



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name ENZOL® Enzymatic Detergent
Issue date 9/14/12
Change Order # 1005190
CAS # Mixture
Revision # G
MSDS Number 008
Synonym(s) CIDEZYME® Enzymatic Detergent
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 Clear liquid.
Emergency overview DANGER

May cause allergic respiratory reaction. Causes skin, eye and respiratory tract irritation.
 This product is hazardous according to OSHA 29 CFR 1910.1200.

OSHA regulatory status

Potential health effects

Routes of exposure Inhalation. Ingestion. Skin contact. Eye contact.

Eyes Causes eye irritation.

Skin Causes skin irritation.

Inhalation May cause respiratory tract irritation. May cause allergic respiratory reaction.

Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Target organs Respiratory system Eye Skin Gastro-intestinal tract

Chronic effects Not known.

Signs and symptoms Wheezing. Cough, Shortness of breath, Headache, Nausea, Vomiting. Skin irritation. Irritation of eyes and mucous membranes. Upper respiratory tract irritation.

3. Composition / Information on Ingredients

| Components | CAS # | Percent |
|-------------|-----------|---------|
| Subtilisins | 9014-01-1 | <5 |

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 Treat symptomatically.

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

Specific hazards arising from the chemical None.

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.

Specific methods Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Hazardous combustion products None known.

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 Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. 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 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).

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

| Components | Type | Value |
|-------------------------|------|--------------------------|
| Subtilisins (9014-01-1) | TWA | 0.0001 mg/m ³ |

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

| Components | Type | Value |
|-------------------------|---------|--------------------------|
| Subtilisins (9014-01-1) | Ceiling | 0.0001 mg/m ³ |

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

| Components | Type | Value |
|-------------------------|---------|--------------------------|
| Subtilisins (9014-01-1) | Ceiling | 0.0001 mg/m ³ |

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

| Components | Type | Value |
|-------------------------|---------|--------------------------|
| Subtilisins (9014-01-1) | Ceiling | 0.0001 mg/m ³ |

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

| Components | Type | Value |
|-------------------------|---------|--------------------------|
| Subtilisins (9014-01-1) | Ceiling | 0.0001 mg/m ³ |

Mexico. Occupational Exposure Limit Values

| Components | Type | Value |
|-------------------------|---------|--------------------------|
| Subtilisins (9014-01-1) | Ceiling | 0.0001 mg/m ³ |

| | |
|---------------------------------------|--|
| 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. |
| 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 | Clear liquid. |
| Color | Violet. |
| Odor | Spearmint. |
| Odor threshold | Not available. |
| Physical state | Liquid. |
| Form | Liquid. |
| pH | 7.8 - 8.8 |
| Melting point | Not available. |
| Freezing point | Not available. |
| Boiling point | Not available. |
| Flash point | > 199.4 °F (> 93 °C) |
| Evaporation rate | Not available. |
| Flammability limits in air, upper, % by volume | Not available. |
| Flammability limits in air, lower, % by volume | Not available. |
| Vapor pressure | Not available. |
| Vapor density | Not available. |
| Specific gravity | Not available. |
| Solubility (water) | Not available. |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |

10. Chemical Stability & Reactivity Information

| | |
|---|--|
| Chemical stability | Stable at normal conditions. |
| Conditions to avoid | Temperatures above 40 °C |
| Incompatible materials | None known. |
| Hazardous decomposition products | Carbon oxides. |
| Possibility of hazardous reactions | Hazardous polymerization does not occur. |

11. Toxicological Information

| | |
|------------------------|---|
| 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 respiratory reaction. |
| Chronic effects | Not known. |
| Carcinogenicity | Not classified. |

| | |
|-----------------------------------|---|
| 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 | Wheezing. Cough, Shortness of breath, Headache, Nausea, Vomiting. 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 | Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Waste from residues / unused products | Dispose in accordance with all applicable regulations. |
| Contaminated packaging | Empty containers should be taken to an approved waste handling site for recycling or disposal. |

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

Canadian regulations

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS status

Controlled

WHMIS classification

D2A - Other Toxic Effects-VERY TOXIC

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) | No |
| 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

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

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

Subtilisins (CAS 9014-01-1)

Listed.

Mexico regulations

This safety data sheet was prepared in accordance with the Official Mexican Standard (NOM-018-STPS-2000).

16. Other Information

HMIS® ratings

Health: 1*
Flammability: 0
Physical hazard: 0

NFPA ratings

Health: 1
Flammability: 0
Instability: 0

Disclaimer

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