

Safety Data Sheet

Thrombin

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Thrombin, human plasma
Product Number: CL-30100
Brand: CELLINK
General use: For use as a crosslinker of bioinks for 3D Bioprinting, cell encapsulation and delivery, tissue engineering and regenerative medicine, biomedical devices, drug delivery for research. Not for human use, for research only.

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2. HAZARDS IDENTIFICATION

Potential Health Effects:

Classification (Regulation, EC, No 1272/2008)

Specific target organ toxicity – single exposure, Category 3, H335
Skin irritation, Category 2, H315
Eye irritation, Category 2, H319
Respiration sensitization, Category 1, H334

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical name | CAS# | EC No. | EC Class |
|---------------|-----------|-----------|---------------------------|
| Thrombin | 9002-04-4 | 232-648-7 | H335, H315, H319, H334 |

4. FIRST AID MEASURES

In case of eye contact: Flush eyes with water as a precaution. obtain medical attention.

In case of skin contact: Wash with soap and plenty of water.

If swallowed: Never give anything by mouth to an unconscious person. Rinse mouth with water. Immediately drink plenty of water, two glasses at most. Obtain medical attention.

If inhaled: If breathed in, move person into fresh air, obtain medical attention.

Notes to Medical Doctor: Most important symptoms and effects, both acute and delayed are irritant, allergic reaction, cough and shortness of breath.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Water, foam, carbon dioxide, dry powder.

Fire/Explosion Hazards: Combustible. Development of hazardous combustion gases or vapors possible in the event of fire. Fire may cause evolution of nitrogen oxides.

Fire Fighting Procedures: Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Flammable Limits: No data available.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures: Avoid dust formation. Avoid breathing vapors, mist or gas. Avoid substance contact.

Environmental precautions: Do not let product enter drains.

Methods and materials for containment and cleaning up: Sweep up and shovel. Keep in suitable, closed containers for disposal. Avoid generation of dusts.

7. HANDLING AND STORAGE

Precautions for safe handling: Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection. Work under hood.

Conditions for safe storage: Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits: N/A

Personal Protection Equipment

Eyes and Face: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Respiratory: Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Protective Clothing: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific workplace. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Gloves: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

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9. PHYSICAL AND CHEMICAL PROPERTIES.

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|----------------------------------|--------------------|
| Appearance: | White powder |
| Upper/lower flammability: | N/A |
| Odor: | Odorless |
| Vapor Pressure: | N/A |
| Odor Threshold: | N/A |
| Vapor Density: | N/A |
| pH: | N/A |
| Relative Density: | No data available. |

| | |
|-------------------------------|--------------------|
| Melting Point: | N/A |
| Solubility in Water: | Soluble. |
| Boiling Point: | No data available. |
| Flash Point: | N/A |
| Evaporation Rate: | No data available. |
| Flammability: | N/A |
| Partition Coefficient: | N/A |
| Auto-ignition Temp: | No data available. |
| Decomposition Temp: | N/A |
| Viscosity: | N/A |

10. STABILITY AND REACTIVITY

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|--|--|
| Conditions to avoid: | Strong heating |
| Reactivity: | No data available |
| Stability: | Stable under recommended storage conditions. |
| Possibility of hazardous reactions: | No data available. |
| Incompatible materials: | Acids, alkali metals. |
| Hazardous decomposition products: | in case of fire: see section 5 |

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

Oral: Symptoms: Irritations of mucous membranes in the mouth, pharynx, esophagus and gastrointestinal tract.

Inhalation: Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages: damage of respiratory tract.

Dermal: No data available.

Skin Corrosion/irritation: Causes skin irritation

Serious eye damage/eye irritation: Causes serious eye irritation

Germ cell mutagenicity: No data available.

Carcinogenicity:

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as Aldrich - W201502 Page 5 of 6 probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: No data available

Specific target organ toxicity - single exposure: No data available

Specific target organ toxicity - repeated exposure: No data available

Aspiration hazard: Mixture may cause allergy or asthma symptoms or breathing difficulties if inhaled.

Additional Information: No data available

12. ECOLOGICAL INFORMATION

Toxicity: No data available.

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Persistence and degradability: No data available.

Bioaccumulative potential: No data available.

Mobility in soil: No data available.

Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects: No data available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods:

Product: Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging: Dispose of as unused product.

14. TRANSPORT INFORMATION

U.S. Department of Transportation (DOT): Not dangerous goods

International Maritime Dangerous Goods (IMDG): Not dangerous goods

ADR – European agreement concerning the international carriage of dangerous goods by road: Not classified as dangerous in the meaning of transport regulations.

Additional information: Not regulated.

Other information: N/A

15. REGULATORY INFORMATION

SARA 302 Components: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards: No SARA Hazards

Massachusetts Right To Know Components:
Not listed.

Pennsylvania Right To Know Components:
Not listed.

New Jersey Right To Know Components:
Not listed.

California Prop. 65 Components:

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
