Cidex OPA
Advanced Sterilization Products
Material Safety Data Sheet

MSDS-09588-0-001
Rev.: D
Product: CIDEX® OPA Solution
Issue Date: 4/20/04

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

Supplier:
Advanced Sterilization Products
33 Technology Drive
Irvine, CA 92618

Customer service telephone: 1-800-755-5900
Emergency telephone number: (800) 451-8346 or (760) 602-8700 - 24 hrs
Product name: CIDEX OPA Solution
Product code: ASPOPA
Synonyms: None

2. COMPOSITION/INFORMATION ON INGREDIENTS

The ingredients at their given percentages in this product are not considered hazardous to your health.

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<tbody>
<tr>
<td>1,2-benzenedicarboxaldehyde</td>
<td>643-79-8</td>
<td>&lt;1</td>
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<td>Not Determined</td>
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</table>

3. HAZARDS IDENTIFICATION

Emergency overview: May cause eye, skin and respiratory irritation.
May elicit an allergic reactions.

Properties affecting health: May cause sensitization by repeated skin contact.

Principle routes of exposure:
Oral: Not anticipated to be a significant route of occupational exposure.
Eye contact: May cause eye irritation and redness.
Skin contact: May cause skin irritation. Repeated exposure may cause skin dryness or cracking.
Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Exposure can irritate and discolor the tissues of the mouth, esophagus and other tissues of the digestive tract.
Inhalation: May cause irritation, including but not limited to discharge, coughing, wheezing tightness of chest and throat, difficulty breathing and stinging sensation in nose and throat. Symptoms are temporary and reversible.

Physico-chemical properties: No hazards resulting from material as supplied.
Hazard information:
Target organ effects: None
Reproductive effects: Not a reproductive effector.
Mutagenic effects: Not mutagenic in the Ames assay.
Sensitization: May cause sensitization.

Carcinogenicity rating:

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS Number</th>
<th>J &amp; J:</th>
<th>NTP:</th>
<th>IARC:</th>
<th>California Proposition 65 List:</th>
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</thead>
<tbody>
<tr>
<td>1,2-benzenedicarboxaldehyde</td>
<td>@CAS</td>
<td>Not Determined</td>
<td>Not Determined</td>
<td>Not Determined</td>
<td>Not Determined</td>
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</table>

Signs and symptoms: None.

Medical conditions aggravated by exposure: Inhalation of vapor may cause asthma-like symptoms (chest discomfort and tightness, difficulty with breathing) as well as aggravate pre-existing asthma.

4. FIRST AID MEASURES

Eye contact: In the case of contact with eyes, rinse immediately with plenty of water for 15 minutes and seek medical attention.

Ingestion: Do not induce vomiting. Clean mouth with water and drink afterwards plenty of water.

Inhalation: Move to fresh air immediately. If experiencing difficulty breathing, seek medical attention.

Skin contact: Wash contaminated areas thoroughly with soap and water. Remove contaminated clothing and wash before re-use. Get medical attention if irritation develops or persists.

Protection of first-aiders: None.

Notes to physician: Probable damage to the mucosa from oral exposure may contraindicate the use of gastric lavage. CIDEX OPA Solution has been reported to cause anaphylactic-like reactions in bladder cancer patients undergoing repeated cystoscopy. CIDEX OPA Solution should not be used to reprocess instruments for patients that have shown previous sensitivity to this solution or any of its ingredients.
5. FIRE-FIGHTING MEASURES

Flash point (°F): Not applicable
Flash point (°C): Not applicable
Autoignition temperature: Not applicable
Flammable limits in air - lower (%): Not applicable
NFPA rating: Health: 1 flammability: 0 reactivity: 0
HMIS/ NFPA rating and classification:

Fire fighting information:

Suitable extinguishing media: Use any extinguishing agent which is suitable for the surrounding fire
Extinguishing media which must not be used for safety reasons: None
Specific methods: None
Special protective equipment for firefighters: Wear self-contained breathing apparatus for fire fighting if necessary.
Hazardous combustion products: None
Explosivity: None
Explosion limits: lower: None
upper: None

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Wear eye and skin protection while handling material for clean-up. Avoid breathing vapors and/or mists.
Environmental precautions: Do not wash down sewers or waterways.
Methods for cleaning up: For spill neutralization, sprinkle approximately 25 grams of glycine (free base) powder per gallon of CIDEX OPA Solution spill. Thoroughly blend the glycine into the spill using mop or other tools. Allow 5 minute contact for neutralization. Pick up and transfer to properly labeled containers. Dispose of in accordance with all applicable federal, state, and local regulations. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Handling:

Technical measures/precautions: Use only in area provided with appropriate exhaust ventilation, a minimum of 10 air exchanges per hour.

Company: ADVANCED STERILIZATION PRODUCTS
Product name: CIDEX® OPA Solution
Product code: ASPOPA CO 25303-7
Safe handling advice: Wear appropriate personal protection. Avoid contact with skin, eyes and clothing. Remove contaminated clothing and launder before reuse.

Storage:

Technical measures/storage conditions: This product should be stored between 59°F (15°C) and 85°F (30°C). Keep containers tightly closed. Avoid contact with strong acids and bases. Keep from contact with oxidizing materials.

Incompatible products:

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering controls: Ensure adequate ventilation, a minimum of 10 air exchanges per hour.

Eye protection: Eye protection recommended during production of product. Goggles recommended.

Hand protection: Protective gloves recommended when manufacturing product. PVC or other plastic material gloves. Nitrile rubber gloves.

Skin and body protection: Wear suitable protective clothing.

Respiratory protection: None required.

Other/general protection: None required.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear liquid</td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Light blue</td>
</tr>
<tr>
<td>pH</td>
<td>7.2-7.8</td>
</tr>
<tr>
<td>Odor</td>
<td>Slight Odor</td>
</tr>
<tr>
<td>Boiling temperature (°F)</td>
<td>212</td>
</tr>
<tr>
<td>Boiling temperature (°C)</td>
<td>100</td>
</tr>
<tr>
<td>Freezing point/range (°C)</td>
<td>0</td>
</tr>
<tr>
<td>Freezing point/range (°F)</td>
<td>32</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.0003g/cc</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Similar to water</td>
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<tr>
<td>Water solubility</td>
<td>Soluble</td>
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</tbody>
</table>

10. STABILITY AND REACTIVITY

Chemical stability: Stable under recommended storage conditions.

Hazardous polymerization: Hazardous polymerization does not occur.

Hazardous decomposition products: Unknown on product.

Materials to avoid: Strong acids and strong bases. Stay away from strong oxidizing agents.

Conditions to avoid: Extremes of temperature and direct sunlight.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Company: ADVANCED STERILIZATION PRODUCTS
Product name: CIDEX® OPA Solution

Product code: ASPOPA CO 25303-7
LD50/oral/rat (mg/kg) =  >5000 mg/kg  
LD50 Dermal Rabbit (mg/kg):  >2000 mg/kg  

Local effects  
Oral: Non-toxic  
Eye irritation: May cause eye irritation.  
Skin irritation: May cause skin irritation.  
Inhalation: Unknown on product.  

Chronic toxicity  
Oral: Unknown on product.  
Inhalation: Unknown on product.  
Dermal: Unknown on product.  

Subchronic toxicity  
Oral: Oral administration of o-phthalaldehyde to rats for 90 days resulted in a NOEL of 5mg/kg/day.  
Dermal: Unknown on product.  

Specific effects  
Corrosive effects: Not corrosive.  
Sensitization: May elicit an allergic reaction.  
Target organ effects: Eyes  
Mutagenic effects: Not mutagenic in Ames test.  
Reproductive effects: Unknown on product.  
Developmental effects: Oral administration of o-phthalaldehyde to pregnant rats indicated that at maternally non-toxic doses (less than 10 mg/kg/day) there was no developmental effect.  
Carcinogenic effects: Unknown on product.  

12. ECOLOGICAL INFORMATION  

Ecotoxicity:  
Ecotoxicity effects: This product has no known eco-toxicological effects.  
Aquatic toxicity effects: This product has no known aquatic toxicological effects.  

Mobility: Unknown on product.  
Persistence / degradability: Unknown on product.  
Bioaccumulation: Unknown on product.  
Degradation: Unknown on product.  

13. DISPOSAL CONSIDERATIONS  

Waste from residues / unused products: Waste disposal must be in accordance with appropriate US, Federal, State and International regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. This product is not a hazardous waste as defined by EPA definitions.  
Contaminated packaging: Do not re-use empty containers  

Company: ADVANCED STERILIZATION PRODUCTS  
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CO 25303-7  

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### 14. TRANSPORT INFORMATION

#### DOT:
- DOT UN-No: Not applicable
- DOT shipping name: Not regulated
- Hazard class: Not applicable
- Subsidiary risk (hazard class): Not applicable
- Packing group: Not applicable
- DOT reportable quantity (lbs): Not applicable

#### IMO/IMDG:
- IMDG page: Not applicable
- IMDG-labels: Not applicable
- Packing group: Not applicable
- MFAG table No.: Not applicable
- Proper shipping name: Not regulated
- UN/Id No.: Not applicable

#### ADR/RID:
- Hazard class/packing group: Not applicable
- Item: Not applicable
- ADR/RID-labels: Not applicable
- UN/Id No.: Not applicable
- Proper shipping name: Not regulated
- TREM-card: Not applicable

#### IATA/ICAO:
- Hazard class: Not applicable
- Packing group: Not applicable
- Proper shipping name: Not regulated
- ID/UN No.: Not applicable
- IATA - label: Not applicable
- ERG #: Not applicable

#### TDG (Canada):
- Status: Not applicable
- Packing group: Not applicable

### 15. REGULATORY INFORMATION

#### SARA (311, 312) hazard class:
- Immediate health: None
- Delayed health: None
- Fire: None
- Sudden Release of Pressure Hazard: None

Company: ADVANCED STERILIZATION PRODUCTS
Product name: CIDEX® OPA Solution
Product code: ASPOPA
CO 25303-7
Reactivity: None

TSCA inventory list: Listed under TSCA: Yes

WHMIS:
- WHMIS trade secret: None
- WHMIS hazard class: None

Canada DSL inventory list: Listed on DSL: Yes

Notes:
1. SARA = Superfund Amendments and the Reauthorization Act.
2. CERCLA = Comprehensive Environmental Response, Compensations and Liability Act.
3. FIFRA = Federal Insecticide, Fungicide and Rodenticide Act
4. TSCA = Toxic Substance Control Act
5. WHMIS = Canadian Workplace Hazardous Materials Information System
6. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. OTHER INFORMATION

This data sheet contains changes from the previous version in section(s):
None

Additional advice: None

Literary Reference: None

MSDS format: North American Format - U.S. and Canada
This Material Safety Data Sheet was prepared in accordance with OSHA 29 CFR 1910.1200.

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End of Safety Data Sheet