1. Identification

Name
Dimethyl adipate (15 wt.%) (and) dimethyl succinate (20 wt.%) (and) dimethyl glutarate (65 wt.%)

CAS Number
95481-62-2

Recommendation for the chemical and restrictions on use

Applications
Research and development/Performance chemical/Industrial solvent.

Restrictions
No specific uses advised against are identified.

Supplier's Details

InKemia Green Chemicals, Inc.
1213 West Loop North Suite 140, Houston, TX 77005
+1 (713) 909-7717
web@inkemiagreenchemicals.com

Emergency contact number

InKemia Green Chemicals, Inc.
Tel: +1 (713) 909-7717
For emergency calls only.

2. Hazards

Classification of the substance or mixture

Classification
Acute aquatic toxicity (Category 3), H402.

Label elements

Pictogram
None

Signal word
-

Hazard Statements
H402 - Harmful to aquatic life.

Precautionary Statements
P273 - Avoid release to the environment.
P501 - Dispose of contents/container to an approved waste disposal plant.

3 - Composition/information on ingredients

Substances

Chemical Name
Dimethyl adipate (15 wt.%) (and) dimethyl succinate (20 wt.%) (and) dimethyl glutarate (65 wt.%)

Synonyms
Dibasic ester (1): Reaction mixture of dimethyl adipate, dimethyl glutarate and dimethyl succinate.
Hazardous components

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl adipate</td>
<td>Aquatic Acute 3; H402</td>
<td>&lt;25 wt.%</td>
</tr>
</tbody>
</table>

Note: For the full text of the H-Statements mentioned in this Section, see Section 16.

Impurities and stabilizing additives

No data available.

Mixtures

This product is a reaction mixture of dicarboxylic acids esters with an average composition of:

- Dimethyl glutarate 55-65 wt.%
- Dimethyl succinate 15-25 wt.%
- Dimethyl adipate 10-25 wt.%
- Other components 0-1 wt.%

The above concentration values do not reflect absolute minimus and maximus; these values are typical which may vary from time to time.

4 - First-aid measures

Description of first aid measures

General information
Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel.

Inhalation
Remove from exposure, moving to fresh air. Artificial respiration and oxygen are necessary if not breathing. Consult a physician.

Ingestion
Wash out mouth with water if the person is conscious. Do not induce vomiting. Consult a physician.

Skin contact
Immediately wash skin with soap and copious amounts of water.
Eye contact

Immediately irrigate with copious amounts of water for 15 minutes. Remove contact lenses, if present and easy to do. Consult a physician.

Protection of first-aiders

First aid personnel should wear appropriate protective equipment during any rescue.

Most important symptoms and effects, both acute and delayed

General information

The severity of the symptoms described might vary depending on the concentration and length of exposure.

Inhalation

Breathing fumes and vapors may cause irritation and discomfort.

Ingestion

May be slightly harmful if swallowed.

Skin contact

May cause skin irritation to susceptible persons.

Eye contact

May cause eye irritation to susceptible persons.

Indication of immediate medical attention and special treatment need

Notes for the doctor

Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5 - Fire-fighting measure

Extinguishing media

Suitable extinguisher media


Unsuitable extinguisher media

Solid water stream may scatter and spread the fire.

Special hazards arising from the substance of mixture

Specific hazards

Gases hazardous to health may be formed. Carbon oxides.

Hazardous combustion products

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

Advice for firefighters

Protective actions during firefighting

Avoid breathing fire gases or vapors. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Avoid discharge to the aquatic environment. Control runoff water by containing and keeping it out of sewers and watercourses. If the risk of water pollution occurs, notify appropriate authorities.
Special protective equipment for firefighting
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter’s clothing including helmets, protective boots, and gloves provide a basic level of protection for chemical incidents.

6 – Accidental release measures

Personal precautions, protective equipment, and emergency procedures

Personal Precautions
Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not touch or walk into the spilled material.

Environmental precautions

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleanup

Methods for cleaning
Contain and remove the spillage, soaking up the residue with non-flammable absorbent. Place in an adequate container for immediate disposal. Eliminate sources of ignition. For waste disposal see Section 13.

Reference to other sections
For personal protection see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For disposal see section 13.

7 – Handling and storage

Precautions for safe handling

Usage precautions
Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink, and animal feeding stuff. Keep container tightly sealed when not in use. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers. For precautions see Section 2. When the product is handled appropriately, hazardous effects are unlikely to occur. Handle in accordance with good industrial hygiene and safety practice.

Advice on general occupational hygiene
Promptly wash if in contact with skin. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse.

**Conditions for safe storage, including any Incompatibilities**

**Storage precautions**

Store away from incompatible materials (see Section 10). Keep only in the original container. Keep container tightly closed, in a cool, well-ventilated place. Keep containers upright. Protect containers from damage. Keep in a fresh and dry place, avoiding direct sunlight. Keep container tightly sealed, in a fireproof place.

**Storage class**

Miscellaneous hazardous material storage. Preferably in a well-ventilated solvent cabinet.

**Specific end uses**

The identified uses for this product are in Section 1.

### 8 - Exposure controls/personal protection

**Control parameters**

**Occupational exposure limits:**

Contains no substances with occupational exposure limit values.

**Protective equipment**

![Diagram](image)

**Engineering control measures**

Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

**Eye/Face protection**

Wear safety glasses with side-shields.

**Hand protection**
Avoid skin contact. Wear protective clothes and solvent resistant gloves (nitrile).

**Other skin and body protection**

Use engineering controls to reduce air contamination to permissible exposure level. Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapor contact.

**Hygiene measures**

Wash after use and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.

**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with a 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).

**Environmental exposure**

Avoid discharging to drains.

### 9 – Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid colorless.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available.</td>
</tr>
<tr>
<td>Melting point/Freezing point, °C</td>
<td>-55.4</td>
</tr>
<tr>
<td>Boiling point, °C</td>
<td>200-230</td>
</tr>
<tr>
<td>Flash point</td>
<td>99</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available.</td>
</tr>
<tr>
<td>Upper / lower flammability or/and explosive limits</td>
<td>Upper explosion limit: 12.5 v/v, % / Lower explosion limit: 1.5 v/v, %</td>
</tr>
<tr>
<td>Vapor pressure @ 20 °C, kPa</td>
<td>0.06</td>
</tr>
<tr>
<td>Vapor density (air=1)</td>
<td>No data available.</td>
</tr>
<tr>
<td>Relative density @ 1.09</td>
<td>1.09</td>
</tr>
<tr>
<td>Water miscibility @ 20 °C, g/L</td>
<td>5.00 (Low miscibility)</td>
</tr>
<tr>
<td>Solubility (other)</td>
<td>No data available.</td>
</tr>
<tr>
<td>Partition coefficient, log Pow @ 25 °C</td>
<td>0.6-1.4</td>
</tr>
<tr>
<td>Autoignition temperature, °C</td>
<td>No data available.</td>
</tr>
<tr>
<td>Decomposition temperature, °C</td>
<td>No data available.</td>
</tr>
<tr>
<td>Dynamic viscosity @ 25 °C, cP</td>
<td>2.40-2.50</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flammability</td>
<td>Non-flammable liquid.</td>
</tr>
</tbody>
</table>
25 ºC, g/cm³

10 – Stability and reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactivity</td>
<td>No data available.</td>
</tr>
<tr>
<td>Chemical stability</td>
<td>Stable under normal storage conditions.</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>Hazardous polymerization do not occur under normal conditions.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>Heat and ignition sources.</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>Irritating and toxic fumes and gases may be emitted upon decomposition. Carbon oxides.</td>
</tr>
</tbody>
</table>

11 – Toxicological information

**Acute toxicity – oral**

<table>
<thead>
<tr>
<th>Acute toxicity – oral (LD50, mg/kg)</th>
<th>&gt;5,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
<td>Rat</td>
</tr>
<tr>
<td>Notes (oral LD50)</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
</tbody>
</table>

**Acute toxicity – dermal**

<table>
<thead>
<tr>
<th>Acute toxicity – dermal (LD50, mg/kg)</th>
<th>&gt;2,250</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
<td>Rabbit</td>
</tr>
<tr>
<td>Notes (Dermal LD50)</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
</tbody>
</table>

**Acute toxicity – inhalation**

<table>
<thead>
<tr>
<th>Acute toxicity – inhalation (LC50, dust/mist mg/l)</th>
<th>&gt;11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
<td>Rat</td>
</tr>
<tr>
<td>Notes (Inhalation LD50)</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation**

<table>
<thead>
<tr>
<th>Result</th>
<th>Rabbit - No irritation (4 h.)</th>
</tr>
</thead>
</table>

**Serious eye damage/irritation**

<table>
<thead>
<tr>
<th>Result</th>
<th>Rabbit - May cause irritation, corneal opacity.</th>
</tr>
</thead>
</table>

**Respiratory sensitization**

<table>
<thead>
<tr>
<th>Result</th>
<th>Based on available data the classification criteria are not met.</th>
</tr>
</thead>
</table>

**Skin sensitization**
Result

**Germ cell mutagenicity**
Based on available data the classification criteria are not met.

**Genotoxicity – in vitro**
Based on available data the classification criteria are not met.

**Genotoxicity – in vivo**
Based on available data the classification criteria are not met.

**Carcinogenicity**

- **IARC**
  No component of this product present at levels greater than or equal to 0.1% is identified as human carcinogen by IARC.

- **ACGIH**
  No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

- **NTP**
  No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

- **OSHA**
  No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

- **Fertility**
  Based on available data the classification criteria are not met.

- **Development**
  Based on available data the classification criteria are not met.

**Specific target organ toxicity**

- **STOT-single exposure**
  No data available.

- **STOT-repeated exposure**
  No data available.

**Additional information**

- **General information**
  This product is not classified as hazardous.

- **Inhalation**
  No data available.

- **Ingestion**
  Human evidence - Stomach irregularities.

- **Skin contact**
  Not irritating to skin.

- **Eye contact**
  May cause slight eye irritation.

- **Route of entry**
  No data available.

- **Target organs**
  Not specific target organ known.

**12 – Ecological information**

**Toxicity**
Ecotoxicity

Harmful to aquatic life. Large or frequent spills will have dangerous effects on the environment.

**Acute toxicity**

**Toxicity to fish**

LC$_{50}$ (96h.) = 18-24 mg/l (Fathead minnow)

**Aquatic invertebrates**

EC$_{50}$ (48h.) = 115 mg/l (Daphnia magna)

**Aquatic plants**

NOEC (72h.) = 36 mg/l (G. algae)

**Persistency and biodegradability**

**Persistency and biodegradability**

Readily biodegradable (97 % (4 days)).

Result: -

This product is readily biodegradable.

**Biodegradation**

Readily biodegradable (EPI Suite estimation).

This product is unlikely to persist or/and bioaccumulate in the environment (BCF<500, logPow=0.6-1.4).

**Biological oxygen demand(mg/g)**

No data available.

**Chemical oxygen demand(mg/g)**

No data available.

**BOD/COD ratio**

No data available.

**Bioaccumulative potential**

No data available.

**Mobility in soil**

No data available.

**Results of PBT and vPvB**

No data available.

**Other adverse effects**

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

Harmful to aquatic life.

---

**13 - Disposal considerations**

**Waste treatment methods**

**General information**

The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of safely according to local regulations. When handling waste, the safety
precautions applying to the handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues.

Disposal methods
Do not empty into drains. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents. Incineration and landfill should only be considered when recycling is not feasible.

14 – Transport information

<table>
<thead>
<tr>
<th>DOT (US)</th>
<th>Not classified as hazardous goods.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMDG</td>
<td>Not classified as hazardous goods.</td>
</tr>
<tr>
<td>IATA</td>
<td>Not classified as hazardous goods.</td>
</tr>
<tr>
<td>Transport in bulk according to</td>
<td>Annex II of MARPOL 73/78, and the IBC Code: Not applicable.</td>
</tr>
</tbody>
</table>

15 – Regulatory information

US Federal Regulations and state regulations
Components of the product are listed in the quoted regulations. For details, please refer to the regulations directly. This list is not exhaustive; please check for other applicable regulations.

This product has been classified by hazard criteria of the Controlled Products Regulations, and the SDS contains all the information required by the Controlled Products Regulations.

US Federal Regulations

SARA 302 Section 302 (Specific toxic chemical listings)
- Dimethyl sulphate (CAS: 77-78-1); RQ 100lbs
- Hydrogen cyanide (CAS: 74-90-8); RQ 10lbs

SARA Section 311/312 (Specific toxic chemical listings)
- No SARA hazards.

SARA Section 313 (Specific toxic chemical listings)
- This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

RCRA (hazardous waste code)
- None of the ingredients are listed.

TSCA (Toxic Substances Control Act)
- All the components are listed on the TSCA inventory.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)
- None of the ingredients are listed.

US State Regulations

www.inkemiagreenchemicals.com 11 (713)-909-7717 1213 West Loop North, Suite #140, Houston, TX 77055
Proposition 65 (California)
Contains < 0.2 wt.% Methanol
Contains < 15ppm Hydrogen cyanide
Contains < 50ppm Dimethyl sulphate
Chemicals are known to cause cancer
Dimethyl sulphate (CAS: 77-78-1)
Chemicals are known to cause reproductive toxicity for females
Methanol (CAS: 67-56-1)
Chemicals are known to cause reproductive toxicity for males
Hydrogen cyanide (CAS: 74-90-8)

Massachusetts Right to Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right to Know Components
No components are subject to the Pennsylvania Right to Know Act.

New Jersey Right to Know Components
No components are subject to the New Jersey Right to Know Act.

Canada
Canadian Domestic Substances List (DSL)
All the components are listed on Canada's DSL List.

Canadian NPRI Ingredient Disclosure list (limit 0.1%)
The substance is not specified on any list. There is no control measure imposed to this substance.

Canadian NPRI Ingredient Disclosure list (limit 1%)
The substance is not specified on any list. There is no control measure imposed to this substance.

16 – Other information

Full text of H-Statements referred to under sections 2 and 3
Acute aquatic toxicity.
H402 Harmful to aquatic life.

GHS Column Model 2017 Classification
Acute health hazards (single exp) Negligible
Chronic health hazards (repeated exp.) Negligible
Environmental hazards Negligible
Physical-chemical hazards Negligible

Further Information
SDS: Dimethyl adipate (15 wt.%) (and) dimethyl succinate (20 wt.%) (and) dimethyl glutarate (65 wt.%)

The information above is believed to be accurate and represents the best information available. However, we make no warranty of merchantability or any other warranty, express or implied, on such information and we assume no liability resulting from its use. Users should make their investigations to determine the suitability of the information for their purposes. In no event shall the InKemia Green Chemicals, Inc. be liable for any claims, losses or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages arising, even if the InKemia Green Chemicals, Inc. has been advised of the possibility of such damages.

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