MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT(S) AND COMPANY IDENTIFICATION

Manufacturer Name: Biaffin GmbH & Co KG
Address: Heinrich-Plett-Strasse 40
D-34132 Kassel
Germany
For Information Call: +49 (0) 561 804 4661

Quick Identifier (In-plant Common Name): Recombinant thymidine kinase TK1
Chemical Name: recombinant thymidine kinase
Common Name/Trade Name: thymidine kinase enzyme TK1
CAS Number: N/A

SECTION 2 - COMPOSITION AND INFORMATION ON INGREDIENTS

Ingredient Name: Recombinant thymidine kinase
Chemical Family: Protein
Formula: Complex

SECTION 3 - HAZARDS IDENTIFICATION

Threshold Limit Value: None known or reported

SECTION 4 - FIRST AID MEASURES

Emergency and First Aid Procedures (Enzymes/Proteins may cause allergic reactions in certain individuals)
1. Inhalation: Remove person from source then obtain necessary medical attention
2. Eyes: Check for contact lenses and remove if present. Flush thoroughly with water while opening eyelids. If symptoms such as redness and irritation persist, obtain medical attention
3. Skin: Remove contaminated clothing. Wash material from skin with soap and water and rinse thoroughly with clean water. Obtain medical attention as needed if irritation develops. Clean contaminated clothing before reuse.
4. Ingestion: May be harmful if swallowed. Obtain medical attention as needed.

SECTION 5 - FIRE AND EXPLOSION HAZARDS

Special Fire Fighting Procedures: None
Auto-Ignition Temperature: N/A
Flash Point: N/A
Flammable Limits in Air (% by Volume): N/A
Extinguisher Media: N/A
Unusual Fire and Explosion Hazards: None
Stability: Degradation products are not hazardous

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Precautions to be Taken in Handling and Storage: Wear appropriate protective equipment
Other Precautions: None
Steps to be Taken in Case Material in Release or Spilled: Wear approved respirator and protective gloves. Vacuum or collect powdered spill into appropriate waste container for disposal. Avoid physical contact and dust during removal. Use normal clean-up procedures for liquid spillage and wash thoroughly with water. Wash contaminated clothing before reuse

SECTION 7 - HANDLING & STORAGE

Storage: Refer to specific product label for storage conditions. Lyophilized proteins will absorb moisture under high humidity and/or moisture conditions. Keep containers tightly closed when not in use and store in a cool, dry area according to label conditions. Long-term storage temperatures should not exceed 6 degrees C for maximum stability.
Handling: Minimize dust and/or aerosol generation during use. Dry powders can build static electricity cause by excessive handling. Wear appropriate protective equipment as per Section 8.

SECTION 8 - EXPOSURE CONTROLS & PERSONAL PROTECTION

Respiratory Protection (Specify Type): A protective dust mask is advisable to avoid breathing particulates when apportioned form of the product is being handled. Wear an appropriate respirator
Mechanical (General): Vent Fan
Ventilation: Advisable
Local Exhaust: As required
Special: None
Protective Gloves: Wear gloves to prevent skin contact
Eye Protection: Either safety glasses or goggles should be worn
Other Protective Clothing or Equipment: Sensitive individuals should wear dust masks/respirators, protective gloves, eye protection, lab coat, apron or other protective clothing to minimize contact.

SECTION 9 - PHYSICAL & CHEMICAL PROPERTIES

Appearance and Odor: Liquid - Clear, typical enzyme odor
Solubility in Water: Liquid - readily miscible in water
Specific Gravity(H2O=1): Varies
Percent Volatile by Volume: N/A
Vapor Density(Air=1): N/A
Flash Point: N/A
Boiling Point: Decomposes
Auto-Ignition Temperature: N/A
Flammable Limits in Air (% by Volume): N/A
Extinguisher Media: N/A
Unusual Fire and Explosion Hazards: None
Stability: Degradation products are not hazardous
SECTION 10 - STABILITY & REACTIVITY
Hazardous Decomposition Products: None known
Hazardous Polymerization: Will not occur
Incompatibility (Materials to Avoid): None known

SECTION 11 - TOXICOLOGICAL INFORMATION
Refer to Section 3 for health effects information. The toxicological properties of this material have not been fully investigated. Always follow Good Laboratory and Industrial Hygiene Practices and wear proper personal protective equipment when handling chemicals. May cause irritation and/or allergic reaction(s).

Routes of Exposure: Inhalation, ingestion, skin and eye contact.
LD50: No oral LD50 is available
Carcinogenicity: Unknown
Mutagenic/Teratogenic Effects: Unknown

SECTION 12 - ECOLOGICAL INFORMATION
No data available. No environmental hazard is known.

SECTION 13 - DISPOSAL CONSIDERATIONS
Dispose of waste in accordance with all applicable Federal, State and local regulations. chemical residues are generally classified as special waste and, as such, the transportation, storage, treatment and disposal of this waste material must be conducted in compliance with all applicable Federal, State and local regulations. Rinse empty containers thoroughly before disposal and/or recycling.

SECTION 14 - TRANSPORT INFORMATION
Department of Transportation Requirements: Proper Shipping Name: Not regulated
Hazard Class: N/A
Packaging Group: N/A
Reportable Quantity: N/A
Labels Required: N/A
International Transportation Regulations: Not regulated
UN/NA Code: N/A

SECTION 15 - REGULATORY INFORMATION
US Federal Regulations: Material(s) listed are exempt from the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory when supplied for research and development purposes or used under the supervision of a technically qualified individual as defined by 40 CFR720.3. The health risks have not been fully determined.
State Regulations: Based upon available information, material(s) listed are not known to be regulated by any state or listed on the New Jersey Right to Know Hazardous Substance List.
International Regulations: EC: Harmful; R42/43, May cause sensitization by inhalation and skin contact. S36, Wear suitable protective clothing.

SECTION 16 - OTHER USEFUL INFORMATION
Disclaimer
The information contained in this MSDS relates only to the material(s) designated and does not relate to use(s) in combination with any other material, process(es) and/or chemical reaction(s). The Biaffin GmbH & Co KG provides this information in good faith, from sources believed to be accurate, however, assumes no liability for its accuracy or completeness. All Biaffin products are supplied for manufacturing, research and laboratory use only. Researchers and laboratory personnel intending to use any of these products for medical investigation on humans are solely responsible for such use and for compliance with the pertinent regulations of the United States Food & Drug Administration (US-FDA) and other regulations. We do not assume liability for damages resulting from the handling, use and/or disposal of these products, from their use in violation of patent or other rights or reliance upon this information.

Biaffin GmbH & Co KG
AVZ 2, Heinrich-Plett-Strasse 40
D-34132 Kassel
Germany
Phone: +49 (0) 561 804 4661 | Fax: +49 (0) 561 804 4665
E-mail: info@proteinkinase.de
www.proteinkinase.de