Revision Date:15-Jan-2020

Section 1-Identification of Substance/ Identification of Company

Product name	Protamine
Product Cat. No.	301347
Chemical Formula:	$C_{170}H_{321}N_{89}O_{36}S$
Supplier:	NovoPro Bioscience Inc. Phone: +86-21-61941042 Fax: 86-216-194-1042

Section 2-Composition / Information on Ingredients

Substance/Preparation:	Substance
Ingredient Name	Protamine
SARA 313	No

Section 3- Hazards Identification

Classification	This substance/mixture is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)
GHS Label elements, including precautionary statements	
Signal Word	Not classified
Hazard statement(s)	None.
Precautionary Statement(s)	None.
Supplementary Hazard Information	May produce an allergic reaction
Hazards not otherwise classified (HNOC)	Not applicable.

For additional information on toxicity, please refer to Section 11.

Section 4- First Aid Measures

Oral Exposure	If swallowed, wash out mouth with water provided person is conscious. Call a physician.
Inhalation Exposure	If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.
Dermal Exposure	In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.
Eye Exposure	In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5- Fire Fighting Measures

Flash Point	Not available
Autoignition Temp	Not available
Flammability	Not available
Extinguishing Media	
Suitable	Carbon dioxide, dry chemical powder, or appropriate foam. Water spray
Fire Fighting	
Protective Equipment	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s)	Emits toxic fumes under fire conditions.

Section 6- Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill	Evacuate area
Procedure(s) of Personal Precaution(s)	Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves
Methods for Cleaning up	Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7-Handling and Storage

Handling	
User Exposure	Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.
Storage	
Suitable	Keep tightly closed
Storage at -20°C	

Section 8-Exposure Controls/Personal Protection Equipment

Engineering Controls	Mechanical exhaust required
Personal Protective equipment	
Respiratory	Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) respirator.
Other	Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.
General Hygiene Measures	Wash thoroughly after handling

Section 9- Physical and Chemical Properties

Appearance	
Physical State	Powder
Property	
Molecular Weight	4219.9
pH	Not available
BP/BP Range	Not available
MP/MP Range	Not available
Freezing Point	Not available
Vapor Pressure	Not available
Vapor Density	Not available
Saturated Vapor Conc.	Not available
SG/Density	Not available
Bulk Density	Not available
Odor Threshold	Not available
Volatile%	Not available
VOC Content	Not available
Water Content	Not available
Solvent Content	Not available
Evaporation Rate	Not available
Viscosity	Not available
Surface Tension	Not available

Partition Coefficient	Not available
Decomposition Temp.	Not available
Flash Point	Not available
Explosion Limits	Not available
Flammability	Not available
Autoignition Temp	Not available
Refractive Index	Not available
Optical Rotation	Not available
Miscellaneous Data	Not available
Solubility	Not available

Section 10- Stability and Reactivity

Stability	
Stable	Stable
Hazardous Decomposition Products	
Hazardous Decomposition Products	Nature of decomposition products not known.
Hazardous Polymerization	
Hazardous Polymerization	Will not occur

Section 11- Toxicological Information

Route of Exposure	
Skin Contact	Avoid contact with skin.
Eye contact	Avoid contact with eyes. May cause slight irritation.
Inhalation	Avoid breathing vapors or mists. May cause irritation of respiratory tract.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Conditions Aggravated by Exposure	The toxicological properties have not been thoroughly investigated.

This product is for experimental uses only. The product has not been completely analyzed and all of the hazards may not be known.

Section 12- Ecological Information

No data available.

Section 13- Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation	Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14- Transport Information

DOT	
Proper Shipping Name	None
Non-Hazardous for Transport	This substance is considered to be non-hazardous for transport.
IATA	
Non-Hazardous for Air Transport	Non-hazardous for air transport

Section 15- Regulatory Information

US Classification and Label Text	
US Statements	Caution: The chemical, physical, and toxicological properties of this product have not been thoroughly investigated. Exercise due care.
United States Regulatory information	
SARA Listed	No
Canada Regulatory information	
WHMIS Classification	This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL	No
NDSL	No

Section 16- Other Information

NovoPro corporation MSDS is believed to be correct but only used as a guide for experienced personnel, NovoPro shall not be held liable for any damage resulting from the handling or from contact with the above product.