

## MATERIAL SAFETY DATA SHEET (MSDS)

**Date of Preparation or Revision:** May 27, 2009

### IDENTIFICATION OF SUBSTANCE AND COMPANY:

Product Name: Human Tissue Transglutaminase (tTG; BV) (recombinant)  
 Catalog Number: 15200 / 15201 / 15205

Supplier: DIARECT AG  
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### COMPOSITION / INFORMATION ON INGREDIENTS:

Name: Tissue-Type Transglutaminase  
 CAS Registry Number: not available  
 EC-Number: EC 2.3.2.13  
 Molecular Weight: approx. 80 kDa

Hazards identified with this product are those deriving from the title compound (as described in this MSDS) and those associated with the following components (mainly buffer components):

Name	CAS-Number	Percent
Glycerol	56-81-5	20 %
N-[2-Hydroxyethyl]piperazine- N'-[2-ethanesulfonic acid] (HEPES)	7365-45-9	< 0.5 %
Sodium Chloride	7647-14-5	< 2.0 %

Copyright restrictions do not allow us to give MSDS information on these components. Please refer to appropriate MSDS information in your internal safety data collection or from producers of these compounds.

### HAZARDS IDENTIFICATION:

Caution: Avoid contact and inhalation

### FIRST AID MEASURES:

If swallowed, wash out mouth with water provided person is conscious. Consult a physician.  
 In case of skin contact, wash immediately with soap and copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes and wash before wearing. Consult a physician.

In cases of eye contact, flush immediately with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating eyelids with fingers. Consult a physician. In case of inhalation, remove to fresh air and monitor breathing. If breathing becomes difficult, consult a physician.

### **FIREFIGHTING MEASURES:**

Extinguishing Media: Use extinguishing media appropriate to surrounding fire conditions (dry chemical powder, carbon dioxide or water spray recommended).

Special Firefighting Procedures: Wear self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes.

### **ACCIDENTAL RELEASE MEASURES:**

Steps to be taken if material is released or spilled: Evacuate area. Wear protective equipment (minimally chemical safety goggles and laboratory gloves). Sweep up and place in a suitable bag/container. Avoid raising dust. Hold for appropriate waste disposal. Ventilate area and wash spill site after material pickup is complete.

### **HANDLING AND STORAGE:**

Store according to conditions recommended for reagent stability

Avoid contact with material. Avoid prolonged or repeated exposure. Refer also to following section.

### **EXPOSURE CONTROLS / PERSONAL PROTECTION:**

Protective Equipment: Wear suitable protective clothing, such as chemical resistant gloves and chemical safety goggles.

Respiratory Protection and Ventilation: Use a NIOSH/MSHA approved respirator. Handle in laboratory with adequate ventilation.

### **PHYSICAL AND CHEMICAL PROPERTIES:**

Appearance: Liquid

### **STABILITY AND REACTIVITY:**

Stability: Stable

Hazardous Combustion or Decomposition Products: Nature of decomposition products not known.

Hazardous polymerization: Will not occur.

### **TOXICOLOGICAL INFORMATION:**

May be harmful by inhalation, ingestion or skin absorption. May cause irritation. Prolonged or repeated exposure may cause allergic or autoimmune reactions in certain sensitive individuals.

Toxicological properties have not been thoroughly investigated.

### **ECOLOGICAL INFORMATION:**

No information available.

## DISPOSAL CONSIDERATIONS:

Country, federal, state and local regulations concerning disposal are varied and change frequently. For this reason, we recommend that you contact your authorities for information on the disposal of this product and observe any applicable regulations. Alternatively, arrange for disposal by a licensed disposal company.

Due to the biological nature of this product we recommend as good laboratory practice that its disposal includes a biological inactivation step (e.g. by autoclaving, incineration, etc.), even though the biohazard properties of the product do not make such a step mandatory.

## TRANSPORT INFORMATION:

Not applicable

## REGULATORY INFORMATION:

Caution: Substance has not been fully tested. Based on general health and good laboratory practice considerations the observation of following risk and safety phrases is recommended.

### Risk Phrases:

R20/21/22 Harmful by inhalation, in contact with skin and if swallowed

### Safety Phrases:

S24/25: Avoid contact with skin and eyes.

S36/37/38: Wear suitable protective clothing, gloves and eye/face protection.

## OTHER INFORMATION:

Wash thoroughly after handling.

Material should only be handled by qualified, experienced professionals. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide for experienced personnel. DIARECT AG shall not be held liable for any damage resulting from the handling or from contact with the above product.

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