

Revision Date:15-Jan-2020

| Section 1-Identification of Substance/ Identification of Company |   |  |
|--|---|--|
| Product name   | B-type natriuretic peptide                                |  |
| Product Cat. No.   | 302176  |  |
| Chemical Formula:  | $C_{151}H_{254}N_{52}O_{44}S_4$                           |  |
| Supplier:  | NovoPro Bioscience Inc.                                   |  |
|  | Phone: +86-21-61941042                                    |  |
|  | Fax: 86-216-194-1042                                      |  |
| Section 2-Composition / Information on Ingredients               |   |  |
| Substance/Preparation:   | Substance   |  |
| Ingredient Name  | B-type natriuretic peptide                                |  |
| 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                                 | Not applicable.   |  |
| (HNOC)   |   |  |
| For additional information on toxicity pla                       | and makes to Constinue 11                                 |  |

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                             |
| Dormai Enposaro                   | 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.   |
|                                   | 1 / 4  |



| Section 6- Accidental Release Measur   |   |
|--|---|
| Procedure to be Followed in Case of  | Evacuate area   |
| Leak or Spill  |   |
| Procedure(s) of Personal Precaution(s)   | Wear respirator, chemical safety goggles, rubber boots,   |
| Mothodo for Cleaning up  | and heavy rubber gloves   |
| Methods for Cleaning up  | Sweep up, place in a bag and hold for waste disposal.<br>Avoid raising dust. Ventilate area and wash spill site after   |
|  | material pickup is complete.  |
|  | material pickup is complete.  |
| Section 7 Handling and Storage   |   |
| Section 7-Handling and Storage   |   |
| Handling<br>User Exposure  | Avoid inhalation. Avoid contact with eyes, skin, and  |
| User Exposure  | clothing. Avoid prolonged or repeated exposure.   |
| Storage  | clothing. Avoid protoinged of repeated exposure.  |
| Suitable   | Keep tightly closed   |
| Storage at -20°C   | Reep tightly closed   |
| Storage at 20 0  |   |
| Section 8-Exposure Controls/Persona  | Protection Equipment  |
| Engineering Controls   | Mechanical exhaust required   |
| Personal Protective equipment  | -roomuniour omitauot roquirou   |
| Respiratory  | Use respirators and components tested and approved  |
| 1.00 p. 1.00 1 j   | 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   |
|  | chemical-resistant gloves, safety goggles, other protective clothing.   |
| General Hygiene Measures   |   |
|  | clothing.<br>Wash thoroughly after handling   |
| Section 9- Physical and Chemical Pro   | clothing.<br>Wash thoroughly after handling   |
| Section 9- Physical and Chemical Pro<br>Appearance   | clothing.<br>Wash thoroughly after handling<br>perties  |
| Section 9- Physical and Chemical Pro<br>Appearance<br>Physical State   | clothing.<br>Wash thoroughly after handling   |
| Section 9- Physical and Chemical Pro<br>Appearance<br>Physical State<br>Property   | clothing.<br>Wash thoroughly after handling<br>perties<br>Powder  |
| Section 9- Physical and Chemical Pro<br>Appearance<br>Physical State<br>Property<br>Molecular Weight   | clothing.<br>Wash thoroughly after handling<br>perties<br>Powder<br>3630.1  |
| Section 9- Physical and Chemical Pro<br>Appearance<br>Physical State<br>Property<br>Molecular Weight<br>pH   | clothing.<br>Wash thoroughly after handling<br>perties<br>Powder<br>3630.1<br>Not available   |
| Section 9- Physical and Chemical Pro<br>Appearance<br>Physical State<br>Property<br>Molecular Weight<br>pH<br>BP/BP Range  | clothing.<br>Wash thoroughly after handling<br>perties<br>Powder<br>3630.1<br>Not available<br>Not available  |
| Section 9- Physical and Chemical Pro<br>Appearance<br>Physical State<br>Property<br>Molecular Weight<br>pH<br>BP/BP Range<br>MP/MP Range   | clothing.<br>Wash thoroughly after handling<br>perties<br>Powder<br>3630.1<br>Not available<br>Not available<br>Not available   |
| Section 9- Physical and Chemical Pro<br>Appearance<br>Physical State<br>Property<br>Molecular Weight<br>pH<br>BP/BP Range<br>MP/MP Range<br>Freezing Point   | clothing.<br>Wash thoroughly after handling<br>perties<br>Powder<br>3630.1<br>Not available<br>Not available<br>Not available<br>Not available<br>Not available   |
| Section 9- Physical and Chemical Pro<br>Appearance<br>Physical State<br>Property<br>Molecular Weight<br>pH<br>BP/BP Range<br>MP/MP Range<br>Freezing Point<br>Vapor Pressure   | clothing.<br>Wash thoroughly after handling<br>perties<br>Powder<br>3630.1<br>Not available<br>Not available<br>Not available<br>Not available<br>Not available<br>Not available<br>Not available   |
| Section 9- Physical and Chemical Pro<br>Appearance<br>Physical State<br>Property<br>Molecular Weight<br>pH<br>BP/BP Range<br>MP/MP Range<br>Freezing Point<br>Vapor Pressure<br>Vapor Density  | clothing.<br>Wash thoroughly after handling<br>perties<br>Powder<br>3630.1<br>Not available<br>Not available<br>Not available<br>Not available<br>Not available<br>Not available<br>Not available<br>Not available<br>Not available   |
| Section 9- Physical and Chemical Pro<br>Appearance<br>Physical State<br>Property<br>Molecular Weight<br>pH<br>BP/BP Range<br>MP/MP Range<br>Freezing Point<br>Vapor Pressure<br>Vapor Density<br>Saturated Vapor Conc.   | clothing.<br>Wash thoroughly after handling<br>perties<br>Powder<br>3630.1<br>Not available<br>Not available   |
| Section 9- Physical and Chemical Pro<br>Appearance<br>Physical State<br>Property<br>Molecular Weight<br>pH<br>BP/BP Range<br>MP/MP Range<br>Freezing Point<br>Vapor Pressure<br>Vapor Density<br>Saturated Vapor Conc.<br>SG/Density   | clothing.<br>Wash thoroughly after handling<br>perties<br>Powder<br>3630.1<br>Not available<br>Not available  |
| Section 9- Physical and Chemical Pro<br>Appearance<br>Physical State<br>Property<br>Molecular Weight<br>pH<br>BP/BP Range<br>MP/MP Range<br>Freezing Point<br>Vapor Pressure<br>Vapor Density<br>Saturated Vapor Conc.<br>SG/Density<br>Bulk Density   | clothing.<br>Wash thoroughly after handling<br>perties<br>Powder<br>3630.1<br>Not available<br>Not available   |
| Section 9- Physical and Chemical Pro<br>Appearance<br>Physical State<br>Property<br>Molecular Weight<br>pH<br>BP/BP Range<br>MP/MP Range<br>Freezing Point<br>Vapor Pressure<br>Vapor Density<br>Saturated Vapor Conc.<br>SG/Density<br>Bulk Density<br>Odor Threshold   | clothing.<br>Wash thoroughly after handling<br>perties<br>Powder<br>3630.1<br>Not available<br>Not available   |
| Section 9- Physical and Chemical Pro<br>Appearance<br>Physical State<br>Property<br>Molecular Weight<br>pH<br>BP/BP Range<br>MP/MP Range<br>Freezing Point<br>Vapor Pressure<br>Vapor Density<br>Saturated Vapor Conc.<br>SG/Density<br>Bulk Density<br>Odor Threshold<br>Volatile%  | clothing.<br>Wash thoroughly after handling<br>perties<br>Powder<br>3630.1<br>Not available<br>Not available  |
| Section 9- Physical and Chemical Pro<br>Appearance<br>Physical State<br>Property<br>Molecular Weight<br>pH<br>BP/BP Range<br>MP/MP Range<br>Freezing Point<br>Vapor Pressure<br>Vapor Density<br>Saturated Vapor Conc.<br>SG/Density<br>Bulk Density<br>Odor Threshold<br>Volatile%<br>VOC Content   | clothing.<br>Wash thoroughly after handling<br>perties<br>Powder<br>3630.1<br>Not available<br>Not available  |
| Section 9- Physical and Chemical Pro<br>Appearance<br>Physical State<br>Property<br>Molecular Weight<br>pH<br>BP/BP Range<br>MP/MP Range<br>Freezing Point<br>Vapor Pressure<br>Vapor Density<br>Saturated Vapor Conc.<br>SG/Density<br>Bulk Density<br>Odor Threshold<br>Volatile%<br>VOC Content<br>Water Content  | clothing.<br>Wash thoroughly after handling<br>perties<br>Powder<br>3630.1<br>Not available<br>Not available  |
| Section 9- Physical and Chemical Pro<br>Appearance<br>Physical State<br>Property<br>Molecular Weight<br>pH<br>BP/BP Range<br>MP/MP Range<br>Freezing Point<br>Vapor Pressure<br>Vapor Density<br>Saturated Vapor Conc.<br>SG/Density<br>Bulk Density<br>Odor Threshold<br>Volatile%<br>VOC Content<br>Water Content<br>Solvent Content                     | clothing.<br>Wash thoroughly after handling<br>perties<br>Powder<br>3630.1<br>Not available<br>Not available  |
| Section 9- Physical and Chemical Pro<br>Appearance<br>Physical State<br>Property<br>Molecular Weight<br>pH<br>BP/BP Range<br>MP/MP Range<br>Freezing Point<br>Vapor Pressure<br>Vapor Density<br>Saturated Vapor Conc.<br>SG/Density<br>Bulk Density<br>Odor Threshold<br>Volatile%<br>VOC Content<br>Water Content<br>Solvent Content<br>Evaporation Rate | clothing.<br>Wash thoroughly after handling<br>perties<br>Powder<br>3630.1<br>Not available<br>Not available |
| Section 9- Physical and Chemical Pro<br>Appearance<br>Physical State<br>Property<br>Molecular Weight<br>pH<br>BP/BP Range<br>MP/MP Range<br>Freezing Point<br>Vapor Pressure<br>Vapor Density<br>Saturated Vapor Conc.<br>SG/Density<br>Bulk Density<br>Odor Threshold<br>Volatile%<br>VOC Content<br>Water Content<br>Solvent Content                     | clothing.<br>Wash thoroughly after handling<br>perties<br>Powder<br>3630.1<br>Not available<br>Not available  |



| Partition Coefficient<br>Decomposition Temp.<br>Flash Point<br>Explosion Limits<br>Flammability<br>Autoignition Temp<br>Refractive Index<br>Optical Rotation<br>Miscellaneous Data<br>Solubility | Not available<br>Not available<br>Not available<br>Not available<br>Not available<br>Not available<br>Not available<br>Not available<br>Not available<br>Not available |
|--|--|
| Section 10- Stability and Reactivity   |  |
| Stability<br>Stable<br>Hazardous Decomposition Products<br>Hazardous Decomposition Products<br>Hazardous Polymerization<br>Hazardous Polymerization  | Stable<br>Nature of decomposition products not known.<br>Will not occur  |
|  |  |
| Section 11- Toxicological Information  |  |
| Route of Exposure<br>Skin Contact<br>Eye contact<br>Inhalation   | Avoid contact with skin.<br>Avoid contact with eyes. May cause slight irritation.<br>Avoid breathing vapors or mists. May cause irritation of<br>respiratory tract.    |
| Ingestion<br>Conditions Aggravated by Exposure   | Ingestion may cause gastrointestinal irritation, nausea,<br>vomiting and diarrhea.<br>The toxicological properties have not been thoroughly<br>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<br>Substance or Preparation | Contact a licensed professional waste disposal service to<br>dispose of this material. Dissolve or mix the material with a<br>combustible solvent and burn in a chemical incinerator<br>equipped with an afterburner and scrubber. Observe all<br>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<br>of this product have not been thoroughly investigated.<br>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.