1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Name: Linoleic Acid-d4
Product Code: SC-224040

Recommended use of the chemical and restrictions on use
For research use only. Not intended for diagnostic or therapeutic use.

Details of the supplier of the safety data sheet
Santa Cruz Biotechnology, Inc.
10410 Finnell Street
Dallas, TX 75220
831.457.3800
800.457.3801
scbt@scbt.com

2. HAZARDS IDENTIFICATION

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification
Serious eye damage/eye irritation: Category 2A
Flammable liquids: Category 2

Label elements
Signal word: Danger
Hazard statements:
- May be harmful if inhaled
- Causes serious eye irritation
- Highly flammable liquid and vapor

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use only non-sparking tools
Take precautionary measures against static discharge

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
In case of fire: Use CO2, dry chemical, or foam for extinction

Precautionary Statements - Storage
Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal
Hazards not otherwise classified (HNOC)
Hazards not otherwise classified (HNOC)  Not applicable

Other Information

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health hazards</th>
<th>2</th>
<th>HMIS</th>
<th>Health hazards</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>3</td>
<td></td>
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<td>3</td>
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<tr>
<td>Stability</td>
<td>0</td>
<td></td>
<td>Physical hazards</td>
<td>0</td>
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</tr>
<tr>
<td>Physical and chemical properties</td>
<td>-</td>
<td></td>
<td>Personal protection</td>
<td>-</td>
<td></td>
</tr>
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</table>

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Molecular Weight</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>79050-23-0</td>
<td>284.5</td>
<td>C₁₈H₂₈D₄O₂</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No.</th>
<th>Weight-%</th>
<th>Oral LD₅₀</th>
<th>Dermal LD₅₀</th>
<th>Inhalation LC₅₀</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Acetate</td>
<td>79-20-9</td>
<td>&gt;98</td>
<td>&gt; 5 g/kg ( Rat )</td>
<td>&gt; 5 g/kg ( Rabbit )</td>
<td>&gt; 49000 mg/m³ ( Rat ) 4 h</td>
</tr>
<tr>
<td>Linoleic Acid-d4</td>
<td>79050-23-0</td>
<td>1 - 5</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First Aid Measures

General advice
Immediate medical attention is required. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). If symptoms persist, call a physician.

Eye contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician. Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician. Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing.

Skin Contact
Wash off immediately with plenty of water. Immediate medical attention is not required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician.

Inhalation
Remove to fresh air. If symptoms persist, call a physician. Immediate medical attention is not required. Move to fresh air in case of accidental inhalation of vapors.

Ingestion
Immediate medical attention is not required. Rinse mouth. Drink plenty of water. Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.

Self-protection of the first aider
Remove all sources of ignition. Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms
No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
No information available.

**Specific hazards arising from the chemical**

Specific hazards arising from the chemical
Extremely flammable.

Hazardous combustion products
Carbon oxides.

**Explosion data**

Sensitivity to Mechanical Impact
No information available.

Sensitivity to Static Discharge
No information available.

**Protective equipment and precautions for firefighters**

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

Personal precautions
Remove all sources of ignition. Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Use personal protective equipment as required. Keep people away from and upwind of spill/leak.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Pick up and transfer to properly labeled containers. Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Soak up with inert absorbent material.

7. HANDLING AND STORAGE

**Precautions for safe handling**

Advice on safe handling
Ensure adequate ventilation, especially in confined areas. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. All equipment used when handling the product must be grounded. Use with local exhaust ventilation. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray.

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

Storage Conditions
Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Keep containers tightly closed in a cool, well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Store at -20 °C.

Incompatible materials
None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
Control parameters
Exposure Guidelines
- Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Other Information
Chemical name | ACGIH TLV | OSHA PEL | NIOSH IDLH
--- | --- | --- | ---
Methyl Acetate 79-20-9 | STEL: 250 ppm TWA: 200 ppm | TWA: 200 ppm TWA: 610 mg/m³ (vacated) TWA: 200 ppm (vacated) STEL: 250 ppm (vacated) STEL: 760 mg/m³³ | IDLH: 3100 ppm TWA: 200 ppm TWA: 610 mg/m³³ STEL: 250 ppm STEL: 760 mg/m³³

NIOSH IDLH: Immediately Dangerous to Life or Health

Appropriate engineering controls
- Showers
- Eyewash stations
- Ventilation systems

Individual protection measures, such as personal protective equipment
- Eye/face protection: Tight sealing safety goggles. Face protection shield.
- Skin and Body Protection: Wear protective gloves and protective clothing.
- Respiratory protection: If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations
- When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>No information available</td>
</tr>
<tr>
<td>Odor</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>57 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>-10.00 °C CC (closed cup)</td>
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<td>Liquid Density</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
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<tr>
<td>Upper flammability limits</td>
<td>16.0%</td>
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<tr>
<td>Lower flammability limit</td>
<td>3.1%</td>
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<tr>
<td>Vapor pressure</td>
<td>173 mmHg</td>
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<tr>
<td>Vapor density</td>
<td>No information available</td>
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<tr>
<td>Specific gravity</td>
<td>No information available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>No information available</td>
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<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition coefficient</td>
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<tr>
<td>Autoignition temperature</td>
<td>455.00 °C</td>
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<tr>
<td>Decomposition temperature</td>
<td>No information available</td>
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<tr>
<td>Kinematic viscosity</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY
Reactivity
Not applicable

Chemical stability
Stable under recommended storage conditions.
Possibility of Hazardous Reactions
None under normal processing.
Hazardous polymerization
No information available.
Conditions to avoid
Heat, flames and sparks.
Incompatible materials
Strong oxidizing agents.
Hazardous Decomposition Products
Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
inhalation No data available.
Eye contact No data available.
Skin Contact No data available.
Ingestion No data available.

Information on toxicological effects
Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure
Chronic Toxicity Avoid repeated exposure.
Target Organ Effects Central nervous system, Eyes, Respiratory system, Skin.

Numerical measures of toxicity - Product Information
Unknown acute toxicity No information available.
The following values are calculated based on chapter 3.1 of the GHS document
ATEmix (oral) 5056 mg/kg
ATEmix (dermal) 5056 mg/kg
ATEmix (inhalation-dust/mist) 49.5 mg/l
ATEmix (inhalation-vapor) 49495 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity May cause long lasting harmful effects to aquatic life

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Toxicity to Microorganisms</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Acetate</td>
<td>120: 72 h Desmodesmus subspicatus mg/L EC50</td>
<td>250 - 350: 96 h Brachydanio rerio mg/L LC50 static 295 - 348: 96 h Pimephales promelas mg/L LC50 flow-through</td>
<td>-</td>
<td>1026.7: 48 h Daphnia magna mg/L EC50</td>
</tr>
</tbody>
</table>

1% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Persistence and degradability No information available.
Bioaccumulation No information available.
Mobility No information available.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Partition coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Acetate</td>
<td>0.18</td>
</tr>
</tbody>
</table>

13. DISPOSAL CONSIDERATIONS

Santa Cruz Biotechnology, Inc.  www.scbt.com
Disposal of wastes
This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

Contaminated packaging
Do not reuse container.

Other Information
Waste codes should be assigned by the user based on the application for which the product was used.

US EPA Waste Number
D001

California Hazardous Waste Status
This product contains one or more substances that are listed with the State of California as a hazardous waste.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>California Hazardous Waste Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Acetate</td>
<td>Toxic Ignitable</td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

DOT
UN/ID no
UN1231
Hazard Class
3
Packing Group
II
Proper shipping name
Methyl acetate
Description
UN1231, Methyl acetate, 3, II
Emergency Response Guide Number
129

IMDG
UN/ID no
UN1231
Hazard Class
3
Packing Group
II
Proper shipping name
Methyl acetate
Description
UN1231, Methyl acetate, 3, II, (-10°C c.c.)
EmS-No
F-E, S-D

IATA
UN/ID no
UN1231
Hazard Class
3
Packing Group
II
Proper shipping name
Methyl acetate
Description
UN1231, Methyl acetate, 3, II
ERG Code
3H

15. REGULATORY INFORMATION

International Inventories
All of the components in the product are on the following Inventory lists
No information available

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>ENCS</th>
<th>IECSC</th>
<th>KECL</th>
<th>PICCS</th>
<th>AICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Acetate</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

X - Listed
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories
Acute health hazard Yes
Chronic Health Hazard No
Fire hazard Yes
Sudden release of pressure hazard No
Reactive hazard No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Acetate</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>79-20-9</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

16. OTHER INFORMATION

Revision note No information available

Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet