### Section 1. Chemical Product and Company Identification

<table>
<thead>
<tr>
<th>Common Name/Trade Name</th>
<th>Estrone Sulfate Piperazine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>SPECTRUM LABORATORY PRODUCTS INC.</td>
</tr>
<tr>
<td></td>
<td>14422 S. San Pedro Street, Gardena, CA 90248</td>
</tr>
<tr>
<td>Commercial Name(s)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Synonym</td>
<td>Estrone, hydrogen sulfate, compd. with piperazine (1:1); Estropipate; Harmogen; Piperazine estrone sulfate; Piperazine, compd. with 3-(sulfooxy)estra-1,3,5(10)-trien-17-one (1:1); Piperazine, compd. with estrone hydrogen sulfate; Sulestrex; Piperazine 17-oxo-estra-1,3,5-trien-3-yl-sulphate</td>
</tr>
<tr>
<td>Chemical Name</td>
<td>Estra-1,3,5(10)-trien-17-one, 3-(sulfooxy), compd. with piperazine (1:1)</td>
</tr>
<tr>
<td>Chemical Family</td>
<td>Estrogen</td>
</tr>
<tr>
<td>Chemical Formula</td>
<td>C18-H22-O5-S.C4-H10-N2</td>
</tr>
<tr>
<td>Supplier</td>
<td>SPECTRUM LABORATORY PRODUCTS INC.</td>
</tr>
<tr>
<td></td>
<td>14422 S. San Pedro Street, Gardena, CA 90248</td>
</tr>
</tbody>
</table>

| IN CASE OF EMERGENCY                  | CHEMTREC (24hr) 800-424-9300 |
| CALL (310) 516-8000                   | |

### Section 2. Composition and Information on Ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CAS #</td>
</tr>
<tr>
<td>1) Estrone Sulfate Piperazine</td>
<td>7280-37-7</td>
</tr>
</tbody>
</table>

### Toxicological Data on Ingredients

- LD50: Not available.
- LC50: Not available.
Section 3. Hazards Identification

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

Potential Chronic Health Effects

<table>
<thead>
<tr>
<th>Carcinogenic Effects</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mutagenic Effects</td>
<td>Not available.</td>
</tr>
<tr>
<td>Teratogenic Effects</td>
<td>Not available.</td>
</tr>
<tr>
<td>Developmental Toxicity</td>
<td>Classified Reproductive system/toxin/female, Reproductive system/toxin/male [SUSPECTED].</td>
</tr>
</tbody>
</table>

The substance may be toxic to the reproductive system. Repeated or prolonged exposure to the substance can produce target organs damage.

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. 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. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion  Not available.

Section 5. Fire and Explosion Data

Flammability of the Product  May be combustible at high temperature.

Auto-Ignition Temperature  Not available.

Flash Points  Not available.

Flammable Limits  Not available.

Products of Combustion  These products are carbon oxides (CO, CO2), nitrogen oxides (NO, NO2...), sulfur oxides (SO2, SO3...).

Fire Hazards in Presence of Various Substances  Slightly flammable to flammable in presence of heat.

Explosion Hazards in Presence of Various Substances  Risks of explosion of the product in presence of mechanical impact: Not available.

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  Not available.

Special Remarks on Explosion Hazards  Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Continued on Next Page
Section 6. Accidental Release Measures

Small Spill
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7. Handling and Storage

Precautions
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not breathe dust. Wear suitable protective clothing. If you feel unwell, seek medical attention and show the label when possible.

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

Section 8. Exposure Controls/Personal Protection

Engineering Controls
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection
Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits
Not available.

Section 9. Physical and Chemical Properties

Physical state and appearance Solid. (crystalline powder.)
Odor Odorless.
Taste Not available.
Color White to yellowish.

Molecular Weight 436.58 g/mole

pH (1% soln/water) Not available.

Boiling Point Not available.

Melting Point 190°C (374°F) - 245°C

Critical Temperature Not available.

Specific Gravity Not available.

Vapor Pressure Not applicable.

Vapor Density Not available.

Volatility Not available.

Odor Threshold Not available.

Water/Oil Dist. Coeff. Not available.

Ionicity (in Water) Not available.

Dispersion Properties Not available.

Solubility Not available.
### Section 10. Stability and Reactivity Data

<table>
<thead>
<tr>
<th>Stability</th>
<th>The product is stable.</th>
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</thead>
<tbody>
<tr>
<td>Instability Temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Conditions of Instability</td>
<td>Excess heat</td>
</tr>
<tr>
<td>Incompatibility with various substances</td>
<td>Not available.</td>
</tr>
<tr>
<td>Corrosivity</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

**Special Remarks on Reactivity**  
Not available.

**Special Remarks on Corrosivity**  
Not available.

**Polymerization**  
Will not occur.

### Section 11. Toxicological Information

#### Routes of Entry
- Inhalation. Ingestion.

#### Toxicity to Animals
- LD50: Not available.  
- LC50: Not available.

#### Chronic Effects on Humans
- **DEVELOPMENTAL TOXICITY**: Classified Reproductive system/toxin/female, Reproductive system/toxin/male [SUSPECTED].  
- May cause damage to the following organs: the reproductive system.

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

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

**Special Remarks on Chronic Effects on Humans**  
May cause adverse reproductive effects and birth defects (teratogenic).  
May cause cancer

**Special Remarks on other Toxic Effects on Humans**  
Acute Potential Health Effects:  
Skin: May cause skin irritation.  
Eyes: May cause eye irritation.  
Inhalation: Avoid inhalation. May cause respiratory tract irritation and system effects.  
Ingestion: A single overdose is unlikely to cause toxic effects. It may cause gastrointestinal tract irritation with abdominal cramps, nausea and vomiting. This material is readily absorbed from the gastrointestinal tract.  
Chronic Potential Health Effects:  
Ingestion: Prolonged or repeated ingestion may have the following adverse effects: skin reactions (Chloasma, or melasma, erythema multiforme, erythema nodosum, hemorrhagic eruption, loss of scalp hair), increase in blood pressure, bloating, jaundice (yellow eyes or skin), Central Nervous System effects (headache, migraine, dizziness, mental depression), steepening of corneal curvature, weight gain or loss, increase of gallbladder disease, reduced carbohydrate tolerance, change in sex drive, loss of appetite, intolerance to contact lenses, swelling due to fluid and salt retention, aggravation of porphyria. Women may develop full or tender breasts and disturbed menstrual cycle (breakthrough spotting, change in menstrual flow), increase in size of uterine fibromyomata, change in cervical erosion and amount of cervical secretion. Men may experience breast enlargement and other feminizing effects. These changes in secondary sexual characteristics are fully reversible upon cessation of exposure. Hypersensitivity (anaphylactic) reactions may also occur.  
Medical conditions aggravated by exposure: Hypersensitivity to material, known or suspected breast cancer, known or suspected estrogen-dependent neoplasia, undiagnosed or abnormal genital bleeding, active thrombophlebitis and/or thromboembolic disorders.  
Pregnant women should not be exposed. There may be an association between intrauterine exposure to female sex hormones and congenital anomalies.  
The above effects are base on Estrone
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.

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).

Identification
Not applicable.

Special Provisions for Transport
Not applicable.

DOT (Pictograms)

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Estrone Sulfate Piperazine
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: Estrone Sulfate Piperazine
Pennsylvania RTK: Estrone Sulfate Piperazine

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: Estrone Sulfate Piperazine
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: Estrone Sulfate Piperazine

Other Regulations
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications

WHMIS (Canada) CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC) R60- May impair fertility. S2- Keep out of the reach of children. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S53- Avoid exposure - obtain special instructions before use.

Continued on Next Page
### Protective Equipment

- **Gloves.**
- **Lab coat.**
- **Dust respirator.** Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator whenever ventilation is inadequate.
- **Safety glasses.**
### Section 16. Other Information

<table>
<thead>
<tr>
<th>MSDS Code</th>
<th>E3211</th>
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</thead>
<tbody>
<tr>
<td>References</td>
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</tr>
<tr>
<td>Other Special Considerations</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Verified by Sonia Owen.  
Printed 9/12/2006.

**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.