

SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Bromelain (Freeze-Dried)

MANUFACTURER: American Red Cross
Diagnostic Manufacturing Division
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PRODUCT USE: Immunohematology Testing

SECTION 2: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW Although this product has not been tested as a whole, it contains materials that may cause irritation, sensitization, or allergic reactions.

OSHA REGULATORY STATUS This product is considered hazardous under 29 CFR 1910.1200.

HMIS CLASSIFICATION:

Health:	1
Flammability:	0
Physical Hazard:	0
Personal Protection:	B

NFPA RATING:

Health:	1
Flammability:	0
Instability:	0

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	% WT
Bromelain powder	9001-00-7	36.2
L-Cysteine, HCl (monohydrate)	7048-04-6	19.6
Citric Acid (monohydrate)	5949-29-1	1.0
Sodium Phosphate (dibasic), anhydrous	7558-79-4	7.4
Potassium Phosphate	7778-53-2	31.5
Sodium Hydroxide	1310-73-2	4.3

SECTION 4: FIRST AID MEASURES

EYE CONTACT	Immediately flush eyes with plenty of water for 15 minutes. Remove contact lenses.
SKIN CONTACT	Wash off with soap and water.
INHALATION	If symptoms develop, remove affected person from source of exposure into fresh air. Persons developing hypersensitivity (anaphylactic) reaction must receive immediate medical attention.
INGESTION	Rinse mouth with water. Drink copious amounts of water. Seek medical attention immediately.

SECTION 5: FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA

Water spray, carbon dioxide, dry chemical powder, or appropriate foam. Use any fire extinguishing agent that is suitable for the surrounding fire.

UNSUITABLE EXTINGUISHING MEDIA

Do not use an extinguishing agent that is incompatible with surrounding fire.

HAZARDOUS COMBUSTION PRODUCTS

None known.

PROTECTIVE EQUIPMENT AND SPECIAL PRECAUTIONS FOR FIRE-FIGHTERS

May emit toxic fumes under fire conditions. Firefighters should wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Observe precautions from other sections. Keep unnecessary personnel away. Personal Protective Equipment (PPE) identified in Section 8 should be worn to prevent inhalation and exposure to skin and eyes.

ENVIRONMENTAL PRECAUTIONS

None

METHODS FOR CONTAINMENT

Try to avoid dust generation during cleanup.

METHODS FOR CLEANING UP

Carefully scoop up powder spill. Do not sweep, try to avoid dust generation. Can be moistened with water to aid removal. Place spill in appropriate container and dispose in accordance with federal, state, or local requirements. Ventilate area and wash spill site after material removal is complete. Avoid high pressure rinsing. Wash contaminated clothing before reuse.

SECTION 7: HANDLING AND STORAGE

HANDLING

Avoid contact with eyes, skin, and clothing. Do not inhale or ingest.

STORAGE

Below 8° C.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

HAZARDOUS COMPONENTS	NIOSH				ACGIH		OSHA	
	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	TLV ppm	TLV mg/m ³	PEL ppm	PEL mg/m ³
Bromelain	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
L-Cysteine, HCl (monohydrate)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Citric Acid (monohydrate)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sodium Phosphate (dibasic), anhydrous	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Potassium Phosphate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sodium Hydroxide	N/A	2 mg/m ³	N/A	N/A	N/A	2 mg/m ³	N/A	2 mg/m ³

Eye/Face Protection

Face Shield or Safety glasses/goggles. An engineering control such as a table-top shield is recommended if using safety glasses/goggles.

Skin Protection

Disposable latex (or equivalent) gloves and lab coat.

Respiratory Protection

Respiratory protection is not necessary if used in a well-ventilated laboratory area with a source of outside air. An additional risk assessment is recommended if there is deviation from normal procedure, which was documented as having an exposure time of 5-6 seconds, several times per week.

General Hygiene Considerations

When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Launder clothing before reuse if noticeably contaminated. Keep away from food and drink.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Color	White to off-white color
Odor	Slight to mild sulfurous odor
Odor Threshold	Not Available
Form	Powder
pH	Not Available
Melting Point	Not Available
Freezing Point	Not Available
Boiling Point	Not Available
Flash Point	None
Evaporation Rate	Not Available
Flammability Limits in Air, Upper, % by Volume	Not Applicable
Flammability Limits in Air, Lower, % by Volume	Not Applicable
Vapor Pressure	Not Available
Vapor Density (air=1)	Not Available
Density	Not Available
Solubility (water)	Not Available
Partition Coefficient (n-octanol/water)	Not Available
Auto-Ignition Temperature	Not available
Decomposition Temperature	Not Available

SECTION 10: CHEMICAL STABILITY AND REACTIVITY INFORMATION

CHEMICAL STABILITY	Stable.
CONDITIONS TO AVOID	Avoid excessive heat.
INCOMPATIBLE MATERIALS	Strong oxidizing agents.
HAZARDOUS DECOMPOSITION PRODUCTS	None known

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE EFFECTS

Routes of Exposure	Eye and skin contact, inhalation, and ingestion.
Eyes	May cause irritation.
Skin	May cause irritation.
Inhalation	May cause irritation to the respiratory system, respiratory sensitization (enzyme asthma)
Ingestion	May cause irritation.
Target Organs	Eyes, Skin, and Respiratory system.

CARCINOGENICITY This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC and NTP.

EFFECTS OF OVEREXPOSURE Can cause asthma, skin eruptions, anaphylactic shock, and proteolytic action.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY No known significant effects or critical hazards.

SECTION 13: DISPOSAL CONSIDERATIONS

DISPOSAL INSTRUCTIONS

Dispose in accordance with all applicable regulations.

SECTION 14: TRANSPORT INFORMATION

DEPARTMENT OF TRANSPORTATION (DOT) REQUIREMENTS

Not regulated as dangerous goods.

SECTION 15: REGULATORY INFORMATION

CERCLA REPORTABLE QUANTITY

None

SARA 311/312 HAZARDS

None

SARA 302 COMPONENTS

None

SARA 313 COMPONENTS

None

TOXIC SUBSTANCES CONTROL ACT (TSCA)

All components of this product comply with all applicable rules and orders under TSCA.

CALIFORNIA PROP 65

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

SECTION 16: OTHER INFORMATION

None

PREPARED BY: American Red Cross, Safety Department