

## SAFETY DATA SHEETS

**This SDS packet was issued with item:**

071208701

N/A

## MATERIAL SAFETY DATA SHEET

### SECTION I: Product/Company Information

**Identity:** DIAMOND-ZYME™ Enzymatic Cleaning Solution Concentrate (dental instrument and Evacuation System cleaner)  
**Distributor:** AXIS Dental Corporation  
**Address:** 800 W. Sandy Lake Road, Suite 100, Coppell, TX 75019  
**Telephone:** (469) 635-6107

**Manufacturer:** Enzyme Industries, Inc.  
**Address:** 2090 James Parkway, Heath, OH 43056  
**Telephone:** (740) 929-4975

### SECTION II & III: Hazardous Ingredients & Physical / Chemical Characteristics

**Hazardous components:** Nonionic Surfactants 50%; Protease 10%; Fragrance 2%; Propylene Glyco 15%; Water 3%  
**Exposure limits:** Not determined  
**Boiling point:** 212°F **Freezing point:** 30°F  
**Solubility in water:** Miscible  
**pH:** 8.5  
**Specific gravity** (water = 1): 1.08  
**Evaporate rate** (Butyl Acetate = 1):  
**Appearance and odor:** Green Liquid, peppermint odor

### SECTION IV: Fire and Explosion Hazard Data

**Flash point (method used):** 212°F; Penskey-Maren CC  
**Extinguishing media:** Alcohol type foam, universal foam, dry chemical or water spray  
**Special fire fighting procedures:** Use water spray to cool fire exposed surfaces and to protect personnel.  
**Unusual fire and explosion hazards:** None known.  
**Hazardous combustion Products:** Carbon monoxide, Carbon Dioxides of Nitrogen

### SECTION V: Reactivity Data

**Stability:** Stable  
**Incompatibility** (Materials to avoid): Avoid contact with strong acids and strong oxidizing agents.  
**Hazardous decomposition or by products:** Low molecular weight hydrocarbons, ammonia, polyacrylates and acrylic acid.  
**Hazardous polymerization:** Not applicable.  
**Toxicological Information:** Acute; **Eyes** - Draize Eye Score: 44.3; **Skin** - Irritating with primary irritation index of 3.46; **Ingestion** - Oral LD50 (rat)= >16.81g/kg.  
**Ecological Information:** This material is expected to degrade at a moderate rate and be considered "inherently biodegradable" according to OECD protocol. It degrade 51% in a Zahn Wellens Inherent Biodegradability (OECD 302D) test.

### SECTION VI: Health Hazard Data

**Routes of Entry:** **Inhalation?** Irritating to respiratory tract in high concentrations; **Skin?** Irritating, and prolonged exposure can cause damage; **Ingestion?** Minimal toxicity. Irritating to mouth, throat, and stomach; **Eyes?** Irritating, and may injure tissue if not removed promptly.  
**Emergency and first aid procedures:** **Eyes** - Immediately flush eyes with large amounts of water for at least 15 minutes. Get prompt medical attention. **Skin** - Flush with large amounts of water; use soap if available. Remove grossly contaminated clothing, including shoes and launder before reuse. If irritation persists, seek medical attention. **Ingestion** - If swallowed, and INDIVIDUAL IS CONSCIOUS, induce vomiting. Get prompt medical attention. **Inhalation** - Using proper respiratory protection, immediately remove the affected victim from exposer. Administer artificial respiration if breathing is stopped. Keep at rest. Call for prompt medical attention.

### SECTION VII: Precautions for Safe Handling and Use

**Precautions to be taken in handling and storing:** Keep container closed. Handle open containers with care. Store in a cool, well ventilated place away from incompatible materials. DO NOT handle or store near an open flame, heat or other sources of ignition. Protect from direct sunlight. Storage temperature: 120°F maximum.  
**Other precautions (Bulk storage/drums):** Do not pressurize, cut heat or weld container. Empty product containers may contain product residue. Do not reuse empty containers.

### SECTION VIII: Control Measures

**Recommended protection:** Use full PPE (Mask, Eyewear, Gown and Utility Gloves) while handling the solution and contaminated instruments.  
**Ventilation:** Use in well ventilated area.

**Safety Data Sheet (SDS)**

OSHA HazCom 2012 Standard 29 CFR 1910.1200. Prepared to GHS Rev03.

Printing date 06/20/2014

Reviewed on 06/20/2014

**\* 1 Identification****· Product identifier****· Trade name: Diamond Zyme****· Product description**

Anti-corrosive instruments presoak, ultrasonic cleaning solution and evacuation system cleaner designed for the dental, medical industries and veterinary industries. This product is a liquid with green coloring and a peppermint scent.

**· Details of the supplier of the safety data sheet****· Manufacturer/Supplier:**

Enzyme Industries of the U.S.A., Inc.

P.O. Box 2242

2090 James Parkway

Heath, OH 43056

Phone: (740) 929-4975

Fax: (740) 929-4836

www.enzymeindustries.com

**· Emergency telephone number: (740) 929-4975****\* 2 Hazard(s) identification****· Classification of the substance or mixture**

Causes skin irritation.

Causes eye irritation.

**· Label elements****· GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

**· Hazard pictograms**

GHS07

**· Signal word** Warning**· Hazard statements**

Causes skin and eye irritation.

**· Precautionary statements**

Wear protective gloves/protective clothing/eye protection/face protection.

Wash thoroughly after handling.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Specific treatment (see on this label).

Take off contaminated clothing and wash before reuse.

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

IF ON SKIN: Wash with plenty of water.

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- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**



### \* 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

Trade Secret	15-35%
⚠ Skin Irrit. 2, H315; STOT SE 3, H335; Eye Irrit. 2B, H320	
Trade Secret	15-35%
⚠ Acute Tox. 4, H302; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2B, H320	

### \* 4 First-aid measures

- **Description of first aid measures**
- **General information:**  
Symptoms may even occur after several hours; therefore observe area effected for at least 48 hours after the accident.
- **After inhalation:**  
Supply fresh air. If required, provide artificial respiration. Consult doctor if symptoms persist.  
In case of unconsciousness, place patient securely on side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Give large amounts of water. If symptoms persist consult doctor.
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

### \* 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (ie. sand, diatomite, acid binders, universal binders, sawdust).

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Dispose contaminated material as waste according to section 13.

Ensure adequate ventilation.

**· Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

**7 Handling and storage****· Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

**· Information about protection against explosions and fires:** No special measures required.**· Conditions for safe storage, including any incompatibilities****· Storage:****· Requirements to be met by storerooms and receptacles:** No special requirements.**· Information about storage in one common storage facility:** Not required.**· Further information about storage conditions:** Keep receptacle tightly sealed.**· Specific end use(s)** No further relevant information available.**\* 8 Exposure controls/personal protection****· Additional information about design of technical systems:** No further data; see section 7.**· Control parameters****· Components with occupational exposure limits:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

**· Additional information:** The lists that were valid during the creation were used as basis.**· Exposure controls****· Personal protective equipment:****· General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

**· Breathing equipment:** Not required.**· Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Select glove material based on penetration times, rates of diffusion and degradation.

**· Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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**· Penetration time of glove material**

The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.

**· Eye protection:** Tightly sealed goggles**\* 9 Physical and chemical properties****· Information on basic physical and chemical properties****· General Information****· Appearance:****Form:** Liquid**Color:** Green**· Odor:** Peppermint**· Odor threshold:** Not determined.**· pH-value @ 20 °C (68 °F):** 8.5**· Change in condition****Melting point/Melting range:** Not determined.**Boiling point/Boiling range:** 100 °C (212 °F)**· Flash point:** 100 °C (212 °F)**· Flammability (solid, gaseous):** Not applicable.**· Ignition temperature:** 317 °C (603 °F)**· Decomposition temperature:** Not determined.**· Auto igniting:** Product is not selfigniting.**· Danger of explosion:** Product does not present an explosion hazard.**· Explosion limits:****Lower:** 0.0 Vol %**Upper:** 12.6 Vol %**· Vapor pressure @ 20 °C (68 °F):** 23 hPa (17 mm Hg)**· Density @ 20 °C (68 °F):** 1.08 g/cm<sup>3</sup> (9.013 lbs/gal)**· Relative density** Not determined.**· Vapour density** Not determined.**· Evaporation rate** Not determined.**· Solubility in / Miscibility with****Water:** Fully miscible.**· Partition coefficient (n-octanol/water):** Not determined.**· Viscosity:****Dynamic:** Not determined.**Kinematic:** Not determined.**· Solvent content:****Organic solvents:** 12.5 %**Water:** 50.2 %**VOC content:** 49.8 %**· Other information** No further relevant information available.

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**10 Stability and reactivity**

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

**\* 11 Toxicological information**

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

**Trade Secret**

Oral LD50 1400 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Harmful  
Irritant

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

**\* 12 Ecological information**

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Water hazard class 1 (Self-assessment): slightly hazardous for water
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

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**\* 13 Disposal considerations**

- **Waste treatment methods**
- **Recommendation:** Recycle or dispose with household trash.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

**\* 14 Transport information**

- **UN-Number**
- **DOT, ADR, ADN, IATA** Non-Regulated Material
- **IMDG** Non-Regulated Material
- **UN proper shipping name** Not Regulated
- **DOT, ADR, ADN, IMDG, IATA** Non-Regulated Material
- **Transport hazard class(es)**
- **DOT, ADR, ADN, IMDG, IATA**
- **Class** Non-Regulated Material
- **Packing group**
- **DOT, ADR, IMDG, IATA** Non-Regulated Material
- **Environmental hazards:**
- **Marine pollutant:** No
- **Special precautions for user** Not applicable.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.
- **UN "Model Regulation":** -

**\* 15 Regulatory information**

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

· <b>Section 355 (extremely hazardous substances):</b>
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None of the ingredients is listed.
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· <b>Section 313 (Specific toxic chemical listings):</b>
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None of the ingredients is listed.
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· <b>TSCA (Toxic Substances Control Act):</b>
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All ingredients are listed.
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· <b>Proposition 65</b>
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· <b>Chemicals known to cause cancer:</b>
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None of the ingredients is listed.
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· <b>Chemicals known to cause reproductive toxicity for females:</b>
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None of the ingredients is listed.
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· <b>Chemicals known to cause reproductive toxicity for males:</b>
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None of the ingredients is listed.
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· <b>Chemicals known to cause developmental toxicity:</b>
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None of the ingredients is listed.
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· **Carcinogenic categories**· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**

GHS07

· **Signal word** Warning· **Hazard statements**

Causes skin and eye irritation.

· **Precautionary statements**

Wear protective gloves/protective clothing/eye protection/face protection.

Wash thoroughly after handling.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Specific treatment (see on this label).

Take off contaminated clothing and wash before reuse.

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

IF ON SKIN: Wash with plenty of water.

· **National regulations:**

The product is subject to be labeled according with the prevailing version of the regulations on hazardous substances.

· **State Right to Know**

All ingredients are listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.**16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Date of preparation / last revision** 06/20/2014 / 7· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

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HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2B: Serious eye damage/eye irritation, Hazard Category 2B

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

· **\* Data compared to the previous version altered.**SDS / MSDS Created by MSDS Authoring Services ([www.MSDSAuthoring.com](http://www.MSDSAuthoring.com))