



SAFETY DATA SHEET

1. Identification

Product identifier ENZOL Enzymatic Detergent

Other means of identification

SDS number 11189-US

Product number 2252

Recommended use Detergent.

Recommended restrictions Restricted to professional users.

Manufacturer/Importer/Supplier/Distributor information

Company name Advanced Sterilization Products

Address 33 Technology Drive
Irvine, CA 92618

Country US

Telephone number 1-888-783-7723

E-mail ASP-SDS@asp.com

24-Hour emergency phone number CHEMTREC US: 1-800-424-9300 CCN 795874
CHEMTREC International: +1 703-741-5970

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Sensitization, respiratory Category 1

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statement

Prevention Avoid breathing mist. In case of inadequate ventilation wear respiratory protection.

Response If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center/doctor.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Propane -1,2 -diol	57-55-6	10 - 20
Disodium tetraborate decahydrate	1303-96-4	1 - < 3

Subtilisin	9014-01-1	0.1 - < 1
Composition comments	All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. Components not listed are either non-hazardous or are below reportable limits.	
4. First-aid measures		
Inhalation	In case of inhalation: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a poison center or doctor/physician.	
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.	
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.	
Ingestion	Rinse mouth. Get medical attention if symptoms occur.	
Most important symptoms/effects, acute and delayed	Exposure may cause temporary irritation, redness, or discomfort. Sensitization.	
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.	
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.	
5. Fire-fighting measures		
Suitable extinguishing media	Use extinguishing agent suitable for type of surrounding fire.	
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.	
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.	
Special 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 so without risk.	
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.	
General fire hazards	No unusual fire or explosion hazards noted.	
6. Accidental release measures		
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.	
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.	
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.	
7. Handling and storage		
Precautions for safe handling	Avoid breathing mist. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.	
Conditions for safe storage, including any incompatibilities	To maintain product quality, do not store in heat or direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Store in original container. Recommended storage temperature: 15 - 30 °C.	

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Disodium tetraborate decahydrate (CAS 1303-96-4)	STEL	6 mg/m3	Inhalable fraction.
	TWA	2 mg/m3	Inhalable fraction.
Subtilisin (CAS 9014-01-1)	Ceiling	0.00006 mg/m3	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Disodium tetraborate decahydrate (CAS 1303-96-4)	TWA	5 mg/m3
Subtilisin (CAS 9014-01-1)	STEL	0.00006 mg/m3

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value	Form
Propane -1,2 -diol (CAS 57-55-6)	TWA	10 mg/m3	Aerosol.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. General ventilation normally adequate.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Nitrile gloves are recommended.

Skin protection

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Liquid.
Color	Clear. Violet.

Odor Mint-like.

Odor threshold Not available.

pH 7.8 - 8.8

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Flash point > 199.4 °F (> 93.0 °C)

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Vapor pressure Not available.

Vapor density Not available.

Relative density 1.09

Solubility(ies)

Solubility (water) Soluble in water.

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity Not available.

Other information

Explosive properties Not explosive.

Oxidizing properties Not oxidizing.

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.

Conditions to avoid Contact with incompatible materials. Heat, flames and sparks. Avoid frost.

Incompatible materials Strong oxidizers, strong acids, and strong bases. Reducing agents.

Hazardous decomposition products Thermal decomposition of this product can generate carbon monoxide and carbon dioxide. Sulfur dioxide.

11. Toxicological information

Information on likely routes of exposure

Inhalation In case of inhalation: May cause allergy or asthma symptoms or breathing difficulties if inhaled. Prolonged inhalation may be harmful.

Skin contact Prolonged skin contact may cause temporary irritation.

Eye contact Direct contact with eyes may cause temporary irritation.

Ingestion May cause discomfort if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Exposure may cause temporary irritation, redness, or discomfort. Sensitization.

Information on toxicological effects

Acute toxicity Not expected to be acutely toxic.

Components	Species	Test Results
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Disodium tetraborate decahydrate (CAS 1303-96-4)

Acute

Dermal

LD50	Rabbit	> 2000 mg/kg, 24 Hours
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Inhalation

Dust

LC50	Rat	> 2.04 mg/l, 4 Hours
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Oral

LD50	Rat	> 2500 mg/kg
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Components	Species	Test Results
Propane -1,2 -diol (CAS 57-55-6)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	20800 mg/kg
Oral		
LD50	Rat	22000 mg/kg
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.	
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	May cause allergy or asthma symptoms or breathing difficulties if inhaled.	
Skin sensitization	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity	Not classifiable as to carcinogenicity to humans.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Not listed.		
NTP Report on Carcinogens		
Not listed.		
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)		
Not listed.		
Reproductive toxicity	The product contains a small amount of substance that may damage fertility or the unborn child.	
Specific target organ toxicity - single exposure	Not classified.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Not an aspiration hazard.	
Chronic effects	Prolonged inhalation may be harmful.	
Further information	No data available.	

12. Ecological information

Ecotoxicity	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.		
Components	Species		Test Results
Disodium tetraborate decahydrate (CAS 1303-96-4)			
<i>Acute</i>			
	LC50	Limanda limanda	74 mg/l, 4 days
Aquatic			
<i>Acute</i>			
Fish	LC50	Fathead minnow (Pimephales promelas)	79.7 mg/l, 4 days
Propane -1,2 -diol (CAS 57-55-6)			
Aquatic			
<i>Acute</i>			
Algae	EC50	Selenastrum capricornutum	19000 mg/l, 72 hours
Crustacea	LC50	Ceriodaphnia	18340 mg/l, 48 hours
Fish	LC50	Pimephales promelas	46500 mg/l, 96 hours
Persistence and degradability	Expected to be biodegradable.		
Bioaccumulative potential	The product is not expected to bioaccumulate.		
Mobility in soil	No data available.		
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.		

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. 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.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA)

All components of the mixture on the TSCA 8(b) inventory are designated "active".

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories Respiratory or skin sensitization

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Disodium tetraborate decahydrate (CAS 1303-96-4)

US. New Jersey Worker and Community Right-to-Know Act

Disodium tetraborate decahydrate (CAS 1303-96-4)

Propane -1,2 -diol (CAS 57-55-6)

US. Pennsylvania Worker and Community Right-to-Know Law

Disodium tetraborate decahydrate (CAS 1303-96-4)

Propane -1,2 -diol (CAS 57-55-6)

US. Rhode Island RTK

Disodium tetraborate decahydrate (CAS 1303-96-4)

Propane -1,2 -diol (CAS 57-55-6)

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Disodium tetraborate decahydrate (CAS 1303-96-4)

Subtilisin (CAS 9014-01-1)

International Inventories

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

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	06-February-2020
Revision date	-
Version #	01
HMIS® ratings	Health: 1* Flammability: 0 Physical hazard: 0
List of abbreviations	LD50: Lethal Dose 50%. EC50: Effective Concentration 50%.
References	HSDB® - Hazardous Substances Data Bank
Disclaimer	Advanced Sterilization Products cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.