

1. Product Information:

- Product Name: Recombinant Human 4-1BB Ligand/TNFSF9
- Catalog Number: 103-14
- Application of the substance / the preparation: For Research Use Only
- Manufacturer / Supplier:
ChemWhat Limited
6 Prospect Way, Royal Oak Industrial Estate, Daventry,
Northamptonshire, NN118PL, United Kingdom
- Emergency Phone: +44 (0)20 360 89 360-2
- Fax: +44 (0)20 360 89 360-2-9
- Email: contact@chemwhat.com

2. Information on Ingredients:

Ingredient	CAS No.	EC No.
Recombinant Protein	None	None

- This product does not contain dangerous chemicals at concentrations of 1% or greater.
- This product does not contain carcinogens at concentrations of 0.1% or greater.

3. Hazards Identification:

- Hazards Identification: This substance is considered to be non-hazardous for transport.
- Emergency Overview: May cause irritation to eyes, respiratory system and skin. Emit toxic fumes under fire conditions.

4. First Aid Measures:

- After inhalation: Immediately remove to fresh air. Consult doctor in case of complaints.
- After skin contact: Immediately flush with soap and plenty of water. The product does not irritate the skin, generally.
- After eye contact: Flush eyes with plenty of water for at least 15 minutes. Then consult a doctor.
- After swallowing: Never give anything by mouth to an unconscious person. Rinse mouth with water. Get medical attention.

5. Fire Fighting Measures:

- Available extinguishing agents: The product is not flammable. Water spray, sandy soil, alcohol-resistant foam, dry chemical or carbon dioxide can be used.
- Protective equipment for firefighters: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
- Specific hazards: Emit toxic fumes under fire conditions.

6. Accidental Release Measures:

- Personal Precautions: Use eye protection, gloves, and apron. Implement appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.
- Clean up: Sweep up with spade and transfer to a dry, clean, lidded container for disposal. Avoid

raising dust. Ventilate area and wash spill site after material pickup is complete. Do not let product enter drains.

7. Handling and Storage:

- Handling: Wear appropriate protective clothing and chemical safety gloves. Avoid breathing dust. Avoid contact with eyes, skin. Mechanical exhaust required. Keep away from ignition sources, heat and flame.
- Storage: Store in a cool, well-ventilated area. Keep away from ignition sources, heat and flame. Store in a tightly closed container. Store according to product specifications.
- Incompatibilities: Strong oxidizing agents and foods. No smoking at working or storage site.

8. Exposure Controls and Personal Protection:

- Engineering Controls: Use ventilation equipment if available. Safety shower and eye bath.
- Personal Protective Equipment:
 - Respiratory: Government approved respirator.
 - Eye: Wear chemical safety goggles.
 - Clothing: Wear appropriate protective clothing.
 - Hand: Wear compatible chemical-resistant gloves.
- Other Protect: No smoking, drinking and eating at working site. Wash thoroughly after handling.

9. Physical and Chemical Properties:

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| - Appearance: Lyophilized white powder or clear liquid. | N/A |
| - Odor: Weak or none. | - Vapor pressure/density: N/A |
| - Odor Threshold: N/A | - Relative Density: N/A |
| - pH: N/A | - Solubility in/Miscibility with Water: N/A |
| - Melting point/freezing point: N/A | - Partition coefficient (n-octanol/water): N/A |
| - Boiling point/Boiling range: N/A | - Auto ignition temperature: N/A |
| - Evaporation rate: Undetermined. | - Decomposition temperature: N/A |
| - Flammability: Not available. | - Viscosity: N/A |
| - Upper/lower flammability or explosive limits: | (N/A = not available) |

10. Stability and Reactivity:

- Reactivity: Stable under recommended transport and storage conditions.
- Chemical Stability: Not flammable. Not explosive.
- Possible hazardous reactions: Hazardous reactions will not occur under normal transport or storage conditions.
- Incompatible materials to be avoided: Heat and moisture.
- Incompatible materials: Strong acids/alkalis, strong oxidizing/reducing agents.
- Hazardous Polymerization: Will not occur.
- Hazardous decomposition products: May emit toxic fumes if burnt. CO, CO₂, Nitrogen oxides, Sodium oxides and Phosphorus oxides.

11. Toxicological Information:

- Eye contact: May cause eye irritation.
- Skin contact: May cause skin irritation.

- Inhalation: May be harmful if inhaled.
- Ingestion: May be harmful if swallowed.
- The toxicological properties have not been thoroughly investigated.

12. Ecological Information:

- Ecotoxicity: No information available.
- Mobility: No information available.
- Biodegradability: Inherently biodegradable.
- Bioaccumulation: Does not bioaccumulate.

13. Disposal Information:

- Spent or discarded material is not belong to hazardous waste.
- 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.

14. Transport Information:

- DOT: This substance is considered to be non-hazardous for transport.
- ADR/RID: This substance is considered to be non-hazardous for transport.
- IATA: Non-Hazardous for Air Transport.
- IMDG: Non-Hazardous for Sea Transport.
- UN Number: None

15. Regulations:

- EU Classification and Labeling Information: This chemical substance is not classified in the Annex I of Directive 67/548/EEC.

16. Other Information:

- Disclaimer: For R&D use only.
- Notice: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. We make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their-own investigations to determine the suitability of the information for their particular purposes. In no way shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising from using the above information.