MATERIAL SAFETY DATA SHEET

SECTION 1. CHEMICAL IDENTIFICATION

CATALOG/PRODUCT#: TL670M

NAME: TUBULIN PROTEINS DERIVED FROM PORCINE BRAIN LABELED WITH HiLyte Fluor™ 647. HiLyte Fluor™ 647 is a trademark of Anaspec Inc. (CA, USA).

USE: LABORATORY CHEMICALS

MANUFACTURER/SUPPLIER:

CYTOSKELETON INC.
1830 S. Acoma St.
Denver, CO 80223
PHONE: 303-322-2254
FAX: 303-322-2257

24H EMERGENCY TOLL-FREE NUMBER: CALL INFOTRAC DAY OR NIGHT WITHIN USA AND CANADA: 1-800-535-5053
OUTSIDE USA AND CANADA: +1 352-323-3500 (COLLECT CALLS ACCEPTED)

SECTION 2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

OSHA HAZARDS
THIS PRODUCT IS NOT CONSIDERED HAZARDOUS

GHS CLASSIFICATION
THIS PRODUCT IS NOT CONSIDERED HAZARDOUS

GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS

PICTOGRAM      NONE
SIGNAL WORD     NONE

HAZARD STATEMENTS
NONE

PRECAUTIONARY STATEMENTS
NONE

NFPA RATINGS (SCALE 0-4)
FIRE = 0
HEALTH = 0
REACTIVITY = 0
HMIS RATINGS
HEALTH = 0
FIRE = 0
REACTIVITY = 0

POTENTIAL HEALTH EFFECTS
INHALATION MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY IRRITATION.
SKIN MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE SKIN IRRITATION.
EYES MAY CAUSE EYE IRRITATION.
INGESTION MAY BE HARMFUL IF SWALLOWED.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS#</th>
<th>EINECS#</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIPES (PIPERAZINE-N, N-BIS(2-ETHANESULFONIC ACID), SESQUISODIUM SALT)</td>
<td>100037-69-2</td>
<td>UNLISTED</td>
</tr>
<tr>
<td>FICOLL (SUCROSE, EPICHLOROHYDRIN COPOLYMER)</td>
<td>26873-85-8</td>
<td>UNLISTED</td>
</tr>
<tr>
<td>SUCROSE</td>
<td>57-50-1</td>
<td>200-334-9</td>
</tr>
<tr>
<td>GLYCEROL</td>
<td>56-81-5</td>
<td>200-289-5</td>
</tr>
<tr>
<td>ANTIFOAM C</td>
<td>UNLISTED</td>
<td>UNLISTED</td>
</tr>
<tr>
<td>DTT (DITHIOHREITOL)</td>
<td>3483-12-3</td>
<td>222-468-7</td>
</tr>
<tr>
<td>GTP (GUANOSINE 5'-TRIPHOSPHATE SODIUM SALT HYDRATE)</td>
<td>36051-31-7</td>
<td>252-847-2</td>
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<tr>
<td>MAGNESIUM CHLORIDE</td>
<td>7791-18-6</td>
<td>UNLISTED</td>
</tr>
<tr>
<td>EGTA (ETHYLENE GLYCOL-BIS(2-AMINOETHYLEETHER)-N,N,N',N'-TETRAACETIC ACID)</td>
<td>67-42-5</td>
<td>200-651-2</td>
</tr>
<tr>
<td>HILYTE FLUOR™ 647 C2 MALEIMIDE</td>
<td>NONE</td>
<td>NONE</td>
</tr>
<tr>
<td>PROTEIN</td>
<td>NONE</td>
<td>95%</td>
</tr>
</tbody>
</table>
SECTION 4. FIRST-AID MEASURES

AFTER INHALATION: SUPPLY FRESH AIR. IF NOT BREATHING, IF BREATHING IS IRREGULAR OR IF RESPIRATORY ARREST OCCURS, PROVIDE ARTIFICIAL RESPIRATION. CONSULT PHYSICIAN

AFTER SKIN CONTACT: IMMEDIATELY WASH SKIN WITH SOAP AND RINSE WITH COPIOUS AMOUNTS OF WATER. CONSULT PHYSICIAN

AFTER EYE CONTACT: CHECK FOR AND REMOVE ANY CONTACT LENSES. RINSE OPENED EYE FOR AT LEAST 15 MINUTES UNDER RUNNING WATER. THEN CONSULT PHYSICIAN

AFTER SWALLOWING: WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL FOR PHYSICIAN

WASH CONTAMINATED CLOTHING BEFORE REUSE.

SECTION 5. FIREFIGHTING MEASURES

EXTINGUISHING MEDIA
SUITABLE EXTINGUISHING AGENTS: USE DRY CHEMICAL POWDER, WATER SPRAY, CARBON DIOXIDE OR APPROPRIATE FOAM.

ADVICE FOR FIREFIGHTERS
PROTECTIVE EQUIPMENT: MOUNT RESPIRATORY PROTECTIVE DEVICE
PREVENT CONTACT WITH SKIN, FACE AND EYES

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES: WEAR PROTECTIVE CLOTHING, RESPIRATOR, CHEMICAL SAFETY GOGGLES, GLOVES.

ENVIRONMENTAL PRECAUTIONS: DILUTE WITH PLENTY OF WATER. DO NOT ALLOW TO ENTER SEWERS/SURFACE OR GROUND WATER.

METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP: ABSORB WITH LIQUID-BINDING MATERIAL (SAND, DIATOMITE, ACID BINDERS, UNIVERSAL BINDERS, SAWDUST). DISPOSE CONTAMINATED MATERIAL AS WASTE ACCORDING TO SECTION 13. ENSURE ADEQUATE VENTILATION.

REFERENCE TO OTHER SECTIONS: SEE SECTION 8 FOR INFORMATION ON PERSONAL PROTECTION EQUIPMENT. SEE SECTION 13 FOR DISPOSAL INFORMATION.

SECTION 7. HANDLING AND STORAGE

HANDLING
PRECAUTIONS FOR SAFE HANDLING: ENSURE GOOD VENTILATION/EXHAUSTION AT THE WORKPLACE. WEAR APPROPRIATE PROTECTIVE CLOTHING (SEE SECTION 8). DO NOT RE-USE CONTAINER. DO NOT EAT, DRINK OR SMOKE IN AREAS WHERE THIS PRODUCT IS HANDLED, STORED OR PROCESSED. WASH HANDS AFTER WORKING WITH MATERIAL.

INFORMATION ABOUT PROTECTION AGAINST EXPLOSIONS AND FIRES: STORE IN CONTAINER PROTECTED FROM DIRECT SUNLIGHT IN A DRY, COOL, WELL-VENTILATED PLACE. STORE AT -70 DEGREES C OR 4 DEGREES C WITH
DESICCANT. SEPARATE FROM OXIDIZING MATERIALS. KEEP CONTAINERS CLOSED AND SEALED.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES
STORAGE
REQUIREMENTS TO BE MET BY STOREROOMS AND RECEPTACLES: STORE AT 2-8°C WITH DESICCANT (OR -70 DEGREES C). KEEP CONTAINER TIGHTLY CLOSED AND SEALED UNTIL READY FOR USE. STORE DESICCATED.
FURTHER INFORMATION ABOUT STORAGE CONDITIONS: KEEP RECEPTACLE TIGHTLY SEALED.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT
GENERAL PROTECTIVE AND HYGIENIC MEASURES
KEEP AWAY FROM FOODSTUFFS, BEVERAGES AND FEED
WASH HANDS BEFORE BREAKS AND AT THE END OF WORK
IMMEDIATELY REMOVE ALL SOILED AND CONTAMINATED CLOTHING
AVOID CONTACT WITH THE EYES AND SKIN

BREATHING EQUIPMENT
SHORT TERM FILTER DEVICE: FILTER P2
DO NOT BREATHE. USE MECHANICAL EXHAUST SYSTEM

PROTECTION OF HANDS
PROTECTIVE GLOVES.
THE GLOVE MATERIAL HAS TO BE IMPERMEABLE AND RESISTANT TO THE PRODUCT/SUBSTANCE/PREPARATION. AS THE PRODUCT IS A PREPARATION OF SEVERAL SUBSTANCES, THE RESISTANCE OF THE GLOVE MATERIAL CANNOT BE CALCULATED IN ADVANCE AND THEREFORE HAS TO BE CHECKED PRIOR TO APPLICATION. NO RECOMMENDATION CAN BE GIVEN FOR THE GLOVE MATERIAL FOR THIS PRODUCT. SELECT GLOVE MATERIALS BASE ON PENETRATION TIMES, RATES OF DIFFUSION AND DEGRADATION OF MATERIAL.

MATERIAL OF GLOVES
THE SELECTION OF SUITABLE GLOVES DEPENDS NOT ONLY ON THE MATERIAL BUT ON QUALITY OF MATERIAL AND VARIES FROM MANUFACTURER TO MANUFACTURER.

PENETRATION TIME OF GLOVE MATERIAL
THE EXACT BREAK THROUGH TIME HAS TO BE FOUND OUT BY THE MANUFACTURER OF THE PROTECTIVE GLOVES AND HAS TO BE OBSERVED.

FOR THE PERMANENT CONTACT OF A MAXIMUM OF 15 MINUTES, GLOVES MADE OF THE FOLLOWING MATERIALS ARE SUITABLE:
NEOPRENE GLOVES

EYE PROTECTION: TIGHTLY SEALED GOGGLES

BODY PROTECTION: PROTECTIVE WORK CLOTHING
SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

GENERAL INFORMATION
FORM: SOLID (LYOPHILIZED POWDER)
COLOR: OFF-WHITE TO LIGHT GREEN
CHANGE IN CONDITION
MELTING POINT/MELTING RANGE: N/A
BOILING POINT/BOILING RANGE: N/A
FLASH POINT: N/A
SELF-IGNITING: PRODUCT IS NOT SELF-IGNITING
DANGER OF EXPLOSION: PRODUCT IS NOT EXPLOSIVE.
DENSITY: NOT DETERMINED
SOLUBILITY IN/MISCIBILITY WITH WATER: FULLY MISCIBLE

SECTION 10. STABILITY AND REACTIVITY

REACTIVITY
CHEMICAL STABILITY: THE PRODUCT IS STABLE.

THERMAL DECOMPOSITION/CONDITIONS TO BE AVOIDED: AVOID CREATION OF DUST WHEN HANDLING AND AVOID ALL POSSIBLE SOURCES OF IGNITION. PREVENT DUST ACCUMULATION. REACTIVE OR INCOMPATIBLE WITH OXIDIZING MATERIALS.

POSSIBILITY OF HAZARDOUS REACTIONS: NO DANGEROUS REACTIONS KNOWN
HAZARDOUS DECOMPOSITION PRODUCTS: NO DANGEROUS PRODUCTS KNOWN

SECTION 11. TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS
TO THE BEST OF OUR KNOWLEDGE, THE TOXICOLOGICAL PROPERTIES OF THIS PRODUCT HAVE NOT BEEN THOROUGHLY INVESTIGATED.

NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS.

INHALATION SLIGHTLY IRRITATING TO THE RESPIRATORY SYSTEM. MAY CAUSE SENSITIZATION BY INHALATION. EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD.
INGESTION NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS
SKIN SLIGHTLY IRRITATING TO THE SKIN
EYES SLIGHTLY IRRITATING TO THE EYES

SECTION 12. ECOLOGICAL INFORMATION

NO DATA AVAILABLE. NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS.
SECTION 13. DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS
CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL. DISPOSAL OF THIS PRODUCT, SOLUTIONS AND ANY BY-PRODUCTS SHOULD AT ALL TIMES COMPLY WITH THE REQUIREMENTS OF ENVIRONMENTAL PROTECTION AND WASTE DISPOSAL LEGISLATION AND ANY REGIONAL LOCAL AUTHORITY REQUIREMENTS. AVOID DISPERSAL OF SPILLED MATERIAL AND RUNOFF AND CONTACT WITH SOIL, WATERWAYS, DRAINS AND SEWERS. OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

WITHIN THE PRESENT KNOWLEDGE OF THE SUPPLIER, THIS PRODUCT IS NOT REGARDED AS HAZARDOUS WASTE, AS DEFINED BY EU DIRECTIVE 91/689/EC.

SECTION 14. TRANSPORT INFORMATION

DOT CLASSIFICATION: THIS PRODUCT IS CONSIDERED TO BE NON-HAZARDOUS FOR TRANSPORT. NOT REGULATED

IATA-DGR CLASSIFICATION: THIS PRODUCT IS CONSIDERED TO BE NON-HAZARDOUS FOR TRANSPORT. NOT REGULATED

SECTION 15. REGULATORY INFORMATION

UNITED STATES REGULATORY INFORMATION

NONE OF THE INGREDIENTS IS LISTED.

SARA (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986-USA) SECTION 302/304/311/312:
NO PRODUCTS WERE LISTED

SARA (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986-USA) SECTION 313:
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.

CANADA REGULATORY INFORMATION
WHMIS CLASSIFICATION: THIS PRODUCT IS NOT CLASSIFIED UNDER WHMIS.

EU REGULATORY INFORMATION
THIS PRODUCT IS NOT CLASSIFIED ACCORDING TO EU LEGISLATION.

SECTION 16. OTHER INFORMATION

THIS INFORMATION IS BASED ON OUR PRESENT KNOWLEDGE. HOWEVER, THIS SHALL NOT CONSTITUTE A GUARANTEE FOR ANY SPECIFIC PRODUCT FEATURES
AND SHALL NOT ESTABLISH A LEGALLY VALID CONTRACTUAL RELATIONSHIP. THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT, BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. CYTOSKELETON INC. SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM CONTACT WITH THE ABOVE PRODUCT.

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