SAFETY DATA SHEETS

This SDS packet was issued with item:

070909796

The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).

070909812 078587308

Safety Data Sheet

According to Canadian Hazardous Products Regulations and WHMIS 2015

Patterson® Enzyme Tablets

SECTION 1: Identification

Product identifier

Product name: Patterson® Enzyme Tablets
Product code: 090-9796

Recommended use of the product and restriction on use

Relevant identified uses: Ultra sonic cleaner for dental instruments.
Uses advised against: Any use other than recommended above.
Reasons why uses advised against: Not determined or not applicable.

Manufacturer or supplier details

Manufacturer:
Canada
Patterson Dentaire Canada Inc.
1205 boul Henri-Bourassa West
Montreal, Quebec H3M 3E6
+1 514 745 4040

Emergency telephone number:

Canada
CHEMTREC
Within USA and Canada: 1-800-424-9300 (24 hours)
Outside USA and Canada: +1-703-527-3887 (24 hours)

SECTION 2: Hazard identification

GHS classification:

Skin irritation, category 2
Serious eye damage, category 1
Respiratory sensitization, category 1
Specific target organ toxicity - single exposure, category 3, respiratory tract irritation

Label elements

Hazard pictograms:

Signal Word: Danger

Hazard statements:

H315 Causes skin irritation
H318 Causes serious eye damage
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

H335 May cause respiratory irritation

Precautionary statements:

P264 Wash any exposed skin thoroughly after handling
P280 Wear protective gloves, protective clothing, eye protection and face protection
P261 Avoid breathing dust
P284 In case of inadequate ventilation wear respiratory protection
P271 Use only outdoors or in a well-ventilated area
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 Immediately call a POISON CENTER/doctor
P302+P352 IF ON SKIN: Wash with plenty of water/soap
P362+P364 Take off contaminated clothing and wash it before reuse
P321 Specific treatment (see supplemental first aid instructions on this label)
P332+P313 If skin irritation occurs: Get medical advice and attention
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor
P403+P233 Store in a well-ventilated place. Keep container tightly closed
P405 Store locked up
P501 Dispose of contents and container in accordance with local, regional, national, and international regulations

Hazards not otherwise classified:

None

SECTION 3: Composition/information on ingredients

Identification	Name	Weight %
CAS number: 497-19-8	Sodium carbonate	15-35
CAS number: 9014-01-1	Subtilisin	15-35
CAS number: 77-92-9	Citric acid	15-35
CAS number: 532-32-1	Sodium benzoate	2-12
CAS number: 25322-68-3	Polyethylene glycol	2-12
CAS number: 144-55-8	Sodium hydrogencarbonate	<0.1

Additional Information: None

SECTION 4: First-aid measures

Description of first-aid measures

General notes:

Show this Safety Data Sheet to the doctor in attendance.

After inhalation:

If inhaled, remove person to fresh air and place in a position comfortable for breathing. Keep person at rest. If breathing is difficult, administer oxygen. If breathing has stopped, provide artificial respiration. If exposed, seek medical advice/attention.

After skin contact:

Not determined or not available.

After eye contact:

Immediately rinse eyes with plenty of gently flowing lukewarm water for 15 minutes. Remove contact lenses if present and easy to do so. Protect unexposed eye. Seek immediate medical attention, preferably from an ophthalmologist.

After ingestion:

If swallowed, DO NOT induce vomiting unless told to do so by a physician or poison control center. Rinse mouth with water. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs, place on the left side with head down to prevent aspiration of liquid into the lungs. If symptoms develop or persist, seek medical advice/attention.

Most important symptoms and effects, both acute and delayed

Acute symptoms and effects:

Skin contact may result in redness, pain, burning and inflammation.

Eye contact may result in irritation, redness, pain, inflammation, itching, burning, tearing, corneal damage and loss of vision.

Inhalation exposure may cause allergy, asthma symptoms or breathing difficulties. Symptoms may include cough, chronic phlegm, shortness of breath, wheezing and chest tightness. Symptoms may be delayed.

Delayed symptoms and effects:

Effects are dependent on exposure (dose, concentration, contact time).

Immediate medical attention and special treatment

Specific treatment:

In case of eye contact, seek prompt medical attention while rinsing is continued.

If respiratory symptoms persist, seek medical attention.

Notes for the doctor:

Treat symptomatically.

SECTION 5: Fire-fighting measures

Extinguishing media

Suitable extinguishing media:

Use extinguising media appropriate for fire and surrounding environment.

Unsuitable extinguishing media:

None known.

Specific hazards during fire-fighting:

Thermal decomposition may produce irritating and toxic fumes including carbon oxides and sodium oxides.

Special protective equipment for firefighters:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full-face piece operated in positive pressure mode.

Special precautions:

Avoid contact with skin, eyes, hair and clothing. Do not breathe fumes/gas/mists/aerosols/vapors/dusts. Move containers from fire area if safe to do so. Use water spray/fog for cooling fire exposed containers. Avoid unnecessary run-off of extinguishing media which may cause pollution.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Evacuate unnecessary personnel. Ventilate area. Extinguish any sources of ignition. Wear recommended personal protective equipment (see Section 8). Avoid contact with skin, eyes and clothing. Avoid breathing mist, vapor, dust, fume and spray. Do not walk through spilled material. Wash thoroughly after handling.

Environmental precautions:

Prevent further leakage or spillage if safe to do so. Prevent from reaching drains, sewers and waterways. Discharge into the environment must be avoided.

Methods and material for containment and cleaning up:

Do not touch damaged containers or spilled material unless wearing appropriate personal protective clothing. Stop leak if you can do it without risk. Contain and collect spillage and place in suitable container for future disposal. Dispose of in accordance with all applicable regulations (see Section 13).

Reference to other sections:

For personal protective equipment see Section 8. For disposal see Section 13.

SECTION 7: Handling and storage

Precautions for safe handling:

Use appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Avoid dust generation. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Do not get in eyes. Avoid contact with skin and clothing. Wash affected areas thoroughly after handling. Keep away from incompatible materials (See Section 10). Keep containers tightly closed when not in use.

Conditions for safe storage, including any incompatibilities:

Store in cool, dry, well-ventilated location out of direct sunlight. Keep away from food and beverages. Protect from freezing and physical damage. Store away from heat, open flames and other sources of ignition. Keep container tightly sealed. Store away from incompatible materials (See Section 10).

SECTION 8: Exposure controls/personal protection

Only those substances with limit values have been included below.

Occupational Exposure limit values:

Country (Legal Basis)	Substance	Identifier	Permissible concentration
Quebec	Subtilisin	9014-01-1	Ceiling Limit: 6E-05 mg/m³ (Proteolytic enzymes as 100% pure crystalline silica)
Ontario	Subtilisin	9014-01-1	Ceiling Limit: 6E-05 mg/m³ (as 100% crystalline active pure enzyme)
Saskatchewan	Subtilisin	9014-01-1	Ceiling Limit: 6E-05 mg/m³ (as crystalline active enzyme)
Alberta	Subtilisin	9014-01-1	Ceiling Limit: 6E-05 mg/m³ (as 100% pure crystalline enzyme)

Country (Legal Basis)	Substance	Identifier	Permissible concentration
New Brunswick	Subtilisin	9014-01-1	Ceiling Limit: 0.0006 mg/m³ (as 100% crystalline active pure enzyme)
British Columbia	Subtilisin	9014-01-1	Ceiling Limit: 6E-05 mg/m³ (as 100% pure crystalline enzyme)
Manitoba	Subtilisin	9014-01-1	Ceiling Limit: 6E-05 mg/m³ (as 100% crystalline active pure enzyme)
	Sodium benzoate	532-32-1	8-Hour TWA: 2.5 mg/m³ (Benzoate inhalable particulate matter)
Nova Scotia	Sodium benzoate	532-32-1	TWA: 2.5 mg/m³ (Benzoate inhalable particulate matter)
Newfoundland and Labrador	Sodium benzoate	532-32-1	TWA: 2.5 mg/m³ (Benzoate inhalable particulate matter)
Prince Edward Island	Sodium benzoate	532-32-1	TWA: 2.5 mg/m³ (Benzoate inhalable particulate matter)

Biological limit values:

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

Information on monitoring procedures:

Not determined or not applicable.

Appropriate engineering controls:

Emergency eye wash stations and safety showers should be available in the immediate vicinity of use or handling. Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the applicable workplace exposure limits, while observing recognized national standards (or equivalent).

Personal protection equipment

Eye and face protection:

Use safety glasses with side shields or goggles. Consider the use of a face shield for splash protection. Use eye protection equipment that has been tested and approved by recognized national standards (or equivalent).

Skin and body protection:

Chemical resistant, impervious gloves approved by the appropriate standards. Gloves must be inspected prior to use. Avoid skin contact with used gloves. Appropriate techniques should be used to remove used gloves and contaminated clothing. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Ensure that all personal protective equipment is approved by recognized national standards (or equivalent).

Respiratory protection:

If engineering controls do not maintain airborne concentrations below the applicable workplace exposure limits, or to an acceptable level (if exposure limits have not been established), a respirator approved by recognized national standards (or equivalent) must be worn.

General hygienic measures:

When handling chemical products, do not eat, drink or smoke. Wash hands after handling, before breaks, and at the end of the workday. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Perform routine housekeeping.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance (physical state, color):	White and brown speckled tablets
Odor:	Mint
Odor threshold:	Not determined or not available.
pH-value:	7.0-8.0
Melting/Freezing point:	Not determined or not available.
Boiling point/range:	Not determined or not available.
Flash point:	None
Evaporation rate:	Not determined or not available.
Flammability (solid, gaseous):	Not determined or not available.
Explosion limit upper:	Not determined or not available.
Explosion limit lower:	Not determined or not available.
Vapor pressure:	Not determined or not available.
Vapor density:	Not determined or not available.
Density:	1.7074 g/cm³ (14.2483 lbs/gal)
Relative density:	Not determined or not available.
Solubilities:	Fully miscible in water
Partition coefficient (n-octanol/water):	Not determined or not available.
Auto/Self-ignition temperature:	Product is not self-igniting
Decomposition temperature:	Not determined or not available.
Dynamic viscosity:	Not determined or not available.
Kinematic viscosity:	Not determined or not available.
Explosive properties	Product does not present an explosion hazard
Oxidizing properties	Not determined or not available.

Other information

VOC Content	0%

SECTION 10: Stability and reactivity

Reactivity:
Not reactive under recommended handling and storage conditions.

Chemical stability:
Stable under recommended handling and storage conditions.

Possibility of hazardous reactions:
Hazardous reactions are not anticipated under recommended conditions of handling and storage.

Conditions to avoid:
Extreme heat, open flames, hot surfaces, sparks, ignition sources and incompatible materials.

Incompatible materials:
No further relevant information available.

Hazardous decomposition products:
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

Acute toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data:

Name	Route	Result
Subtilisin	oral	LD50 Rat: 1728 mg/kg
Citric acid	oral	LD50 Mouse: 5400 mg/kg
	dermal	LD50 Rat: > 2000 mg/kg
Sodium benzoate	oral	LD50 Rat: 3450 mg/kg
	inhalation	LC50 Rat: 12.2 mg/L (4 hr [Dust])
	dermal	LD50 Rabbit: >2000 mg/kg
Polyethylene glycol	dermal	LD50 Rat: >2000 mg/kg
	oral	LD50 Rat: >2000 mg/kg
Sodium carbonate	oral	LD50 Rat: 2800 mg/kg
	dermal	LD50 Rabbit: > 2000 mg/kg
Sodium hydrogencarbonate	oral	LD50 Rat: > 4000 mg/kg

Skin corrosion/irritation

Assessment:

Causes skin irritation.

Product data:

No data available.

Substance data:

Name	Result
Subtilisin	Causes skin irritation.

Serious eye damage/irritation

Assessment:

Causes serious eye damage.

Product data:

No data available.

Substance data:

Name	Result
Sodium carbonate	Causes serious eye irritation.
Subtilisin	Causes serious eye damage.
Citric acid	Causes serious eye irritation.
Sodium benzoate	Causes serious eye irritation.

Respiratory or skin sensitization

Assessment:

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

Product data:

No data available.

Substance data:

Name	Result
Subtilisin	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Carcinogenicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

International Agency for Research on Cancer (IARC): None of the ingredients are listed.

National Toxicology Program (NTP): None of the ingredients are listed.

Germ cell mutagenicity

Assessment: Based on available data, the classification criteria are not met.

Product data:

No data available.

Substance data: No data available.

Reproductive toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data:

No data available.

Substance data: No data available.

Specific target organ toxicity (single exposure)

Assessment:

May cause respiratory irritation.

Product data:

No data available.

Substance data:

Name	Result
Subtilisin	May cause respiratory irritation.
Citric acid	May cause respiratory irritation.

Specific target organ toxicity (repeated exposure)

Assessment: Based on available data, the classification criteria are not met.

Product data:

No data available.

Substance data: No data available.

Aspiration toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data:

No data available.

Substance data: No data available.

Information on likely routes of exposure:

Eye contact, skin contact, inhalation, ingestion.

Symptoms related to the physical, chemical and toxicological characteristics:

See section 4 of this SDS.

Other information:

No data available.

SECTION 12: Ecological information

Acute (short-term) toxicity

Assessment: Based on available data, the classification criteria are not met.
Product data: No data available.
Substance data:

Name	Result
Subtilisin	Aquatic Invertebrates EC50 Dapnia magna: 0.327 mg/L (48 hr [mobility])
Citric acid	Fish LC50 Pimephales promelas: >100 mg/L (96 hr)
	Aquatic Invertebrates EC50 Daphnia magna: 85 mg/L (48 hr [mobility, OECD SIDS])
Sodium benzoate	Fish LC50 Pimephales promelas: 484 mg/L (96 hr)
	Aquatic Plants EC50 Raphidocelis subcapitata: >30.5 mg/L (72 hr [growth rate])
	Aquatic Invertebrates EC50 Daphnia magna: >100 mg/L (96 hr [mortality])
Polyethylene glycol	Fish LC50 Poecilia reticulata: > 100 mg/L (96 hr)
	Aquatic Invertebrates EC50 Daphnia magna: > 100 mg/L (48 hr [mobility])
	Aquatic Plants EC50 P. subcapitata: >100 mg/L (72 hr [growth rate])
Sodium carbonate	Fish LC50 Lepomis macrochirus: 300 mg/L (96 hr)
	Aquatic Plants EC50 Selenastrum capricornotum: > 800 mg/L (72 hr [growth rate])
	Aquatic Invertebrates EC50 Ceriodaphnia sp: 200 mg/L (48 hr [mobility])
Sodium hydrogencarbonate	Fish LC50 Lepomis macrochirus: 7100 mg/L (96 hr)
	Aquatic Invertebrates EC50 Daphnia magna: 4100 mg/L (48 hr [mobility])

Chronic (long-term) toxicity

Assessment: Based on available data, the classification criteria are not met.
Product data: No data available.
Substance data:

Name	Result
Subtilisin	Fish EC50 Danio rerio: 0.012 mg/L (33 d [mortality])
	Aquatic Invertebrates EC50 Daphnia magna: >1.14 mg/L (21 d [reproduction])
Sodium benzoate	Aquatic Invertebrates NOEC Daphnia magna: 5.81 mg/L (21 d [reproduction])
Polyethylene glycol	Fish NOEC Poecilia reticulata: 13,671 mg/L (28 d (read-across substance))

Persistence and degradability

Product data: No data available.
Substance data:

Name	Result
Subtilisin	The substance is readily biodegradable. 102% degradation in water, measured by CO2 evolution, after 29 days.
Polyethylene glycol	The substance is readily biodegradable. 74.85% degradation in water, measured by O2 consumption, after 28 days.
Sodium carbonate	The substance is inorganic and by virtue of that fact cannot be biodegradable.

Name	Result
Sodium benzoate	The substance is readily biodegradable. 94% degardation in water, measured by CO2 evolution, after 28 days.
Citric acid	The substance is readily biodegradable. 97% degradation in water, measured by CO2 evolution, after 28 days.

Bioaccumulative potential

Product data: No data available.

Substance data:

Name	Result
Sodium carbonate	The substance dissociates fully in water; does not bioaccumulate.
Subtilisin	The bioaccumulation is not expected due to ready biodegradability, high water solubility and low logPow (<-1.3).
Polyethylene glycol	The substance is not expected to bioaccumulate. Calculated BCF: 3.162 L/Kg ww
Sodium benzoate	The substance is not expected to bioaccumulate (log Pow= 1.88, Read-across substance data).
Citric acid	The substance is not expected to bioaccumulate (log Pow= -1.55 and BCF= 3.2 L/kg- calculated value).

Mobility in soil

Product data: No data available.

Substance data:

Name	Result
Subtilisin	The substance has a low potential for adsorption to soil and sediment based on a low octanol water partition coefficient.
Polyethylene glycol	The substance is mobile in soil with a low potential for adsorption to soil and sediment. (at 25 °C log Koc: 1.857 dimensionless).
Sodium benzoate	The substance is highly mobile, therefore, adsorption to soil is not expected (Koc= 7.033 L/kg, QSAR substance data).
Citric acid	The substance is readily biodegradable and has low octanol-water partition co-efficient. Hence, it is highly mobile and the study need not be conducted.

Results of PBT and vPvB assessment

Product data:

PBT assessment: This product does not contain any substances that are assessed to be a PBT.

vPvB assessment: This product does not contain any substances that are assessed to be a vPvB.

Substance data:

PBT assessment:

Sodium carbonate	The PBT assessment does not apply to inorganic substances.
Subtilisin	The substance is not PBT.
Citric acid	The substance is not PBT
Sodium benzoate	The substance is not PBT.
Polyethylene glycol	The substance is not PBT.
Sodium hydrogencarbonate	The PBT assessment does not apply to inorganic substances.

vPvB assessment:

Sodium carbonate	The vPvB assessment does not apply to inorganic substances.

Subtilisin	The substance is not vPvB.
Citric acid	The substance is not vPvB
Sodium benzoate	The substance is not vPvB.
Polyethylene glycol	The substance is not vPvB.
Sodium hydrogencarbonate	The vPvB assessment does not apply to inorganic substances.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Disposal methods:

It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory agencies. Dispose of in accordance with all applicable local, regional and national regulations.

Contaminated packages:

Not determined or not applicable.

SECTION 14: Transport information

Canadian Transportation of Dangerous Goods (TDG)

UN number	UN 3077
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (Subtilisin)
UN transport hazard class(es)	9 
Packing group	III
Environmental hazards	Marine Pollutant (Subtilisin)
Special precautions for user	None
Excepted quantities	E1
Limited quantity	5 kg

International Maritime Dangerous Goods (IMDG)

UN number	UN 3077
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (Subtilisin)
UN transport hazard class(es)	9 
Packing group	III
Environmental hazards	Marine Pollutant (Subtilisin)
Special precautions for user	None
Stowage category	A
Excepted quantities	E1

Limited quantity	5 kg

International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

UN number	UN 3077
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., Subtilisin
UN transport hazard class(es)	9 
Packing group	III
Environmental hazards	Marine Pollutant (Subtilisin)
Special precautions for user	None
Excepted quantities	E1
Passenger and cargo	30 kg
Cargo aircraft only	400 kg
Limited quantity	5 kg

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	
Bulk Name	None
Ship type	None
Pollution category	None

SECTION 15: Regulatory information

Canada regulations

Domestic substances list (DSL): All ingredients are listed or exempt.

Non-domestic substances list (NDSL): None of the ingredients are listed.

Additional information: Not determined.

SECTION 16: Other information

Abbreviations and Acronyms: None

Disclaimer:

This product has been classified in accordance with the Canadian Hazardous Products Regulations and WHMIS 2015. The information provided in this SDS is correct, to the best of our knowledge, based on information available. The information given is designed only as a guidance for safe handling, use, storage, transportation and disposal and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials, unless specified in the text. The responsibility to provide a safe workplace remains with the user.

Initial preparation date: 01.03.2024

End of Safety Data Sheet