Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

<table>
<thead>
<tr>
<th>Common Name/Trade Name</th>
<th>Chemical Name</th>
<th>Chemical Family</th>
<th>Chemical Formula</th>
<th>Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethyl phthalate</td>
<td>Phthalic acid, diethyl ester</td>
<td>Not available.</td>
<td>C12H14O4</td>
<td>SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Commercial Name(s)</th>
<th>Synonym</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248</td>
<td>Not available.</td>
<td>Anozol; DEP; Diethyl 1,2-benzene dicarboxylate; Diethyl o-phthalate; Ethyl Phthalate; Neantine; o-Benzenedicarboxylic acid diethyl ester; Palatinol A; Phthalol; Solvanol</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exposure Limits</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>CAS #</td>
</tr>
<tr>
<td>Diethyl phthalate</td>
<td>84-66-2</td>
</tr>
</tbody>
</table>

Section 2. Composition and Information on Ingredients

Toxicological Data on Ingredients: Diethyl phthalate:
ORAL (LD50): Acute: 8600 mg/kg [Rat]. 6172 mg/kg [Mouse]. 1000 mg/kg [Rabbit].

Section 3. Hazards Identification

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH.
MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
The substance may be toxic to liver, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

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### Section 4. First Aid Measures

| **Eye Contact** | Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. WARM water MUST be used. Get medical attention if irritation occurs. |
| **Skin Contact** | Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. |
| **Serious Skin Contact** | Not available. |
| **Inhalation** | If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. |
| **Serious Inhalation** | Not available. |
| **Ingestion** | Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear. |
| **Serious Ingestion** | Not available. |

### Section 5. Fire and Explosion Data

| **Flammability of the Product** | May be combustible at high temperature. |
| **Auto-Ignition Temperature** | 457.22°C (855°F) |
| **Flammable Limits** | LOWER: 0.7% |
| **Products of Combustion** | These products are carbon oxides (CO, CO2). |
| **Fire Hazards in Presence of Various Substances** | Slightly flammable to flammable in presence of open flames and sparks, of heat. |
| **Fire Fighting Media and Instructions** | SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet. |
| **Special Remarks on Fire Hazards** | When heated to decomposition it emits acrid smoke and irritating fumes. |
| **Special Remarks on Explosion Hazards** | Not available. |

### Section 6. Accidental Release Measures

| **Small Spill** | Absorb with an inert material and put the spilled material in an appropriate waste disposal. |
| **Large Spill** | Absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities. |
Section 7. Handling and Storage

Precautions
Keep locked up. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/vapor/spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids.

Storage
Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Engineering Controls
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection
Safety glasses. Synthetic apron. Gloves (impervious).

Personal Protection in Case of a Large Spill
Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits
TWA: 5 (mg/m³) from ACGIH (TLV) [United States]
TWA: 5 (mg/m³) from OSHA (PEL) [United States]
TWA: 5 (mg/m³) from NIOSH [United States]
TWA: 5 STEL: 10 (mg/m³) [United Kingdom (UK)]
TWA: 5 STEL: 10 (mg/m³) [Canada]

Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance
Liquid. (Oily liquid.)

Odor
Odorless.

Molecular Weight
222.24 g/mole

Taste
Bitter.

pH (1% soln/water)
Not available.

Color
Clear Colorless.

Boiling Point
298°C (568.4°F)

Melting Point
-40.5°C (-40.9°F)

Critical Temperature
Not available.

Specific Gravity
1.12 or 1.118 - 1.122 (Water = 1)

Vapor Pressure
Not available.

Vapor Density
7.66 (Air = 1)

Volatility
Not available.

Odor Threshold
Not available.

Water/Oil Dist. Coeff.
The product is more soluble in oil; log(oil/water) = 2.5

Ionicity (in Water)
Not available.

Dispersion Properties
See solubility in water, diethyl ether, acetone.

Solubility
Soluble in diethyl ether, acetone.
Insoluble or very slightly soluble in cold water.
Soluble in alcohol, benzene.
Miscible with vegetable oils, ketones, esters, aromatic hydrocarbons.
Partially miscible with aliphatic solvents.
Solubility in water: 1000 mg/l at 25 deg. C.

Continued on Next Page
**Section 10. Stability and Reactivity Data**

<table>
<thead>
<tr>
<th>Stability</th>
<th>The product is stable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instability</td>
<td>Not available.</td>
</tr>
<tr>
<td>Temperature</td>
<td></td>
</tr>
<tr>
<td>Conditions of</td>
<td>Heat, ignition sources, incompatible materials.</td>
</tr>
<tr>
<td>Instability</td>
<td></td>
</tr>
<tr>
<td>Incompatibility</td>
<td>Reactive with oxidizing agents, acids.</td>
</tr>
<tr>
<td>with various</td>
<td></td>
</tr>
<tr>
<td>substances</td>
<td></td>
</tr>
<tr>
<td>Corrosivity</td>
<td>Non-corrosive in presence of glass.</td>
</tr>
</tbody>
</table>

**Special Remarks on Reactivity**
- May attack some forms of plastic.
- Incompatible with permanganates, nitric acid.

**Special Remarks on Corrosivity**
- Not available.

**Polymerization**
- Will not occur.

**Section 11. Toxicological Information**

**Routes of Entry**
- Absorbed through skin. Eye contact.

**Toxicity to Animals**
- Acute oral toxicity (LD50): 1000 mg/kg [Rabbit].

**Chronic Effects on Humans**
- CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH.
- MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast.
- May cause damage to the following organs: liver, central nervous system (CNS).

**Other Toxic Effects on Humans**
- Slightly hazardous in case of skin contact (irritant, permeator), of ingestion, of inhalation.

**Special Remarks on Toxicity to Animals**
- Not available.

**Special Remarks on Chronic Effects on Humans**
- Passes through the placental barrier in animal.
- May cause adverse reproductive effects and birth defects (teratogenic) based on animal test data.
- May affect genetic material (mutagenic).
- May cause cancer based on animal test data. No human data found.

**Special Remarks on other Toxic Effects on Humans**
- Acute Potential Health Effects:
  - Skin: May cause skin irritation. May be absorbed through the skin.
  - Eyes: May cause eye irritation. May cause lacrimation.
  - Inhalation: Breathing in mist or vapor may cause respiratory tract (nose, throat) irritation. Symptoms may include coughing and hoarseness, and dyspnea. Contact with mist or vapor may cause lacrimation.
  - Inhalation of high concentrations may affect behavior/central nervous system/nervous system (central nervous system depression, headache, dizziness, polyneuropathy (paresthesia), and pain, numbness, weakness, muscle spasms in the arms and legs)
  - Ingestion: Ingestion of large doses may cause gastrointestinal tract irritation. May affect behavior/central nervous system (somnolence, withdrawal and other symptoms similar to that of inhalation), metabolism (weight loss).

**Chronic Potential Health Effects:**
- Ingestion: Prolonged or repeated ingestion may affect the liver, metabolism (weight loss), blood (changes in serum composition), urinary system (bladder), behavior/central nervous system (see acute ingestion). May cause pupillary constriction.
- Skin: Prolonged or repeated skin contact may cause contact dermatitis.
- Inhalation: Sensitive individuals may develop allergic reaction similar to asthma when chronically exposed to diethyl phthalate.

High or repeated exposure may affect the peripheral nervous system (paresthesia - a tingling, pricking, or numbness of the skin (known as the feeling of “pins and needles”) generally of the hands and feet (extremities)).

Continued on Next Page
### Section 12. Ecological Information

**Ecotoxicity**
Not available.

**BOD5 and COD**
Not available.

**Products of Biodegradation**
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation**
The product itself and its products of degradation are not toxic.

**Special Remarks on the Products of Biodegradation**
Not available.

### Section 13. Disposal Considerations

**Waste Disposal**
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

### Section 14. Transport Information

**DOT Classification**
Not a DOT controlled material (United States).
Not an IATA controlled material

**Identification**
Not applicable.

**Special Provisions for Transport**
Reportable Quantity: 1000 lbs./453.6 kg

**DOT (Pictograms)**

### Section 15. Other Regulatory Information and Pictograms

**Federal and State Regulations**
- New York release reporting list: Diethyl phthalate
- Pennsylvania RTK: Diethyl phthalate
- Minnesota: Diethyl phthalate
- Massachusetts RTK: Diethyl phthalate
- Massachusetts spill list: Diethyl phthalate
- New Jersey: Diethyl phthalate
- New Jersey spill list: Diethyl phthalate
- Louisiana spill reporting: Diethyl phthalate
- California Director's List of Hazardous Substances: Diethyl phthalate
- TSCA 8(b) inventory: Diethyl phthalate
- TSCA 8(a) IUR: Diethyl phthalate
- TSCA 8(d) H and S data reporting: Diethyl phthalate: Effective date: 10/04/82; Sunset Date: 10/04/92
- CERCLA: Hazardous substances.: Diethyl phthalate: 1000 lbs. (453.6 kg)

**California Proposition 65 Warnings**
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.
California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

**Other Regulations**
- EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 201-550-6).
- Canada: Listed on Canadian Domestic Substance List (DSL).
- China: Listed on National Inventory.
- Japan: Listed on National Inventory (ENCS).
- Korea: Listed on National Inventory (KECI).
- Philippines: Listed on National Inventory (PICCS).
- Australia: Listed on AICS.

**Other Classifications**
**WHMIS (Canada)**
Not controlled under WHMIS (Canada).

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This product is not classified according to the EU regulations.

**HMIS (U.S.A.)**

- Health Hazard: 1
- Fire Hazard: 1
- Reactivity: 0
- Personal Protection: C

**National Fire Protection Association (U.S.A.)**

- Health: 1
- Reactivity: 0
- Specific hazard: 0

**WHMIS (Canada) (Pictograms)**

**DSCL (Europe) (Pictograms)**

**TDG (Canada) (Pictograms)**

**ADR (Europe) (Pictograms)**

**Protective Equipment**

- Gloves (impervious).
- Lab coat.
- Not applicable.
- Safety glasses.

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**Section 16. Other Information**

**MSDS Code**

D3256

**References**

- Manufacturer's Material Safety Data Sheet.
- Hazardous Substance Data Bank (HSDB)
- Registry of Toxic Effects of Chemical Substances (RTECS)
- Hazardtext

**Other Special Considerations**

Not available.

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**Continued on Next Page**
Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user’s responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.

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