1. IDENTIFICATION

Product Identifier
Product Name: Endarc

Other means of identification
SDS #: IDI-Endarc

Recommended use of the chemical and restrictions on use
Recommended Use: Dielectric Fluid for EDM
Restrictions Use: Not Available

Details of the supplier of the safety data sheet
Manufacturer Address
Intersurface Dynamics, Inc.
21 F.J. Clarke Circle
P.O. Box 181
Bethel, CT 06801

Emergency Telephone Number
Company Phone Number: Phone: 203-778-9995
Emergency Telephone (24 hr): INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Appearance: Colorless
Physical State: Liquid
Odor: Mild hydrocarbon

Classification
ASPIRATION HAZARD: Category 1

Label Elements

Signal Word
Danger

Hazard Statements
May be fatal if swallowed and enters airways.
2. HAZARDS IDENTIFICATION

Precautionary Statements - Prevention
Not applicable.

Precautionary Statements - Response
IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.

Storage:
Store locked up.

Disposal:
Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements:
Avoid contact with skin and clothing. Wash thoroughly after handling.

Hazards not otherwise classified:
Defatting to the skin. Prolonged or repeated contact may dry skin and cause irritation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical name</td>
<td>White mineral oil (petroleum)</td>
</tr>
<tr>
<td>Other means of identification</td>
<td>White mineral oil, petroleum; White spirits; White mineral oil; Mineral oil; Paraffin oil; Paraffinum liquidum</td>
</tr>
<tr>
<td>CAS number/other identifiers</td>
<td>8042-47-5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>White mineral oil (petroleum)</td>
<td>8042-47-5</td>
<td>100</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present 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.

Occupational exposure limits, if available, are listed in Section 8.

4. FIRST AID MEASURES

Description of necessary first aid measures

First Aid Measures

Eye Contact:
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation:
Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin Contact:
Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
### 4. FIRST-AID MEASURES

**Ingestion:** Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

#### Most important symptoms and effects

**Potential acute health effects**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye contact</strong></td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td><strong>Skin contact</strong></td>
<td>Defatting to the skin. May cause skin dryness and irritation.</td>
</tr>
<tr>
<td><strong>Ingestion</strong></td>
<td>May be fatal if swallowed and enters airways.</td>
</tr>
</tbody>
</table>

**Over-exposure signs/symptoms**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye contact</strong></td>
<td>No specific data.</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td>No specific data.</td>
</tr>
<tr>
<td><strong>Skin contact</strong></td>
<td>Adverse symptoms may include the following: irritation, dryness, cracking</td>
</tr>
<tr>
<td><strong>Ingestion</strong></td>
<td>Adverse symptoms may include the following: nausea or vomiting</td>
</tr>
</tbody>
</table>

**Indication of any immediate medical attention and special treatment needed, if necessary**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye contact</strong></td>
<td>Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td>No specific treatment.</td>
</tr>
<tr>
<td><strong>Skin contact</strong></td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
</tr>
<tr>
<td><strong>Ingestion</strong></td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
</tr>
</tbody>
</table>

**Notes to Physician**

Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments**

No specific treatment.

**Protection of first-aiders**

No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

### 5. FIRE-FIGHTING MEASURES

**Extinguishing media**

- **Suitable Extinguishing Media:** Use dry chemical, CO₂, alcohol-resistant foam or water spray (fog).
- **Unsuitable Extinguishing Media:** Do not use water jet.

**Specific Hazards Arising from the Chemical**

In a fire or if heated, a pressure increase will occur and the container may burst.

**Hazardous thermal decomposition products**

Decomposition products may include the following materials: carbon dioxide, carbon monoxide

**Special protective actions for fire-fighters**

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters**

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders
If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For nonemergency personnel".

Environmental precautions
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill
Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor. (sewers, waterways, soil or air).

Large spill
Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Protective measures
Put on appropriate personal protective equipment (see Section 8). Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.disposal contractor. (sewers, waterways, soil or air).

Advice on general occupational hygiene
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities
Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>White mineral oil (petroleum)</td>
<td>ACGIH TLV (United States, 4/2014).</td>
</tr>
<tr>
<td></td>
<td>TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</td>
</tr>
<tr>
<td></td>
<td>NIOSH REL (United States, 10/2013).</td>
</tr>
<tr>
<td></td>
<td>TWA: 5 mg/m³ 10 hours. Form: Mist</td>
</tr>
<tr>
<td></td>
<td>STEL: 10 mg/m³ 15 minutes. Form: Mist</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL (United States, 2/2013).</td>
</tr>
<tr>
<td></td>
<td>TWA: 5 mg/m³ 8 hours.</td>
</tr>
</tbody>
</table>

Appropriate engineering controls
Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls
Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures
Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection
Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection
Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection
Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**
- **Physical state**: Liquid. [Viscous liquid.]
- **Color**: Colorless.
- **Odor**: Mild. Hydrocarbon.
- **Odor threshold**: Not available.
- **pH**: Not available.
- **Melting point**: -60 to -9°C (-76 to 15.8°F)
- **Boiling point**: 252.22 to 278.33°C (486 to 533°F)

**Flash point**: Closed cup: 117.22°C (243°F) [Pensky-Martens.]
- **Evaporation rate**: Not available.
- **Flammability (solid, gas)**: Not available.
- **Lower and upper explosive (flammable) limits**: Not available.
- **Vapor pressure**: 0.011 kPa (0.08 mm Hg) [room temperature]
- **Vapor density**: Not available.
- **Relative density**: 0.818
- **Solubility**: Insoluble in the following materials: cold water and hot water.
- **Partition coefficient**: >4
- **Auto-ignition temperature**: 325 to 355°C (617 to 671°F)
- **Decomposition temperature**: Not available.
- **Viscosity**: Kinematic (40°C (104°F)): 0.0289 cm²/s (2.89 cSt)

10. STABILITY AND REACTIVITY

**Reactivity**: No specific test data related to reactivity available for this product or its ingredients.
- **Chemical stability**: The product is stable.
- **Possibility of hazardous reactions**: Under normal conditions of storage and use, hazardous reactions will not occur.
- **Conditions to avoid**: No specific data.
- **Incompatible materials**: No specific data.
- **Hazardous decomposition products**: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

**Information on toxicological effects**

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>White mineral oil (petroleum)</td>
<td>LC50 Inhalation Dusts and mists</td>
<td>Rat</td>
<td>&gt;5 mg/l</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;2000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Irritation/Corrosion**: Not available.

**Sensitization**: Not available.

**Mutagenicity**: Not available.

**Carcinogenicity**: Not available.

**Conclusion/Summary**: The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3 % DMSO extract as measured by IP 346.
11. TOXICOLOGICAL INFORMATION

Reproductive toxicity
Not available.

Teratogenicity
Not available.

Specific target organ toxicity (single exposure)
Not available.

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard

<table>
<thead>
<tr>
<th>Name</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>White mineral oil (petroleum)</td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
</tbody>
</table>

Information on the likely routes of exposure

Potential acute health effects

Eye contact
No known significant effects or critical hazards.

Inhalation
No known significant effects or critical hazards.

Skin contact
Defatting to the skin. May cause skin dryness and irritation.

Ingestion
May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact
No specific data.

Inhalation
No specific data.

Skin contact
Adverse symptoms may include the following: irritation, dryness, cracking.

Ingestion
Adverse symptoms may include the following: nausea or vomiting.

Chronic and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects
Not available.

Potential delayed effects
Not available.

Long term exposure

Potential immediate effects
Not available.

Potential delayed effects
Not available.

Potential chronic health effects
Not available.

General
Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity
No known significant effects or critical hazards.

Mutagenicity
No known significant effects or critical hazards.

Teratogenicity
No known significant effects or critical hazards.

Developmental effects
No known significant effects or critical hazards.

Fertility effects
No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates
Not available.

12. ECOLOGICAL INFORMATION

Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>White mineral oil (petroleum)</td>
<td>Acute LC50 &gt;100 mg/l</td>
<td>Daphnia</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 &gt;10000 mg/l</td>
<td>Fish</td>
<td>86 hours</td>
</tr>
</tbody>
</table>
12. ECOLOGICAL INFORMATION

Persistence and degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>White mineral oil (petroleum)</td>
<td>-</td>
<td>-</td>
<td>Inherent</td>
</tr>
</tbody>
</table>

Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>White mineral oil (petroleum)</td>
<td>&gt;4</td>
<td>-</td>
<td>high</td>
</tr>
</tbody>
</table>

Mobility in soil

- Soil/water partition coefficient (K<sub>oc</sub>)
  - Not available.

Other adverse effects

- No known significant effects or critical hazards.

13. DISPOSAL CONSIDERATIONS

Disposal methods

The generation of waste should be avoided or minimized wherever possible. 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. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers...

RCRA classification

- Not Regulated

14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>UN number</th>
<th>DOT Classification</th>
<th>TDG</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
</table>

Special precautions for user

Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not available

15. REGULATORY INFORMATION

U.S. Federal regulations

- TSCA 8(a) CDR Exempt/Partial exemption: This material is listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)

- Not listed

Clean Air Act Section 602 Class I Substances

- Not listed
15. REGULATORY INFORMATION

Clean Air Act Section 602
Class II Substances Not listed

DEA List I Chemicals
(Precursor Chemicals) Not listed

DEA List II Chemicals
(Essential Chemicals) Not listed

SARA 302/304
Composition/information on ingredients
No products were found.

SARA 304 RQ Not applicable.

SARA 311/312
Classification Immediate (acute) health hazard

Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Fire hazard</th>
<th>Sudden Release of pressure</th>
<th>Reactive</th>
<th>Immediate (acute) health hazard</th>
<th>Delayed (chronic) health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>White mineral oil (petroleum) Present</td>
<td>100</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>Yes</td>
<td>No.</td>
</tr>
</tbody>
</table>

State regulations
Massachusetts This material is not listed.
New York This material is not listed.
New Jersey This material is listed.
Pennsylvania This material is not listed.

California Prop. 65
This product is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International lists
National inventory
Australia This material is listed or exempted.
Canada This material is listed or exempted.
China This material is listed or exempted.
Europe This material is listed or exempted.
Japan This material is listed or exempted.
Malaysia Not determined.
New Zealand This material is listed or exempted.
Philippines This material is listed or exempted.
Republic of Korea This material is listed or exempted.
Taiwan This material is listed or exempted.

16. OTHER INFORMATION

Procedure used to derive the classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asp. Tox. 1, H304</td>
<td>On basis of test data</td>
</tr>
</tbody>
</table>

Issue Date: 01-June-2015
Revision Date: 01-June-2015
Revision Note: New format
Key to abbreviations
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
UN = United Nations

Disclaimer
The information provided in this 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