



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name CIDEX Activated Dialdehyde Solution
Issue date 9/14/12
Change Order # 1005190
CAS # Mixture
Revision # F
MSDS Number 006
Synonym(s) CIDEX Solution
Manufacturer/Supplier Advanced Sterilization Products
33 Technology Drive, Irvine
CA 92618
Telephone number 1-800-755-5900
Emergency 24-Hour phone (Access code): 1-760-476-3962 (333623)

2. Hazards Identification

Physical state Liquid.
Appearance Unactivated, colorless liquid; Activated, green liquid.
Emergency overview WARNING
Causes skin, eye and respiratory tract irritation. May cause sensitization by skin contact.
OSHA regulatory status This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects
Routes of exposure Inhalation. Ingestion. Skin contact. Eye contact.
Eyes Risk of serious damage to eyes.
Skin May cause skin irritation. May cause allergic skin reaction.
Inhalation Vapor may cause irritation of the upper respiratory tract (nose and throat) and lungs. May cause asthma-like symptoms in sensitive individuals.
Ingestion Ingestion may cause severe irritation of the mouth, the esophagus and the gastrointestinal tract. Ingestion of this product may cause nausea, vomiting and diarrhea.
Target organs Eye Skin
Chronic effects Not known.
Signs and symptoms Sensitization. Irritation of eyes and mucous membranes. Skin irritation. Upper respiratory tract irritation.
Potential environmental effects The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Glutaraldehyde	111-30-8	2.55

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First Aid Measures

First aid procedures
Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.
Skin contact Wash skin thoroughly with soap and water. Get medical attention if irritation develops and persists.
Inhalation Remove victim to fresh air. If breathing is difficult, give oxygen. Get medical attention.

Ingestion	Immediately rinse mouth and drink plenty of water. Keep person under observation. Do not induce vomiting. If vomiting occurs, keep head low. If person becomes uncomfortable seek medical advice.
Notes to physician	If the product is ingested, probable mucosal damage may contraindicate the use of gastric lavage. Treat the affected person appropriately.
General advice	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Flammable properties	Fire or high temperatures create:
Extinguishing media	
Suitable extinguishing media	Extinguish with water spray, carbon dioxide, dry chemical or material appropriate for the surrounding fire.
Unsuitable extinguishing media	None.
Protection of firefighters	
Protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do it without risk.
Hazardous combustion products	Carbon oxides.

6. Accidental Release Measures

Personal precautions	Avoid inhalation and contact with skin and eyes. Use personal protection as recommended in Section 8 of the MSDS.
Environmental precautions	Avoid discharge into storm drains, water courses or onto the ground.
Methods for containment	Stop leak if you can do so without risk.
Methods for cleaning up	Contain spill by placing suitable absorbent material around the edges of the spill and work inward. Carefully scoop up into waste container for disposal. For each estimated gallon of spill disperse about 228g of sodium bisulfite powder (CAS 7631-90-5) or 25g of glycine (56-40-6) on spill. Thoroughly blend into CIDEX Solution. Allow 5 minutes for neutralization. Dispose of in accordance with applicable Federal, State and Local Regulations. Following product recovery, flush area with water.
Other information	Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling	Provide adequate ventilation. Avoid inhalation of vapors/spray and contact with skin and eyes. Use in well-ventilated area and use with appropriate exhaust ventilation, for example a minimum of 10 air exchanges per hour or as defined by state and local regulations. Use appropriate Personal Protective Equipment. Wash thoroughly after handling. Observe good industrial hygiene practices.
Storage	Store in closed original container at temperatures at 15 - 30°C (59 - 86°F). Store away from incompatible materials.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Glutaraldehyde (111-30-8)	Ceiling	0.05 ppm

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Glutaraldehyde (111-30-8)	Ceiling	0.2 mg/m3 0.05 ppm

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
Glutaraldehyde (111-30-8)	Ceiling	0.05 ppm

Canada. Ontario OELs. (Ministry of Labor - Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
Glutaraldehyde (111-30-8)	Ceiling	0.05 ppm

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Glutaraldehyde (111-30-8)	Ceiling	0.41 mg/m ³ 0.1 ppm

Mexico. Occupational Exposure Limit Values

Components	Type	Value
Glutaraldehyde (111-30-8)	Ceiling	0.7 mg/m ³ 0.2 ppm

Exposure guidelines	Use personal protective equipment as required. Keep working clothes separately.
Engineering controls	Provide adequate ventilation and minimize the risk of inhalation of vapors and mists. Use in well-ventilated area and use with appropriate exhaust ventilation, for example a minimum of 10 air exchanges per hour or as defined by state and local regulations.
Personal protective equipment	
Eye / face protection	Wear safety glasses with side shields.
Skin protection	Wear chemical-resistant, impervious gloves. Suitable gloves can be recommended by the glove supplier. Wear suitable protective clothing.
Respiratory protection	In case of risk of inhalation of vapour/aerosols: Use high efficiency particulate respirator with appropriate filter.
General hygiene considerations	Wash thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance	Unactivated, colorless liquid; Activated, green liquid.
Color	Unactivated, colorless; Activated, green.
Odor	Characteristic aldehyde.
Odor threshold	Not available.
Physical state	Liquid.
Form	Liquid.
pH	3 - 4.6 (unactivated) 8.2 - 9.2 (activated)
Melting point	Not available.
Freezing point	Not available.
Boiling point	Not available.
Flash point	Not available.
Evaporation rate	1
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	0.0012 mmHg (68°F/20°C)
Vapor density	1.1
Specific gravity	1.003
Solubility (water)	Completely Soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	212 °F (100 °C)
Decomposition temperature	Not available.

10. Chemical Stability & Reactivity Information

Chemical stability	Stable under normal temperature conditions.
Conditions to avoid	Extremes of temperature, direct sunlight and prolonged heating at temperature above 40°C.

Incompatible materials	Strong oxidizers, strong acids, and strong bases.
Hazardous decomposition products	Carbon oxides.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Product	Test Results
CIDEX Activated Dialdehyde Solution (Mixture)	Acute Dermal LD50 Rabbit: > 2000 mg/kg Acute Oral LD50 Rat: 4250 mg/kg
Acute effects	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Local effects	Causes skin and eye irritation. May cause irritation of respiratory tract.
Sensitization	May cause allergic skin reaction.
ACGIH Sensitizer	
Glutaraldehyde (CAS 111-30-8)	Sensitizer.
Chronic effects	Not known.
Carcinogenicity	Not classified.
ACGIH Carcinogens	
Glutaraldehyde (CAS 111-30-8)	A4 Not classifiable as a human carcinogen.
Mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Reproductive effects	Not classified.
Symptoms and target organs	Sensitizing. Skin irritation. Irritation of eyes and mucous membranes. Upper respiratory tract irritation.
Further information	No other specific acute or chronic health impact noted.

12. Ecological Information

Ecotoxicity	Not expected to be harmful to aquatic organisms.
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulation / Accumulation	No data available.
Partition coefficient (n-octanol/water)	Not available.
Mobility in environmental media	The product is soluble in water.

13. Disposal Considerations

Disposal instructions	Any disposal practice must be in compliance with local, state and federal laws and regulations (contact local or state environment agency for specific rules). Do not dump in sewers, any body of water or on the ground.
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14. Transport Information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

TDG

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations This product is hazardous according to OSHA 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification(40 CFR 707, Subpt. D)

Not regulated.

CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance (40 CFR 355, Appendix A) No

Section 311/312 (40 CFR 370) No

Drug Enforcement Administration (DEA) (21 CFR 1308.11-15) Not controlled

WHMIS status Controlled

WHMIS classification D1B - Immediate/Serious-TOXIC
D2B - Other Toxic Effects-TOXIC
E - Corrosive

WHMIS labeling



Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations

US - California Hazardous Substances (Director's): Listed substance

Glutaraldehyde (CAS 111-30-8) Listed.

US - Massachusetts RTK - Substance: Listed substance

Glutaraldehyde (CAS 111-30-8) Listed.

US - New Jersey RTK - Substances: Listed substance

Glutaraldehyde (CAS 111-30-8) Listed.

US - Pennsylvania RTK - Hazardous Substances: Listed substance

Glutaraldehyde (CAS 111-30-8) Listed.

16. Other Information

HMIS® ratings

Health: 2
Flammability: 0
Physical hazard: 0

NFPA ratings

Health: 2
Flammability: 0
Instability: 0

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.