Material Safety Data Sheet

Naphthenic acid

sc-228814

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
Naphthenic acid

STATEMENT OF HAZARDOUS NATURE

NFPA

SUPPLIER
Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, California 95060
800.457.3801 or 831.457.3800

EMERGENCY
ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255
(1-800-CHEMCALL) or call +613 9573 3112

SYNONYMS
"saturated higher fatty acids", "naphthenic base crude", "drier precursor", Agenap, Naphid, "Sunaptic acid b", "Sunaptic acid c", "naphthenic acids", "petroleum crude"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Toxicity</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Body Contact</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Reactivity</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Chronic</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Key:
EXTREME
HIGH
MODERATE
LOW

1 of 10
EMERGENCY OVERVIEW
RISK
POTENTIAL HEALTH EFFECTS
ACUTE HEALTH EFFECTS

SWALLOWED
- The material has NOT been classified as "harmful by ingestion".
  This is because of the lack of corroborating animal or human evidence.
- The LD50s of naphthenic acids (a mixture of isomers of dimethylcyclohexanecarboxylic acid) in mice and rats were 1770 and 1750 mg/kg, respectively.
  Cumulative properties of naphthenic acids were mild.

EYE
- Although the liquid is not thought to be an irritant, direct contact with the eye may produce transient discomfort characterized by tearing or conjunctival redness (as with windburn).

SKIN
- The material is not thought to produce adverse health effects or skin irritation following contact (as classified using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
- The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis.
  The material is unlikely to produce an irritant dermatitis as described in EC Directives.
- Open cuts, abraded or irritated skin should not be exposed to this material.

INHALED
- The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
- There is some evidence to suggest that the material can cause respiratory irritation in some persons.
  The body’s response to such irritation can cause further lung damage.
- Inhalation hazard is increased at higher temperatures.
- The material has NOT been classified as "harmful by inhalation".
  This is because of the lack of corroborating animal or human evidence.
- Acute effects from inhalation of high vapor concentrations may be chest and nasal irritation with coughing, sneezing, headache and even nausea.

CHRONIC HEALTH EFFECTS
- Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified using animal models); nevertheless exposure by all routes should be minimized as a matter of course.
  In dogs and rabbits that received naphthenic acids (10 mg/kg, intravenously, and 5-15 mg/kg, intramuscularly, respectively), a notable effect was observed on haemopoiesis of both the red and white cells and a greater effect was observed on platelet formation.

  In a one generation reproduction study naphthenic acid in a carrier oil was administered dermally to 12 proven male New Zealand White rabbits at 2 ml/animal for 6 hrs, 5 days each week over 10, weeks and observed for an additional 12 week post-exposure period. There were no significant differences between treated and control animals in the following survival, body weights, testes weights, numbers of animals achieving 1 or 2 viable litters or pregnancies, numbers of implantations, pre- or post-implantation losses, numbers of viable fetuses. There were no signs of toxicity either systemically or at the site of application and no macroscopic or microscopic pathological findings.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS
naphthenic acid  1338-24-5  >98
being a mixture of
(a) saturated monocyclic acids [Cn-H(2n-1)-COOH]
with the carbon ring invariably five membered e.g.,
23 dimethylcyclopentylacetic acid
(b) saturated cyclic carboxylic acids [Cn-H(2n-3)-COOH]
(c) aliphatic carboxylic acids [Cn-H(2n-3)-COOH]
NOTE Commercial refined naphthenic acid contains an
unsaponifiable fraction, essentially,
mineral oil  Not avail.

Section 4 - FIRST AID MEASURES

SWALLOWED
• Immediately give a glass of water.
• First aid is not generally required. If in doubt, contact a Poisons Information Center or a doctor.

EYE
If this product comes in contact with eyes
• Wash out immediately with water.
• If irritation continues, seek medical attention.

SKIN
If skin or hair contact occurs
• Flush skin and hair with running water (and soap if available).
• Seek medical attention in event of irritation.

INHALED
• If fumes or combustion products are inhaled remove from contaminated area.
• Other measures are usually unnecessary.

NOTES TO PHYSICIAN
■ Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG)  Not available
Upper Explosive Limit (%)  Not available
Specific Gravity (water=1)  0.97 (typical)
Lower Explosive Limit (%)  Not available

EXTINGUISHING MEDIA
• Foam.
• Dry chemical powder.

FIRE FIGHTING
• Alert Emergency Responders and tell them location and nature of hazard.
• Wear full body protective clothing with breathing apparatus.
When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 100 metres in all directions.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS
• Combustible.
• Slight fire hazard when exposed to heat or flame.
Combustion products include carbon dioxide (CO2), other pyrolysis products typical of burning organic material.

**FIRE INCOMPATIBILITY**
Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

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- Foam.
- Dry chemical powder.

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**Section 6 - ACCIDENTAL RELEASE MEASURES**

**MINOR SPILLS**
Environmental hazard - contain spillage.
- Clean up all spills immediately.
- Avoid breathing vapors and contact with skin and eyes.

**MAJOR SPILLS**
Environmental hazard - contain spillage.
Moderate hazard.
- Clear area of personnel and move upwind.
- Alert Emergency Responders and tell them location and nature of hazard.

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**Section 7 - HANDLING AND STORAGE**

**PROCEDURE FOR HANDLING**
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.

**RECOMMENDED STORAGE METHODS**
- Metal can or drum
- Packing as recommended by manufacturer.

**STORAGE REQUIREMENTS**
- Store in original containers.
- Keep containers securely sealed.

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**Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

**EXPOSURE CONTROLS**

<table>
<thead>
<tr>
<th>Source</th>
<th>Material</th>
<th>TWA ppm</th>
<th>TWA mg/m³</th>
<th>STEL ppm</th>
<th>STEL mg/m³</th>
<th>Peak ppm</th>
<th>Peak mg/m³</th>
<th>TWA F/CC</th>
<th>Notes</th>
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<td>US NIOSH Recommended</td>
<td>mineral oil (Oil mist (mineral))</td>
<td>5</td>
<td>10</td>
<td></td>
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<tr>
<td>Region</td>
<td>Substance</td>
<td>Maximum Exposure Limit</td>
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<tr>
<td>Canada - Quebec</td>
<td>mineral oil (Mineral oil (mist))</td>
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<tr>
<td>Canada - Northwest Territories</td>
<td>mineral oil (Oil Mist, mineral)</td>
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<tr>
<td>US - Tennessee</td>
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<tr>
<td>US - California</td>
<td>mineral oil (Oil (mineral) mist, particulate)</td>
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<td>Canada - Alberta</td>
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<td>US - Vermont</td>
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<td>US - Vermont</td>
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<td>US - Idaho - Limits for Air Contaminants</td>
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<td>US - Washington</td>
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<tr>
<td>Canada - Yukon</td>
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<td>- 5 - 10</td>
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<tr>
<td>US - Minnesota</td>
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<tr>
<td>Canada - British Columbia</td>
<td>mineral oil (Oil mist - mineral, severely refined)</td>
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</tbody>
</table>

TLV Basis lung. As sampled by method that does not collect vapor.
US OSHA Permissible Exposure Levels (PELs) - Table Z1

| Mineral oil (Oil mist, mineral) | 5 |

The following materials had no OELs on our records

- naphthenic acid CAS1338-24-5 CAS64754-89-8

### PERSONAL PROTECTION

**RESPIRATOR**
- Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 1432000 & 1492001, ANSI Z88 or national equivalent)

**EYE**
- Safety glasses with side shields.
- Chemical goggles.

**HANDS/FEET**
Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include
- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).
- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Wear chemical protective gloves, eg. PVC.

**OTHER**
- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

**ENGINEERING CONTROLS**
Local exhaust ventilation usually required. If risk of overexposure exists, wear an approved respirator.

### Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical Properties</th>
</tr>
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<tbody>
<tr>
<td>Liquid.</td>
</tr>
<tr>
<td>Does not mix with water.</td>
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<tr>
<td>Floats on water.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>State</th>
<th>Liquid</th>
<th>Molecular Weight</th>
<th>Not applicable</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Liquid</td>
<td></td>
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</tbody>
</table>
Melting Range (°F)  Not available  Viscosity  Not available
Boiling Range (°F)  Not available  Solubility in water (g/L)  Immiscible
Flash Point (°F) >212  pH (1% solution)  Not applicable
Decomposition Temp (°F)  Not Available  pH (as supplied)  Not applicable
Autoignition Temp (°F)  Not available  Vapour Pressure (mmHG)  Not available
Upper Explosive Limit (%)  Not available  Specific Gravity (water=1)  0.97 (typical)
Lower Explosive Limit (%)  Not available  Relative Vapor Density (air=1) >1
Volatile Component (%vol)  Not available  Evaporation Rate  Not available

APPEARANCE
Liquid, usually with unpleasant smell; does not mix with water. Soluble in many organic solvents. May be corrosive to metals. Typical of the acid materials present in commercial naphthenic acids are cyclopentylacetic acid and alkyl substituted cyclopentylacetic acids. The mixtures also contain fused chains of cyclopentylacetic acids and small amounts of cyclohexylacetic acids.

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY
- Presence of incompatible materials.
- Product is considered stable.

STORAGE INCOMPATIBILITY
Avoid reaction with oxidizing agents.
For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

naphthenic acid

TOXICITY AND IRRITATION
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

NAPHTHENIC ACID
Nil reported

MINERAL OIL
Toxicity and irritation data for petroleum-based mineral oils are related to chemical components and vary as does the composition and source of the original crude.
A small but definite risk of occupational skin cancer occurs in workers exposed to persistent skin contamination by oils over a period of years. This risk has been attributed to the presence of certain polycyclic aromatic hydrocarbons (PAH) (typified by benz[a]pyrene). Petroleum oils which are solvent refined/extracted or severely hydrotreated, contain very low concentrations of both.

Section 12 - ECOLOGICAL INFORMATION

This material and its container must be disposed of as hazardous waste.

GESAMP/EHS COMPOSITE LIST - GESAMP Hazard Profiles

Name / EHS  TRN  A1a  A1b  A1  A2  B1  B2  C1  C2  C3  D1  D2  D3  E1  E2  E3
Cas No / RTECS
No

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____
Section 13 - DISPOSAL CONSIDERATIONS

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations. Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult Waste Management Authority for disposal.

Section 14 - TRANSPORTATION INFORMATION

DOT:

<table>
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<tr>
<th>Symbols:</th>
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<tbody>
<tr>
<td>Hazard class or Division:</td>
<td>9</td>
</tr>
<tr>
<td>Identification Numbers:</td>
<td>UN3082</td>
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<tr>
<td>PG:</td>
<td>III</td>
</tr>
<tr>
<td>Label Codes:</td>
<td>9</td>
</tr>
<tr>
<td>Special provisions:</td>
<td>8, 146, 335, IB3, T4, TP1, TP29</td>
</tr>
<tr>
<td>Packaging: Exceptions:</td>
<td>155</td>
</tr>
<tr>
<td>Packaging: Non-bulk:</td>
<td>203</td>
</tr>
<tr>
<td>Packaging: Exceptions:</td>
<td>155</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>Quantity Limitations: Cargo aircraft only:</td>
<td>No limit</td>
</tr>
<tr>
<td>Vessel stowage: Other:</td>
<td>None</td>
</tr>
</tbody>
</table>

Hazardous materials descriptions and proper shipping names:
Environmentally hazardous substance, liquid, n.o.s

**Air Transport IATA:**

- **UN/ID Number:** 3082
- **Packing Group:** III
- **Special provisions:** A97

**Cargo Only**

- **Packing Instructions:** 964
- **Maximum Qty/Pack:** 450 L

**Passenger and Cargo**

- **Packing Instructions:** Y964
- **Maximum Qty/Pack:** 450 L

**Passenger and Cargo Limited Quantity**

- **Packing Instructions:** 964
- **Maximum Qty/Pack:** 30 kg G

**Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS NAPHTHENIC ACID)

**Maritime Transport IMDG:**

- **IMDG Class:** 9
- **IMDG Subrisk:** None
- **UN Number:** 3082
- **Packing Group:** III
- **EMS Number:** F-A,S-F
- **Special provisions:** 274 335
- **Limited Quantities:** 5 L
- **Marine Pollutant:** Yes

**Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains naphthenic acid)

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**Section 15 - REGULATORY INFORMATION**

naphthenic acid (CAS: 1338-24-5,64754-89-8) is found on the following regulatory lists:

**Regulations for ingredients**

No data for mineral oil (CAS: , Not avail)

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**Section 16 - OTHER INFORMATION**

**LIMITED EVIDENCE**

- Ingestion may produce health damage*
- Cumulative effects may result following exposure*
- May produce discomfort of the respiratory system*

* (limited evidence).

**Ingredients with multiple CAS Nos**

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>CAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>naphthenic acid</td>
<td>1338-24-5, 64754-89-8</td>
</tr>
</tbody>
</table>
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Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references. A list of reference resources used to assist the committee may be found at: www.chemwatch.net/references.

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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www.chemwatch.net

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