PART I  What is the material and what do I need to know in an emergency?

1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED): CIDEX® OPA SOLUTION
CHEMICAL NAME/CLASS: Ortho-phthalaldehyde and Inorganic Salt Solution, CAS # 643-79-8
PRODUCT USE: High Level Disinfectant
SUPPLIER/MANUFACTURER'S NAME: ADVANCED STERILIZATION PRODUCTS
U.S. ADDRESS: 33 Technology Drive
Irvine, CA  92618
U.S. EMERGENCY PHONE: CHEMTREC: 1-800-424-9300
CHEMTREC INTERNATIONAL: 1-703-527-3887
U.S. BUSINESS PHONE: 1-800-595-0200
DATE OF PREPARATION: Release date.

2. COMPOSITION and INFORMATION ON INGREDIENTS

Ingredients that are 1% or greater need to be reported on an MSDS unless the component is carcinogenic. Since CIDEX OPA Solution has the active ingredient at 0.55% (99.45% inactive ingredients), and none of the components are carcinogenic, this section is not applicable.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This is a clear, light blue solution that is practically odorless. Health Hazards: This product is predominantly water and presents minimal hazards. The health hazards associated with contact with this product include the potential for irritation of the eyes, skin, nose, and other tissues. Flammability Hazards: Non flammable. Reactivity Hazards: Negligible.
LIKELY ROUTE OF EXPOSURE: Inhalation, skin/eye contact.

INHALATION: Breathing vapors may be irritating to the nose, throat, or respiratory system. May cause coughing, chest discomfort and tightness, difficulty with breathing or headache. Symptoms subside when exposure ends. Pre-existing bronchitis or asthma conditions can be aggravated by exposure to this product. Heating of the solution will increase its potential for irritation.

CONTACT WITH SKIN or EYES: Persons with potential exposure should not wear contact lenses. Direct eye contact with the product may cause stinging, excess tearing, and redness. Skin contact may cause staining, especially after prolonged exposure. Repeated skin contact may cause dermatitis.

INGESTION: Ingestion may cause irritation or chemical burns of the mouth, throat, esophagus and stomach. Symptoms may include vomiting, diarrhea, and nausea.

INJECTION: Injection of this material would lead to pain, mild irritation, and swelling at the site of injection.

HAZARDOUS MATERIAL INFORMATION SYSTEM

| HEALTH  | (BLUE) | 1 |
| FLAMMABILITY  | (RED) | 0 |
| REACTIVITY  | (YELLOW) | 0 |

PROTECTIVE EQUIPMENT

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<th>EYES</th>
<th>RESPIRATORY</th>
<th>HANDS</th>
<th>BODY</th>
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For routine applications.

PART II  What should I do if a hazardous situation occurs?

4. FIRST-AID MEASURES

SKIN EXPOSURE: Wash affected area immediately with plenty of soap and water for at least 15 minutes. If a skin reaction should occur, seek medical advice.

EYE EXPOSURE: Go to the nearest eyewash station and rinse immediately with plenty of water for at least 15 minutes. Seek medical advice.

INHALATION: If inhaled, remove person exposed to fresh air, and seek medical advice.

INGESTION: If swallowed, do not induce vomiting. Seek medical advice immediately. CALL PHYSICIAN OR YOUR LOCAL POISON CONTROL CENTER FOR MOST CURRENT INFORMATION.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not applicable.

FLAMMABLE LIMITS (in air by volume, %): Not Applicable

FIRE EXTINGUISHING MATERIALS: Select fire extinguishing media appropriate for the surrounding area.

SPECIAL FIRE-FIGHTING PROCEDURES: Wear self contained breathing apparatus, eye protection and protective clothing to prevent contact with skin and eyes.
6. ACCIDENTAL RELEASE MEASURES

RELEASE RESPONSE: Responders should wear appropriate personal protective equipment (for example, chemical goggles, gloves, apron or lab coat) during the clean up of spills. See Section 13 for disposal.

For spill neutralization, sprinkle approximately 25 grams of glycine (free base) powder per gallon of estimated CIDEX® OPA Solution spill. With a mop or other tool, thoroughly blend the glycine into the spill. Allow 5 minutes for deactivation of o-phthalaldehyde. Close storm-water drains and take other measures to protect human health and the environment, as necessary. Place all neutralized spill residue and disposable clean-up materials in an appropriate container and seal. Rinse area and tools with soap and water solution and follow with a water rinse. Dispose of in accordance with applicable U.S. Federal, state, or local regulations, or appropriate standards of Canada (see Section 13, Disposal Considerations).

PART III  How can I prevent hazardous situations from occurring?

7. HANDLING and STORAGE

WORK AND HYGIENE PRACTICES: All employees working with this product must be properly trained. Avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Avoid breathing mists and sprays of this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

STORAGE AND HANDLING PRACTICES: Store containers in a cool, dry location (15-30°C, 59-86°F), away from direct sunlight, or sources of intense heat. Store away from incompatible materials (see Section 10, Stability and Reactivity). Keep container tightly closed when not in use. Empty containers may contain residual amounts of this product; and must be triple rinsed prior to disposal.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use adequate ventilation. If existing ventilation is not adequate, product should be used with a local exhaust hood, or in ductless fume hoods/portable ventilation system.

RESPIRATORY PROTECTION: None normally required for routine use.

EYE PROTECTION: Safety glasses/goggles as authorized in 29 CFR 1910.133, applicable U.S. State regulations, or the appropriate standards of Canada.

HAND PROTECTION: Latex, PVC or nitrile rubber gloves for routine use. Latex gloves should be changed frequently (every 10-15 minutes) during use of product. Use double gloves for spill response (latex covered by nitrile rubber) and follow Accidental Release Measures provided in Section 6 of this MSDS.

BODY PROTECTION: Use safety glasses / chemical goggles, gloves, apron or lab coat.

9. PHYSICAL and CHEMICAL PROPERTIES

EVAPORATION RATE (n-BuAc = 1): Similar to water.
SPECIFIC GRAVITY (water = 1): 1.0003 g/cc  MELTING/FREEZING POINT: 0°C (32°F)
SOLUBILITY IN WATER: Soluble.  BOILING POINT: 100°C (212°F)
pH (0.1 M Solution): 7.2-7.8  ODOR: Practically odorless.
FLASH POINT: Not applicable.  FORM: Liquid.
COLOR: Clear, light blue.  HOW TO DETECT THIS SUBSTANCE (warning properties): The color may be a distinguishing characteristic for this product, if spilled. The product stains proteins on surfaces to grey/black.

10. STABILITY and REACTIVITY

STABILITY: Stable.
INCOMPATIBILITY: Strong acids, strong bases and strong oxidizers.

PART IV  Is there any other useful information about this material?

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA:
Eye exposure (rabbit) = slightly irritating, but reversible in seven days
LD_{50} (oral, rat) > 5000 mg/kg  
LD_{50} (skin, rabbit) > 2000 mg/kg  

**SUSPECTED CANCER AGENT:** This product's components are not found on the following lists: U.S. FEDERAL OSHA Z LIST, NTP, IARC, and CAL/OSHA.  

**SENSITIZATION TO THE PRODUCT:** Non sensitizer  

**REPRODUCTIVE TOXICITY INFORMATION**  

**Mutagenicity:** Rat (acute in vivo cytogenetics assay with OPA >99%) – Negative  
(Gene mutation in mammalian cells in vitro with OPA >99%) – Negative  
Ames Assay (gene mutation in bacteria with OPA >99%) – Negative  
(Sister chromatid exchange assay in vitro with Chinese hamster ovary cells OPA >99%) – weakly positive.  
Teratology: Rat NOEL: 20 mg/kg/day  

No controlled clinical study data is available.  

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Preexisting asthma, bronchitis, or dermatitis and other skin disorders can be aggravated by exposure to this product.  

**RECOMMENDATIONS TO PHYSICIANS:** Probable mucosal damage from oral exposure may contraindicate the use of gastric lavage.  

**12. ECOLOGICAL INFORMATION**  

**ENVIRONMENTAL STABILITY:** The components of this product will slowly decompose into inorganic and organic compounds.  

**13. DISPOSAL CONSIDERATIONS**  
Waste disposal must be in accordance with appropriate U.S. Federal, state, and local regulations or with regulations of Canada. Spent CIDEX® OPA Solution may be disposed down the drain, where authorized.  

**14. TRANSPORTATION INFORMATION**  
**THIS MATERIAL IS NOT HAZARDOUS, PER THE U.S. DEPARTMENT OF TRANSPORTATION (49 CFR 172.101).**  
**MARINE POLLUTANT:** No component of this product is designated as a Marine Pollutant, per Appendix B to 49 CFR 172.101.  
**TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:** THIS MATERIAL IS NOT CONSIDERED AS DANGEROUS GOODS.  

**15. REGULATORY INFORMATION**  
**U.S. SARA REPORTING REQUIREMENTS:** The components of this product are not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.  
**U.S. TSCA INVENTORY STATUS:** The components of this product are listed on the TSCA Inventory.  
**CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65):** No component of this product is on the California Proposition 65 lists.  
**ADDITIONAL CANADIAN REGULATIONS:**  
**CANADIAN DSL/NDSL INVENTORY STATUS:** The components of this product are listed on the DSL Inventory.  
**CANADIAN WHMIS SYMBOLS:** Class D2B: Other Toxic Effects  

**16. OTHER INFORMATION**  
**PREPARED BY:** Advanced Sterilization Products  
33 Technology Drive  
Irvine, CA 92618  

**DATE OF PRINTING:** October 25, 1999  

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The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Advanced Sterilization Products assumes no responsibility for injury to the vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, Advanced Sterilization Products assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material.
even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.