. Gloves should be impermeable to chemicals and oil. Breakthrough time of selected gloves must be greater than the intended use period.

**Skin protection:** Wear protective clothing. Wear protective boots if the situation requires.

**Respiratory protection:** Always use an approved respirator when vapor/aerosols exceed permissible exposure limits. Where risk assessment shows air-purifying respirators are appropriate use a half-mask respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Follow OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.

**Environmental exposure controls:** Do not empty into drains.

*PPE must not be considered a long-term solution to exposure control. PPE usage must be accompanied by employer programs to properly select, maintain, clean fit and use. Consult a competent industrial hygiene resource to determine hazard potential and/or the PPE manufacturers to ensure adequate protection*



## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance	Clear, colorless liquid
Odor	Odorless to mildly sweet
Odor Threshold	No data available
Molecular Weight	Not applicable
Chemical Formula	Not applicable
pH	No data available
Freezing/Melting Point	≤ - 20 °C (≤ - 4 °F)
Boiling Point Range	195 - 225 °C (383 - 437 °F)
Evaporation Rate	No data available
Flammability (solid, gas)	Not applicable
Flash Point	99 - 100 °C (210 - 212 °F), closed cup
Autoignition Temperature	≥ 370 °C (≥ 689 °F)
Decomposition Temperature	No data available
Lower Explosive Limit (LEL)	0.9% (v)
Upper Explosive Limit (UEL)	8% (v)
Vapor Pressure	0.043 - 0.2 mm Hg @ 20 °C
Vapor Density	> 1 [Air = 1]
Specific Gravity	1.06 - 1.09
Viscosity, Kinematic	No data available
Solubility in Water	Partially miscible
Partition Coefficient (n-octanol/water)	log P <sub>ow</sub> = 1.0
Oxidizing Properties	Not applicable
Explosive Properties	Not applicable
Volatiles by Weight @ 21 °C	No data available

## 9.2 Other Data

No data available

## SECTION 10 – STABILITY AND REACTIVITY

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### 10.1 Reactivity

This material is stable under normal handling conditions and use.

### 10.2 Chemical Stability

This material is stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4 Conditions to avoid

Extreme heat, incompatible materials

### 10.5 Incompatible materials

Strong oxidizing agents, strong reducing agents, strong bases, strong acids

### 10.6 Hazardous decomposition products

Thermal decomposition products may include oxides of carbon.

## SECTION 11 – TOXICOLOGICAL INFORMATION

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### 11.1 Information on toxicological effects

#### Acute oral toxicity

LD<sub>50</sub>, rat: > 2,000 mg/kg (male/female)

#### Acute inhalation toxicity

LC<sub>50</sub>, rat: > 11 mg/l, 4 h (male/female)

#### Acute dermal toxicity

LD<sub>50</sub>, rat: > 2,000 mg/kg (male/female)

#### Skin irritation

May cause skin irritation.

#### Eye irritation

Causes eye irritation.

#### Sensitization

No data available

#### Carcinogenicity

No data available

#### Germ cell mutagenicity

No data available

#### Reproductive toxicity

No data available

#### Specific organ toxicity - single exposure

No data available

#### Specific organ toxicity - repeated exposure

No data available

#### Aspiration hazard

No data available

### 11.2 Further information

This product contains no substances present at levels greater than or equal to the 0.1% threshold (de minimis) that are identified as a probable, possible, potential or confirmed carcinogens by ACGIH, IARC, NTP or OSHA. No data is available regarding the mutagenicity or teratogenicity of this product, nor is there any available data that indicates that it causes adverse developmental or fertility effects.

Handle in accordance with good industrial hygiene and safety practice.

## SECTION 12 - ECOLOGICAL INFORMATION

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### 12.1 Toxicity

Large discharges or spills of this material may be harmful to aquatic life.

### 12.2 Persistence and degradability

This material is readily biodegradable

### 12.3 Bioaccumulation potential

The bioaccumulation potential for this material is low.

### 12.4 Mobility in soil

The mobility in soil is expected to be high.

### 12.5 Results of PBT and vPvB assessment

This substance is not persistent, bioaccumulative and toxic (PBT) and not very persistent and very bioaccumulative (vPvB).

### 12.6 Other effects

#### Additional ecological information

Do not allow material to run into surface waters, wastewater or soil.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## SECTION 13 – DISPOSAL CONSIDERATIONS

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### 13.1 Waste treatment methods

Methods of disposal: The generation of waste should be avoided or minimized whenever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products in accordance with national, state and local regulations. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

**RCRA F-Series:** No listings above the reportable threshold (de minimis)

**RCRA U-Series:** No listings above the reportable threshold (de minimis)

## SECTION 14 – TRANSPORTATION INFORMATION

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**Note:** Transportation information provided is for reference only. Customer is urged to consult 49 CFR 100 - 177, IMDG, IATA, EC, United Nations TDG and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

<b>USA DOT (Ground Transportation) - Bulk and Non-bulk</b>	Not regulated for transport
<b>IMO/IMDG (Water Transportation)</b>	Not regulated for transport (Consult IMO regulations before transporting ocean bulk.)
<b>ICAO/IATA (Air Transportation)</b>	Not regulated for transport
<b>RID/ADR (Rail Transportation)</b>	Not regulated for transport

## SECTION 15 - REGULATORY INFORMATION

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### 15.1 Safety, health and environmental regulations/legislation specific for substance or mixture

#### U. S. Federal Regulations

**OSHA Hazard Communication Standard:** This material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

**OSHA Process Safety Management Standard:** This product is not regulated under OSHA PSM Standard 29 CFR 1910.119.

**EPA Risk Management Planning Standard:** This product is not regulated under EPA RMP Standard (RMP) 40 CFR Part 68.

**EPA Federal Insecticide, Fungicide and Rodenticide Act:** This product is not a registered Pesticide under the FIFRA, 40 CFR Part 150.

**Toxic Substance Control Act (TSCA) Inventory:** All substances in this product are listed on the TSCA Inventory. This product is not subject to TSCA 12(b) Export Notification.

**Drug Enforcement Administration (DEA) List 2, Essential Chemicals (21 CFR 1310.02(b)) and 1310.4(f)(2)) and Chemical Code Number**  
No listings

**Drug Enforcement Administration (DEA) Lists 1 & 2, Exempt Chemical Mixtures (21 CFR 1310.12(c)) and Code Number:** No listings

**Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) Chemicals:** No listings

#### **Superfund Amendments and Reauthorization Act (SARA)**

**SARA Section 311/312 Hazard Categories:** None

**SARA 313 Information:** None of the chemicals in this product exceed the threshold (de minimis) reporting levels established by Section 313 of the Emergency Planning and Community Right-to Know Act of 1986.

**SARA 302/304 Extremely Hazardous Substance:** None of the components of this product exceed the threshold (de minimis) reporting levels established by these sections of Title III of SARA.

**SARA 302/304 Emergency Planning & Notification:** None of the components of this product exceed the threshold (de minimis) reporting levels established by these sections of Title III of SARA.

**Comprehensive Response Compensation and Liability Act (CERCLA):** No components of the product exceed the threshold (de minimis) reporting levels for hazardous wastes established by CERCLA.

#### **Clean Air Act (CAA)**

This product does not contain any Hazardous Air Pollutants (HAPs) designated in CAA Section 112 (b).

This product does not contain Class 1 ozone depletors.  
This product does not contain Class 2 ozone depletors.

#### Clean Water Act (CWA)

This product does not contain Hazardous Substances.  
This product does not contain Priority Pollutants.  
This product does not contain Toxic Pollutants.

#### U.S. State Regulations

##### California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986

This product contains no chemical(s) known to the state of California to cause cancer birth defects or reproductive harm in concentrations that exceed the threshold (de minimis) reporting levels established under Proposition 65.

##### Other U.S. State Inventories

None of the components of this product exceed the threshold (de minimis) reporting levels established by any State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants lists.

#### Canada

**WHMIS Hazard Classification:** Not a dangerous product according to HPR classification criteria

**Canadian National Pollutant Release Inventory (NPRI):** None of the chemicals in this product are listed on the NPRI.

#### European Economic Community

**WGK, Germany (Water danger/protection):** 1 (slightly hazardous to water)

#### Global Chemical Inventory Lists

Country	Inventory Name	Listed
Canada	Domestic Substance List (DSL)	Yes
Canada	Non-Domestic Substance List (NDSL)	No
Europe	Inventory of New and Existing Chemicals (EINECS)	Yes
United States	Toxic Substance Control Act (TSCA)	Yes
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
New Zealand	New Zealand Inventory of Chemicals (NZIoC)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (KECI)	Yes
Philippines	Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Yes

\*Yes - All components of this product comply with the inventory requirements administered by the governing country.  
No - One or more components of this product are not on the inventory or are exempt from listing.

## 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

## SECTION 16 - OTHER INFORMATION

### Hazardous Material Information System (HMIS)

HEALTH	1
FLAMMABILITY	1
PHYSICAL HAZARD	0
PERSONAL PROTECTION	B

B = safety glasses & gloves

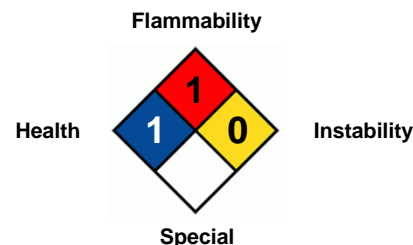
#### HMIS Hazard Rating Legend

0 = Minimal 1 = Slight 2 = Moderate  
3 = Serious 4 = Severe  
\* = Chronic Health Hazard

#### NFPA Hazard Rating Legend

0 = Insignificant 1 = Slight 2 = Moderate  
3 = High 4 = Extreme

### National Fire Protection Association (NFPA)



### Abbreviation Key

<b>ACGIH</b>	American Conference of Governmental Industrial Hygienists	<b>LD<sub>50</sub></b>	Lowest Lethal Dose
<b>ADR</b>	Accord Dangereux Routier (European regulations concerning the international transport of dangerous goods by road)	<b>mppcf</b>	Millions of Particles Per Cubic Foot
<b>CAS</b>	Chemical Abstract Services	<b>NA</b>	North America
<b>CFR</b>	Code of Federal Regulations	<b>NAERG</b>	North American Emergency Response Guide Book
<b>COC</b>	Cleveland Open Cup	<b>NIOSH</b>	National Institute for Occupational Safety & Health
<b>DOT</b>	Department of Transportation	<b>NTP</b>	National Toxicology Program
<b>EC<sub>50</sub></b>	Half maximal effective concentration	<b>OSHA</b>	Occupational Safety and Health Administration
<b>EMS</b>	Emergency Response Procedures for Ships Carrying	<b>PBT</b>	Persistent, Bioaccumulating and Toxic
<b>EPA</b>	Environmental Protection Agency	<b>PEL</b>	Permissible exposure limit
<b>ErC<sub>50</sub></b>	Reduction of Growth Rate	<b>PMCC</b>	Pensky-Martens Closed Cup
<b>ERG</b>	Emergency Response Guide Book	<b>ppm</b>	Parts Per Million

<b>FDA</b>	Food and Drug Administration
<b>GHS</b>	Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
<b>HCS</b>	Hazard Communication Standard
<b>IARC</b>	International Agency for Research on Cancer
<b>IATA</b>	International Air Transport Association
<b>IC<sub>50</sub></b>	Half Maximal Inhibitory Concentration
<b>ICAO</b>	International Civil Aviation Organization
<b>IDLH</b>	Immediately Dangerous to Life and Health
<b>IMDG</b>	International Maritime Dangerous Goods
<b>IMO</b>	International Maritime Organization
<b>LC<sub>50</sub></b>	50% Lethal Concentration
<b>LD<sub>50</sub></b>	50% Lethal Dose

<b>RCRA</b>	Resource Conservation and Recovery Act
<b>RID</b>	Dangerous Goods by Rail
<b>RQ</b>	Reportable Quantity
<b>TCC/Tag</b>	Tagliabue Closed Cup
<b>TLV</b>	Threshold Limit Value
<b>TSCA</b>	Toxic Substance Control Act
<b>TWA</b>	Time-weighted Average
<b>UN</b>	United Nations
<b>VOC</b>	Volatile Organic Compounds
<b>vPvB</b>	Very Persistent and Very Bioaccumulating
<b>WHMIS</b>	Workplace Hazardous Materials Information System

#### **DISCLAIMER OF RESPONSIBILITY**

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Revision date: 13 December 2021, Version 2

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