

# Material Safety Data Sheet

Date Created 03/22/2012  
Date Updated  
Version 1.1

## Section 1- Product Information

Product Name: Bone Morphogenetic Protein-4 (BMP-4), Human  
Product Cat. No.: Z02750

## Section 2- Composition / Information on Ingredients

Substance / Preparation: Substance  
Ingredient Name: Bone Morphogenetic Protein-4 (BMP-4), Human  
CAS No. No  
SARA 313 No

## Section 3- Hazards Identification

HMIS Rating  
Health 0  
Flammability 0  
Reactivity 0  
NFPA Rating  
Health 0  
Flammability 0  
Reactivity 0

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  
Fire Fighting Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.  
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 This lyophilized preparation is stable at 2-8 °C, but should be kept at -20 °C for long term storage, preferably desiccated.

---

**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	Lyophilized powder
Property	
Molecular Weight	~13 kDa
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	Soluble in water

---

**Section 10- Stability and Reactivity**

Stability	
Stable	Stable
Hazardous Decomposition Products	
Hazardous Decomposition Products	Nature of decomposition products not known

---

**Section 11- Toxicological Information**

Route of Exposure	
Skin Contact	May cause skin irritation
Skin Absorption	May be harmful if absorbed through the skin
Inhalation	Material may be irritating to mucous membranes and upper respiratory tract, May be harmful if inhaled.
Ingestion	May be harmful if swallowed
Conditions Aggravated by Exposure	The toxicological properties have not been thoroughly investigated.

---

**Section 12- Ecological Information**

---

Eco-toxicity  
Toxicity of The Products of  
Biodegradation

The product itself and its products of degradation are not toxic.

**Section 13- Disposal Considerations**

---

Appropriate Method of Disposal of  
Substance or Preparation

Waste must be disposed of in accordance with federal, state and local environmental control 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**

---

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**

---

Disclaimer                                        For *in vitro* research use only.  
GenScript corporation MSDS is believed to be correct but only used as a guide for experienced personnel, GenScript shall not be held liable for any damage resulting from the handling or from contact with the above product.