BOSTER BIOLOGICAL TECHNOLOGY
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Material Safety Data Sheet

1.0 PRODUCT AND COMPANY INFORMATION

1.1 Product name: RANKL (TNFSF11) (NM_003701) Human Recombinant Protein

1.2 Catalog # / Part number: PROTO14788

1.3 Manufacturer / Supplier:

Boster Biological Technology Co., Ltd.

3942 B Valley Ave, Pleasanton, CA, 94566, USA. Toll

Free: 888-466-3604 Fax: 925-215-2184

1.4 Application of the substance or mixture: Not for human use. For research use only.

1.5 Other product information: This product has not been registered with CHEMTREC (USA)

2.0 HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture: Not a hazardous substance or mixture.

2.2 GHS classification: Does not meet the classification criteria of the EC Directives 67/548/EEC, 1999/45/EC or 1272/2008

2.3 GHS labeling: Does not need to be labeled in accordance with EC directives or respective national laws.

2.4 Special hazards: None

3.0 COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Ingredients: This product does not contain any hazardous substances at concentrations of 1% or greater. This product is not known to contain carcinogens at a concentration of 0.1% or greater. No MSDS is required.

4.0 FIRST AID MEASURES

4.1 Description of first aid measures:

Eye contact: May cause eye irritation. Flush eyes with plenty of water for at least 15 minutes. Then get

immediate medical attention.

Skin contact: May cause skin irritation. Immediately flush with plenty of water.

Inhalation: No recognized inhalation hazard. If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

Ingestion: No recognized ingestion hazard. If swallowed, drink plenty of water. Get immediate medical attention.

5.0 FIRE FIGHTING MEASURES

5.1 Classification of substance or mixture: The product is non-flammable.

5.2 Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.3 Protective equipment: Wear self-contained breathing apparatus for firefighting if necessary.

6.0 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions: Use eye protection, gloves, and apron. Implement appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.

6.2 Methods for clean up: Sweep up, place in bag and hold for disposal. Ventilate area and wash site after material is picked up.

7.0 HANDLING AND STORAGE

7.1 Handling: Avoid inhalation. Avoid contact with eyes, skin, and clothing.

7.2 Storage: Keep tightly closed. Store at -20^{o}C until use.

7.3 Additional information: See product data sheet for more information on handling and storage.

8.0 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters: Contains no substances with occupational exposure limit values.

8.2 Engineering controls: Ensure adequate ventilation. Use appropriate personal protective work clothing.

8.3 Personal precautions:

Eye: Wear appropriate eye protection.

Skin: Wear clothing and gloves that cannot be penetrated by chemicals or oil.

Inhalation: Respiratory equipment is not required.

SAFETY DATASHEET

9.0 CHEMICAL AND PHYSICAL PROPERTIES

9.1 Description of chemical and physical properties:

Appearance: Solid; white powder or thin/invisible film

Odor: None

pH: Not available

Vapor pressure: Not available

Vapor density: Not available

Boiling point: Not available

Melting/freezing point: Not available

Flash point UEL/LEL: None established

Evaporation rate: Undetermined

Flammability: Non-flammable material

Solubility: Not available

Specific gravity (water = 1): Not available

Volatile %: Not available

Water content: Not available

Decomposition Temperature: Not available

Autoignition Temperature: None established

VOC content: Not available

Viscosity: Not available

10.0 STABILITY AND REACTIVITY

10.1 Stability: Stable under recommended storage conditions.

10.2 Conditions to avoid: Heat and moisture

10.3 Materials to avoid: Strong oxidizing agents

10.4 Hazardous decomposition: None determined

10.5 Hazardous polymerization: Does not spontaneously polymerize

11.0 TOXICOLOGICAL INFORMATION

11.1 Potential health effects:

Eye contact: May cause eye irritation.

Skin contact: May cause skin irritation.

SAFETY DATASHEET

Inhalation: May be harmful if inhaled. May be irritating to mucous membranes.

Ingestion: May be harmful if swallowed.

Carcinogenicity: None

Reproductive toxicity: None

Mutagenicity: None

Sensitization: None

12.0 ECOLOGICAL INFORMATION

12.1 Ecotoxicity: Undetermined

12.2 Biodegradability: Undetermined

12.3 Mobility: Undetermined

12.4 Bioaccumulation: Undetermined

13.0 DISPOSAL INFORMATION

13.1 Disposal method: Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

14.0 TRANSPORTATION INFORMATION

14.1 Transport information:

DOT Hazard class: Non-hazardous for transport.

IATA Hazard class: Non-hazardous for transport.

IMDG Hazard class: Non-hazardous for transport.

15.0 REGULATORY INFORMATION

15.1 US Federal and State Regulations:

CERCLA Sections 102a/103 Hazardous Substances (40 CFR Part 302.4): This product is not reportable under 40 CFR Part 302.4.

SARA Title III Section 302 Extremely Hazardous Substances (40 CFR Part 355): This product is not regulated under Section 302 of SARA and 40 CFR Part 355.

SARA Title III Sections 311/312 Hazardous Categorization (40 CFR Part 370): This product is not defined as hazardous by OSHA under 29 CFR Part 1910.1200(d).

SARA Title III Section 313 (40 CFR Part 372): This product does not contain any of the substances on the Toxic Chemicals List in 40 CFR Part 372.

SAFETY DATASHEET

US Inventory/TSCA (Toxic Substances Control Act): Not listed on inventory

OSHA Hazard Communication Standard: Non-hazardous

California Proposition 65: Not listed on California’s listing of known or potential carcinogens.

15.2 Additional Regulations:

WHMIS Controlled Product 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.

EC Inventory (EINECS/ELINCS): Not

determined **Japan Inventory (MITI):** Not

determined **Australia Inventory (AICS):** Not

determined **Korea Inventory (ECL):** Not

determined

Canada Inventory (DSL): Not determined

Philippine Inventory (PICCS): Not determined

16.0 OTHER INFORMATION

16.1 Disclaimer: Not for human use.

16.2 Note to reader: This SDS and the information it contains is offered in good faith as accurate and complete. We have reviewed any information contained in this SDS which we received from sources outside our company. We believe that information to be correct, but cannot guarantee its accuracy or completeness. Health and safety precautions in this safety data sheet may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. No statement made in this safety data sheet shall be construed as a permission or recommendation for the use of any product in a manner that might infringe existing patents. No warranty is made, either expressed or implied.

End of Material Safety Data Sheet