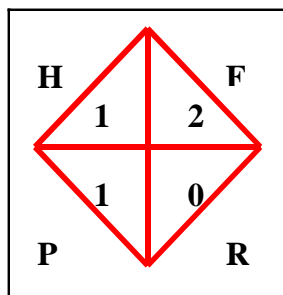


**MATERIAL SAFETY DATA SHEET****EFFECTIVE DATE: 9-1-2007****HMIS/NEPA HAZARD RATING**

**H**= Health  
**F** = Fire  
**R** = Reactivity  
**P** = Personal Protection

**HAZARD CODE:**

0= Least  
1 = Slight  
2 = Moderate  
3 = High  
4 = Extreme

**Section 1. Chemical Product and Company Identification**

Reference: Surfzyme Penetrant

This Material Safety Data Sheet (MSDS) was prepared for the above referenced Surfzyme Penetrant is formulated to be used on tough to clean parts or in a non-heated Parts Washer with a lid with a fusible link. This Material Safety Data Sheet (MSDS) applies only to unused, virgin fluids. ZYMO EUROPE Inc. has no control over the use of these fluids or what materials are introduced into the fluids and therefore cannot determine the hazardous/nonhazardous status of used Surfzyme degreasing fluids.

**Company Identification:**

ZYMO EUROPE Inc.  
PO Box 9240  
Fleming Island, FL 32006  
Tel: (904)-213-7994  
Fax: (206)-350-2871

**Name of Preparer:** Rob Whiteman

**Section 2. Composition / Information on Ingredients****Surfzyme Penetrant:**

- \* OSHA Hazardous Components: (None)
- \* Significant non-hazardous components: (d-limonene and surfactants)
- \* Specific formulation is proprietary

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**Section 3. Hazards Identification**

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**Emergency Overview:** The Surfzyme Penetrant is characterized as:

- \* Amber-white in color.
- \* A flowing liquid.
- \* Biodegradable.
- \* Non-hazardous.
- \* Flammable
- \* No explosion hazard
- \* Neutral pH
- \* Perfumed Odor

**Potential Health Effects:**

**PRIMARY ROUTES OF ENTRY:**                      **Skin, Inhalation**

- \* **Inhalation** - None indicated, although it is always good safety practices to avoid breathing sprayed or splashed industrial cleaners and degreasers.
- \* **Skin** - Will not irritate the skin and is not likely to cause allergic skin reactions
- \* **Eyes** - Slight irritation to the eyes - flush with clean water.
- \* **Ingestion** – May cause irritation to digestive tract if swallowed. Do not drink the product.

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**Section 4. First Aid Measures**

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- \* **Inhalation:** Remove to fresh air. Apply artificial respiration if necessary.
  - \* **Eyes** - Flush eyes with plenty of water for 15 minutes if liquid contact occurs. It is also recommended to have medical personnel check your eyes afterwards.
  - \* **Skin** - If irritation occurs, wash exposed areas with soap and water. Discontinue use of product or wear protective clothing. It is recommended that protective gloves be worn when using any industrial strength cleaner or degreaser.
  - \* **Ingestion** – Do not induce vomiting. Give 8 to 16 ounces of water to dilute substance. Call a physician.
  - \* **Chronic exposure:** Dermatitis.
  - \* **Medical conditions generally aggravated exposure.** Not determined.
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**Section 5. Fire Fighting Measures**

**Fire and Explosion:** Surfzyme degreasing fluid is not considered flammable nor combustible. Surfzyme degreasing fluid does not present an explosion hazard, nor is it considered pyrophoric (spontaneously igniting in air).

- \* Flammable Limits LEL: Not determined UEL: Not determined
- \* Flash Point 130-140° F. TCC

\* **Special Fire Fighting Procedures:** Foam, CO<sub>2</sub>, dry chemical (Class B). Water may be ineffective, but water should be used to keep fire containers cool. If a leak or spill has ignited, use water spray to disperse vapors and to protect those attempting to stop leak. Water spray may be used to flush spills away from exposures. Minimize breathing of gases, vapor, fumes or decomposition products. Use supplied-air breathing equipment for enclosed or confined spaces or as otherwise needed.

\* **Unusual Fire and Explosion Hazards** This is a volatile and gives off invisible vapors. Either the liquid or vapor may settle in low areas or travel distance along the ground or surface to ignitions sources where they might ignite or explode.

LEL - Lower explosive limit.

UEL - Upper explosive limit.

**Section 6. Accidental Release Measures**

**Steps to be taken in case material is released or spilled:**

**Spills:** Spilled uncontaminated product can be recovered and placed into appropriately labeled containers for future use. Spills should be absorbed with an inert absorbent material and shoveled into waste containers for disposal. Residues should be rinsed and diluted with water. Reporting requirement should always meet local, state and federal regulations for any spill.

**Waste Disposal Method:** See Section 13 and 14 for information.

**EPA Reportable Quantity (RQ) 40CFR302 (CERCLA 104):** N/A

**EPA Toxic Chemical Release Reporting: 40CFR372 (SARA 313):**

- \* CHEMICAL D-limonene
- \* CAS NO. 5989-27-5
- \* Wt % In Product 98%+

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**Section 7. Handling and Storage**

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**Precautions to be taken in handling and storing:** Store in cool, dry area. Do not freeze. Keep container closed when not in use. Always store material in properly labeled containers. Follow label instructions.

**Other Precautions:** Keep this and all chemicals out of reach of small children.  
Do not drink.

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**Section 8. Exposure Controls, Personal Protection**

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- \* **Respiratory Protection (Specify type):** Self-contained breathing apparatus at high concentration.
- \* **Ventilation (General):** Mechanical to maintain a low vapor pressure.
- \* **Protective Gloves:** It is recommended that solvent resistant gloves be worn when using industrial cleaners.
- \* **Eye Protection:** Eye Protection should be used if the material is used in an application that could cause eye contact.
- \* **Protective Clothing or Equipment:** The use of an apron is recommended when using industrial cleaners and degreasers.
- \* **Other/Hygienic Practices:** Always use good housekeeping procedures when using any chemical products. Personal cleanliness is always appropriate. Frequent washing minimizes inadvertent exposure.

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**Section 9. Physical and Chemical Properties**

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* <b>Appearance:</b>	Amber-white color
* <b>Odor</b>	Orange perfumed
* <b>Physical State:</b>	Liquid
* <b>Vapor Pressure:</b>	1mm Hg @ 20°C
* <b>Vapor Density:</b>	4.7 @ 80°C
* <b>Melting Point:</b>	Not determined
* <b>Viscosity</b>	Not determined
* <b>Evaporation rate:</b>	<1 (n-butyl acetate -1)
* <b>Volatile organic content</b>	<b>100%</b>
* <b>Molecular Weight:</b>	Not determined
* <b>Boiling Point:</b>	311-350° F
* <b>Specific Gravity:</b>	0.843 @ 25°C
* <b>Solubility in Water:</b>	Insoluble
* <b>pH:</b>	Essentially neutral

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**Section 10. Stability and Reactivity**

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* <b>Stability:</b>	Stable
* <b>Conditions to Avoid:</b>	None known
* <b>Materials to Avoid:</b>	Strong
oxidizers	
* <b>Hazardous Decomposition or Combustion Products:</b>	Carbon monoxide
* <b>Hazardous Polymerization:</b>	Will not occur.

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**Section 11. Toxicological Information**

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* <b>Acute Oral Effects:</b>	Not determined.
* <b>Acute Dermal Toxicity:</b>	Not determined.
* <b>Multiple Dose Dermal Toxicity:</b>	Not determined.
* <b>Inhalation Toxicity:</b>	Not determined.
* <b>Eye Irritation:</b>	Not determined.
* <b>Skin Irritation:</b>	Not determined.
* <b>Sensitization:</b>	Not determined.
* <b>Mutagenesis:</b>	Not determined.

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**Section 12. Ecological Information**

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No data are available on the adverse effects of this material on the environment. The components of the Surfzyme solutions are biodegradable. No short term or long term effect on the environment is expected.

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**Section 13. Disposal Considerations**

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**For Liquids:**

- \* Local Sanitary Sewer only upon written approval.
- \* Disposal should always meet all local, state, and federal environmental regulations.
- \* DO NOT dispose of rags soaked with Surfzyme Penetrant or other combustible materials in an open container. Use covered container or soak with water.

**For Absorbed Liquids (Solid Waste):**

- \* Always contact your local landfill for disposal requirements on any solid waste.
- \* Disposal should always meet all local, state, and federal environmental regulations.

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**Section 14. Transport Information**

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Not a Department of Transportation (DOT) Hazardous Material.

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**Section 15. Regulatory Information**

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**SARA TITLE III Reporting Requirements:**

- |   |                         |
|---|-------------------------|
| * Section 302 - Extremely Hazardous Substances  | Reporting not required. |
| * Section 304 - Hazardous Releases              | Reporting not required. |
| * Section 311 - Community Right to Know (R-K-K) | Reporting not required. |
| * Section 312 - (R-T-K) Inventory Data          | Reporting not required. |
| * Section 313 - Emission and Release            | Reporting not required. |

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**Section 16. Other Information**

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**Permissible Exposure References:**

- (1) Registry of Toxic Effects of Chemical Substances Title 29 Code of Federal Regulations
- (2) National Toxicology Program (NTP) Report on Carcinogens
- (3) International Agency for Research on Cancer (IARC) Monographs

**Regulatory Standards:**  
172.101

DOT Title 49 Code of Federal Regulations

SARA Title III

**Information Contact:**

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To the best of our knowledge, the information contained herein is accurate. However, neither ZYMO EUROPE nor any of its subsidiaries or agents assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with

caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.