

**Cytoskeleton, Inc.**

**MSDS COVERSHEET**

**CATALOG # BK006P**

**TUBULIN POLYMERIZATION ASSAY KIT**

<b>PART/CATALOG #</b>	<b>DESCRIPTION</b>
T240-DX	TUBULIN PROTEIN
BST06	GTP STOCK
BST01	GENERAL TUBULIN BUFFER
BST05	TUBULIN GLYCEROL BUFFER (CUSTION BUFFER)
TXD01	PACLITAXEL
DMSO	DMSO

**MATERIAL SAFETY DATA SHEET**

**SECTION 1. CHEMICAL IDENTIFICATION**

**CATALOG/PRODUCT#:** T240

**NAME:** 99% PURE TUBULIN PROTEIN DERIVED FROM PORCINE BRAIN

**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 TRACT 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

PIPES (PIPERAZINE-N, N-BIS(2-ETHANESULFONIC ACID), SESQUISODIUM SALT	CAS#: 100037-69-2 <1% EINECS#: UNLISTED
FICOLL (SUCROSE, EPICHLOROHYDRIN COPOLYMER)	CAS#: 26873-85-8 1% EINECS#: UNLISTED
EGTA (ETHYLENE GLYCOL-BIS(2-AMINOETHYLETHER)- N,N,N',N'-TETRAACETIC ACID	CAS#: 67-42-5 <1% EINECS#:200-651-2
SUCROSE	CAS#: 57-50-1 5% EINECS#: 200-334-9
ANTIFOAM C	CAS#: UNLISTED <0.1% EINECS#: UNLISTED
GTP (GUANOSINE 5'-TRIPHOSPHATE SODIUM SALT HYDRATE)	CAS#: 36051-31-7 <1% EINECS#: 252-847-2
MAGNESIUM CHLORIDE	CAS#: 7791-18-6 <1% EINECS#: UNLISTED
PROTEIN	CAS#: NONE ≥95% EINECS#: NONE

### SECTION 4. FIRST-AID MEASURES

**AFTER INHALATION:** SUPPLY FRESH AIR. CONSULT PHYSICIAN IN CASE OF COMPLAINTS

**AFTER SKIN CONTACT:** IMMEDIATELY WASH SKIN WITH SOAP AND RINSE WITH COPIOUS AMOUNTS OF WATER

**AFTER EYE CONTACT:** RINSE OPENED EYE FOR AT LEAST 15 MINUTES UNDER RUNNING WATER. CONSULT PHYSICIAN

**AFTER SWALLOWING:** WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CONSULT PHYSICIAN

WASH CONTAMINATED CLOTHING BEFORE REUSE.

## **SECTION 5. FIREFIGHTING MEASURES**

### **EXTINGUISHING MEDIA**

**SUITABLE EXTINGUISHING AGENTS:** CARBON DIOXIDE, EXTINGUISHING POWDER OR WATER SPRAY.

### **ADVICE FOR FIREFIGHTERS**

**PROTECTIVE EQUIPMENT:** MOUNT RESPIRATORY PROTECTIVE DEVICE  
PREVENT CONTACT WITH SKIN 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.  
**INFORMATION ABOUT PROTECTION AGAINST EXPLOSIONS AND FIRES:** NOT IGNITABLE

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES  
STORAGE

**REQUIREMENTS TO BE MET BY STOREROOMS AND RECEPTACLES:** STORE AT 2-8°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**

CONTAINS NO SUBSTANCES WITH OCCUPATIONAL EXPOSURE LIMIT VALUES

### **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)

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**

STABLE WHEN STORED AS DIRECTED.

**THERMAL DECOMPOSITION/CONDITIONS TO BE AVOIDED:** NO DECOMPOSITION IF USED ACCORDING TO SPECIFICATIONS

**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.

ON THE SKIN: MAY CAUSE SKIN IRRITATION

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN

ON THE EYE: MAY CAUSE EYE IRRITATION

INHALATION: MAY IRRITATE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT. MAY BE HARMFUL IF INHALED

INGESTION: MAY BE HARMFUL IF SWALLOWED

## **SECTION 12. ECOLOGICAL INFORMATION**

NO DATA AVAILABLE

## **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.

DISPOSE OF CONTAMINATED PACKAGING AS UNUSED PRODUCT

## **SECTION 14. TRANSPORT INFORMATION**

DOT CLASSIFICATION: THIS PRODUCT IS CONSIDERED TO BE NON-HAZARDOUS FOR TRANSPORT.

IATA-DGR CLASSIFICATION: THIS PRODUCT IS CONSIDERED TO BE NON-HAZARDOUS FOR TRANSPORT.

IMDG CLASSIFICATION: THIS PRODUCT IS CONSIDERED TO BE NON-HAZARDOUS FOR TRANSPORT.

## **SECTION 15. REGULATORY INFORMATION**

### **OSHA HAZARDS**

NO KNOWN HAZARDS

### **UNITED STATES REGULATORY INFORMATION**

**SARA (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986-USA) SECTION 302/304 (40CFR355.30/40CFR355.40):**

NONE OF THE INGREDIENTS IS 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: NOT CONTROLLED UNDER WHMIS.

## **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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**SAFETY DATA SHEET**

**SECTION 1. CHEMICAL IDENTIFICATION**

**CATALOG/PRODUCT#:** BST06-010

**NAME:** GUANOSINE 5'-TRIPHOSPHATE SODIUM SALT (GTP)

**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**

TOXIC BY INGESTION, IRRITANT

THIS PRODUCT IS CONSIDERED HAZARDOUS BY THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200).

THIS PRODUCT IS CLASSIFIED AS HAZARDOUS ACCORDING TO DIRECTIVE 67/548/EC AND ASSOCIATED AMENDMENTS.

**POTENTIAL HEALTH EFFECTS**

INHALATION	MAY BE HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION
SKIN	MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES SKIN IRRITATION
INGESTION	TOXIC IF SWALLOWED
EYES	CAUSES EYE IRRITATION

**NFPA RATINGS (SCALE 0-4)**

FIRE = 1  
HEALTH = 2  
REACTIVITY = 0



**HMIS RATINGS**

HEALTH = 2

FIRE = 1

REACTIVITY = 0

**GHS CLASSIFICATION:**

SIGNAL WORD:

DANGER

HAZARD PICTOGRAMS:



ACUTE TOXICITY, CATEGORY 4

SERIOUS EYE DAMAGE, CATEGORY 1

CHRONIC AQUATIC TOXICITY, CATEGORY 3

SPECIFIC TARGET ORGAN TOXICITY -SINGLE EXPOSURE (CATEGORY 3)

SKIN IRRITATION (CATEGORY 2)

**HEALTH HAZARD STATEMENTS:**

H302: HARMFUL IF SWALLOWED  
H315: CAUSES SKIN IRRITATION  
H318: CAUSES SERIOUS EYE DAMAGE  
H319: CAUSES SERIOUS EYE IRRITATION  
H335: MAY CAUSE RESPIRATORY IRRITATION  
H412: HARMFUL TO AQUATIC LIFE WITH LONG-LASTING EFFECTS

**PRECAUTIONARY STATEMENTS:**

P261: AVOID BREATHING  
DUST/FUMES/GAS/MIST/VAPORS/SPRAY  
P264: WASH SKIN THOROUGHLY AFTER HANDLING  
P270: DO NOT EAT, DRINK OR SMOKE WHEN USING THIS PRODUCT  
P271: USE ONLY IN A WELL-VENTILATED AREA  
P280: WEAR PROTECTIVE GLOVES/EYE PROTECTION/FACE PROTECTION  
P301 + P312: IF SWALLOWED, CALL A POISON CENTER OR PHYSICIAN IF YOU FEEL UNWELL.  
P302 + P352: IF ON SKIN: WSH WITH PLENTY OF SOAP AND WATER.  
P304 + P340: IF INHALED: REMOVE VICTIM TO FRESH AIR AND KEEP AT REST IN A POSITION COMFORTABLE FOR BREATHING.  
P305+P351+P338: IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES. REMOVE CONTACT LENSES IF PRESENT AND EASY TO DO. CONTINUE RINSING.  
P332 + P313: IF SKIN IRRITATION OCCURS: GET MEDICAL ADVICE/ATTENTION.  
P337 + P313: IF EYE IRRITATION PERSISTS: GET MEDICAL ADVICE/ATTENTION.

P362: TAKE OFF CONTAMINATED CLOTHING AND WASH BEFORE REUSE.  
P403 + P233: STORE IN A WELL-VENTILATED PLACE. KEEP CONTAINER TIGHTLY CLOSED.  
P405: STORE LOCKED UP.  
P501: DISPOSE OF CONTENTS/CONTAINER TO AN APPROVED WASTE DISPOSAL PLANT.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

GUANOSINE 5'-TRIPHOSPHATE SODIUM SALT (GTP)	CAS#: 36051-31-7 EINECS#: 252-847-2	11%
GUANIDINE CARBONATE SALT	CAS#: 593-85-1 EINECS#: 209-813-7	9%
WATER	CAS#: 7732-18-5 EINECS#:231-791-2	80%

### SECTION 4. FIRST-AID MEASURES

**AFTER INHALATION:** SUPPLY FRESH AIR. CONSULT PHYSICIAN IN CASE OF COMPLAINTS. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. CONSULT A PHYSICIAN

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

**AFTER EYE CONTACT:** 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:** CARBON DIOXIDE, EXTINGUISHING POWDER OR WATER SPRAY.

#### ADVICE FOR FIREFIGHTERS

**PROTECTIVE EQUIPMENT:** MOUNT RESPIRATORY PROTECTIVE DEVICE PREVENT CONTACT WITH SKIN AND EYES

**HAZARDOUS COMBUSTION PRODUCTS:** HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS: CARBON OXIDES, NITROGEN OXIDES (NO<sub>x</sub>), SULPHUR OXIDES, PHOSPHOROUS OXIDES, LITHIUM OXIDES

### SECTION 6. ACCIDENTAL RELEASE MEASURES

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

**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:** UPON RECONSTITUTION, ABSORB WITH LIQUID-BINDING MATERIAL (SAND, DIATOMITE, ACID BINDERS, UNIVERSAL BINDERS, SAWDUST). DISPOSE CONTAMINATED MATERIAL AS WASTE ACCORDING TO SECTION 13. ENSURE ADEQUATE VENTILATION. IN LYOPHILIZED FORM, PICK UP WITHOUT CREATING DUST. KEEP IN SUITABLE, CLOSED CONTAINERS FOR DISPOSAL.

**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:** AVOID FORMATION OF DUST AND AEROSOLS. AVOID CONTACT WITH SKIN AND EYES. ENSURE GOOD VENTILATION/EXHAUSTION AT THE WORKPLACE. WEAR APPROPRIATE PROTECTIVE CLOTHING (SEE SECTION 8). DO NOT RE-USE CONTAINER.

**INFORMATION ABOUT PROTECTION AGAINST EXPLOSIONS AND FIRES:** NOT IGNITABLE

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES  
STORAGE

**REQUIREMENTS TO BE MET BY STOREROOMS AND RECEPTACLES:** STORE AT 2-8°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**

CONTAINS NO SUBSTANCES WITH OCCUPATIONAL EXPOSURE LIMIT VALUES

### **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 AND FACE SHIELD

**BODY PROTECTION:** PROTECTIVE WORK CLOTHING

### **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

#### **INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES**

##### **GENERAL INFORMATION**

FORM: SOLID (LYOPHILIZED POWDER)

CHANGE IN CONDITION

MELTING POINT/MELTING RANGE: NO DATA AVAILABLE

BOILING POINT/BOILING RANGE: NO DATA AVAILABLE

FLASH POINT: NO DATA AVAILABLE

SELF-IGNITING: NO DATA AVAILABLE

DANGER OF EXPLOSION: NO DATA AVAILABLE.

DENSITY: NOT DETERMINED

SOLUBILITY IN/MISCIBILITY WITH WATER: FULLY MISCIBLE

### **SECTION 10. STABILITY AND REACTIVITY**

#### **REACTIVITY**

##### **CHEMICAL STABILITY**

STABLE WHEN STORED AS RECOMMENDED.

**THERMAL DECOMPOSITION/CONDITIONS TO BE AVOIDED:** STRONG OXIDIZING AGENTS, STRONG ACIDS

**POSSIBILITY OF HAZARDOUS REACTIONS:** NO DANGEROUS REACTIONS KNOWN

**HAZARDOUS COMBUSTION PRODUCTS:** HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS: CARBON OXIDES, NITROGEN OXIDES (NO<sub>x</sub>), SULPHUR OXIDES, PHOSPHOROUS OXIDES, LITHIUM OXIDES

### **SECTION 11. TOXICOLOGICAL INFORMATION**

## **INFORMATION ON TOXICOLOGICAL EFFECTS**

### ACUTE TOXICITY

LD50 ORAL -MOUSE- 350 mg/kg

### IRRITATION AND CORROSION

EYES –RABBIT- MODERATE EYE IRRITATION – 24 H

### SENSITIZATION

NO DATA AVAILABLE

### CHRONIC EXPOSURE

IARC/ACGIH/NTP/OSHA: NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A CARCINOGEN OR POTENTIAL CARCINOGEN.

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

ON THE SKIN: CAUSES SKIN IRRITATION

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN

ON THE EYE: CAUSES EYE IRRITATION

INHALATION: IRRITATES MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT. MAY BE HARMFUL IF INHALED

INGESTION: TOXIC IF SWALLOWED

## **SECTION 12. ECOLOGICAL INFORMATION**

NO DATA AVAILABLE

## **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.

DISPOSE OF CONTAMINATED PACKAGING AS UNUSED PRODUCT

## **SECTION 14. TRANSPORT INFORMATION**

THIS PRODUCT IS SUBJECT TO THE DE MINIMIS EXCEPTIONS FOR DANGEROUS GOODS/HAZARDOUS MATERIALS IN ACCORDANCE WITH THE FOLLOWING REGULATIONS: IATA 2.6.10, ADR 3.5.1.4, AND U.S. DOT 49 CFR 173.4b.

DOT CLASSIFICATION: THIS PRODUCT IS CONSIDERED TO BE NON-HAZARDOUS FOR TRANSPORT.

IATA-DGR CLASSIFICATION: THIS PRODUCT IS CONSIDERED TO BE NON-HAZARDOUS FOR TRANSPORT.

IMDG CLASSIFICATION: THIS PRODUCT IS CONSIDERED TO BE NON-HAZARDOUS FOR TRANSPORT.

## **SECTION 15. REGULATORY INFORMATION**

### **OSHA HAZARDS**

TOXIC BY INGESTION, IRRITANT

### **DSL STATUS**

DIGUANIDINIUM CARBONATE IS ON THE CANADIAN DSL LIST.

### **TSCA:**

CAS# 593-85-1 IS LISTED ON THE TSCA INVENTORY.

### **OSHA:**

NONE OF THE CHEMICALS IN THIS PRODUCT ARE CONSIDERED HIGHLY HAZARDOUS BY OSHA

### **UNITED STATES REGULATORY INFORMATION**

SARA (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986-USA) SECTION 302/304 (40CFR355.30/40CFR355.40):

NONE OF THE INGREDIENTS IS 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.

### **STATE RIGHT TO KNOW COMPONENTS**

PA AND NJ

DIGUANIDINIUM CARBONATE

CAS#: 593-85-1

### **CANADA REGULATORY INFORMATION**

WHMIS CLASSIFICATION: THIS PRODUCT HAS A WHMIS CLASSIFICATION OF D2B.

**WGK (WATER DANGER/PROTECTION)**

CAS# 593-85-1:2

**EU REGULATORY INFORMATION**

**SAFETY PHRASES:**

S22: DO NOT BREATHE DUST

**RISK PHRASES:**

R22: HARMFUL IF SWALLOWED

R36/37/38: IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN

**HAZARD SYMBOLS:**

XI

**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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**MATERIAL SAFETY DATA SHEET**

**SECTION 1. CHEMICAL IDENTIFICATION**

**CATALOG/PRODUCT#:** BST01

**NAME:** GENERAL TUBULIN BUFFER

**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, CANADA, AND PUERTO RICO: 1-800-535-5053  
OUTSIDE USA, CANADA, AND PUERTO RICO: 352-323-35000 (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

**POTENTIAL HEALTH EFFECTS**

INHALATION                                    MAY BE HARMFUL IF INHALED. MAY CAUSE  
RESPIRATORY TRACT IRRITATION



SKIN MAY BE HARMFUL IF ABSORBED THROUGH SKIN.  
MAY CAUSE SKIN IRRITATION  
INGESTION MAY BE HARMFUL IF SWALLOWED  
EYES MAY CAUSE EYE IRRITATION

**NFPA RATINGS (SCALE 0-4)**

FIRE = 0  
HEALTH HAZARD = 0  
REACTIVITY HAZARD = 0

**HMIS RATINGS**

HEALTH HAZARD = 0  
FLAMMABILITY = 0  
PHYSICAL HAZARDS = 0

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

MAGNESIUM CHLORIDE HEXAHYDRATE	CAS#: 7791-18-6	<1%
	EINECS#: 232-094-6	
PIPES (PIPERAZINE-N, N-BIS(2-ETHANESULFONIC ACID), SESQUISODIUM SALT	CAS#: 100037-69-2	<3%
	EINECS#: UNLISTED	
EGTA (ETHYLENE GLYCOL-BIS(2-AMINOETHYLETHYR)- N,N,N',N'-TETRAACETIC ACID	CAS#: 67-42-5	<1%
	EINECS#:200-651-2	

**SECTION 4. FIRST-AID MEASURES**

**AFTER INHALATION:** SUPPLY FRESH AIR. CONSULT PHYSICIAN IN CASE OF COMPLAINTS. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. CONSULT A PHYSICIAN

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

**AFTER EYE CONTACT:** RINSE OPENED EYE FOR AT LEAST 15 MINUTES UNDER RUNNING WATER. CONSULT A PHYSICIAN.

**AFTER SWALLOWING:** WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CONSULT A PHYSICIAN.

WASH CONTAMINATED CLOTHING BEFORE REUSE.

**SECTION 5. FIREFIGHTING MEASURES**

**CONDITIONS OF FLAMMABILITY**

NOT FLAMMABLE OR COMBUSTIBLE

**EXTINGUISHING MEDIA**

**SUITABLE EXTINGUISHING AGENTS:** CARBON DIOXIDE, ALCOHOL-RESISTANT FOAM, EXTINGUISHING POWDER OR WATER SPRAY.

**ADVICE FOR FIREFIGHTERS**

**PROTECTIVE EQUIPMENT:** MOUNT RESPIRATORY PROTECTIVE DEVICE

PREVENT CONTACT WITH SKIN AND EYES

**HAZARDOUS COMBUSTION PRODUCTS:** HAZARDOUS DECOMPOSITION  
PRODUCTS FORMED UNDER FIRE CONDITIONS: NO DATA AVAILABLE

## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

**PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:** WEAR PROTECTIVE CLOTHING, RESPIRATOR, CHEMICAL SAFETY GOGGLES, GLOVES. AVOID DUST FORMATION. AVOID BREATHING VAPORS, MIST OR GAS.

**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:** UPON RECONSTITUTION, ABSORB WITH LIQUID-BINDING MATERIAL (SAND, DIATOMITE, ACID BINDERS, UNIVERSAL BINDERS, SAWDUST). DISPOSE CONTAMINATED MATERIAL AS WASTE ACCORDING TO SECTION 13. ENSURE ADEQUATE VENTILATION. KEEP IN SUITABLE, CLOSED CONTAINERS FOR DISPOSAL.

**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:** AVOID FORMATION OF DUST AND AEROSOLS OR INHALATION OF VAPOR OR MIST. AVOID CONTACT WITH SKIN AND EYES. ENSURE GOOD VENTILATION/EXHAUSTION AT THE WORKPLACE. WEAR APPROPRIATE PROTECTIVE CLOTHING (SEE SECTION 8). DO NOT RE-USE CONTAINER.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES  
STORAGE

**REQUIREMENTS TO BE MET BY STOREROOMS AND RECEPTACLES:** STORE AT 2-8°C. KEEP CONTAINER TIGHTLY CLOSED AND SEALED UNTIL READY FOR USE. STORE DESICCATED.

**FURTHER INFORMATION ABOUT STORAGE CONDITIONS:** KEEP RECEPTACLE TIGHTLY SEALED IN A WELL-VENTILATED PLACE.

## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

CONTAINS NO SUBSTANCES WITH OCCUPATIONAL EXPOSURE LIMIT VALUES

### **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**

WHERE RISK ASSESSMENT SHOWS AIR-PURIFYING RESPIRATORS ARE APPROPRIATE, USE A FULL-FACE RESPIRATOR WITH MULTI-PURPOSE COMBINATION (US) OR TYPE ABEK (EN14387) RESPIRATOR CARTRIDGES AS A BACKUP TO ENGINEERING CONTROLS. IF THE RESPIRATOR IS THE SOLE MEANS OF PROTECTION, USE A FULL-FACE SUPPLIED AIR RESPIRATOR.

**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 OR SAFETY GLASSES WITH SIDE-SHIELDS

**BODY PROTECTION:** PROTECTIVE WORK CLOTHING

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

**INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES**

**GENERAL INFORMATION**

FORM: LYOPHILIZED POWDER

CHANGE IN CONDITION

MELTING POINT/MELTING RANGE: NO DATA AVAILABLE

BOILING POINT/BOILING RANGE: NO DATA AVAILABLE

FLASH POINT: NO DATA AVAILABLE

SELF-IGNITING: NO DATA AVAILABLE

DANGER OF EXPLOSION: NO DATA AVAILABLE.

DENSITY: NO DATA AVAILABLE

SOLUBILITY IN/MISCIBILITY WITH WATER: SOLUBLE

**SECTION 10. STABILITY AND REACTIVITY**

**REACTIVITY**

**CHEMICAL STABILITY**

STABLE WHEN STORED AS RECOMMENDED.

**THERMAL DECOMPOSITION/CONDITIONS TO BE AVOIDED:** STRONG OXIDIZING AGENTS, STRONG BASES

**POSSIBILITY OF HAZARDOUS REACTIONS:** NO DATA AVAILABLE

**HAZARDOUS DECOMPOSITION PRODUCTS:** HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS: NO DATA AVAILABLE

**SECTION 11. TOXICOLOGICAL INFORMATION****INFORMATION ON TOXICOLOGICAL EFFECTS****ACUTE TOXICITY****LD50 ORAL**

NO DATA AVAILABLE

**INHALATION LC50**

NO DATA AVAILABLE

**DERMAL LD50**

NO DATA AVAILABLE

**OTHER INFORMATION ON ACUTE TOXICITY**

NO DATA AVAILABLE

**SKIN CORROSION/IRRITATION**

NO DATA AVAILABLE

**SERIOUS EYE DAMAGE/EYE IRRITATION**

NO DATA AVAILABLE

**RESPIRATORY OR SKIN SENSITIZATION**

NO DATA AVAILABLE

**GERM CELL MUTAGENICITY**

NO DATA AVAILABLE

**CARCINOGENICITY**

IARC/ACGIH/NTP/OSHA: NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A CARCINOGEN OR POTENTIAL CARCINOGEN.

**REPRODUCTIVE TOXICITY**

NO DATA AVAILABLE

**TERATOGENICITY**

NO DATA AVAILABLE

**SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (GLOBALLY HARMONIZED SYSTEM)**

NO DATA AVAILABLE

**SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE (GLOBALLY HARMONIZED SYSTEM)**

NO DATA AVAILABLE

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

SKIN: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE SKIN IRRITATION.  
EYES: MAY CAUSE EYE IRRITATION.  
INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION.  
INGESTION: MAY BE HARMFUL IF SWALLOWED.

**SECTION 12. ECOLOGICAL INFORMATION**

NO DATA AVAILABLE

**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.

DISPOSE OF CONTAMINATED PACKAGING AS UNUSED PRODUCT

**SECTION 14. TRANSPORT INFORMATION**

DOT CLASSIFICATION: THIS PRODUCT IS CONSIDERED TO BE NON-HAZARDOUS FOR TRANSPORT.

IATA-DGR CLASSIFICATION: THIS PRODUCT IS CONSIDERED TO BE NON-HAZARDOUS FOR TRANSPORT.

IMDG CLASSIFICATION: THIS PRODUCT IS CONSIDERED TO BE NON-HAZARDOUS FOR TRANSPORT.

**SECTION 15. REGULATORY INFORMATION**

**OSHA HAZARDS**

THIS PRODUCT IS NOT CONSIDERED HAZARDOUS

**UNITED STATES REGULATORY INFORMATION**

**SARA (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986-USA)  
SECTION 302/304 (40CFR355.30/40CFR355.40):**

NONE OF THE INGREDIENTS IS 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.

**SARA 311/312 HAZARDS**

NONE

**STATE RIGHT TO KNOW COMPONENTS**

PA, MA, AND NJ

NO COMPONENTS ARE 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.

**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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**MATERIAL SAFETY DATA SHEET**

**SECTION 1. CHEMICAL IDENTIFICATION**

**CATALOG/PRODUCT#:** BST05

**NAME:** TUBULIN GLYCEROL BUFFER

**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, CANADA, AND PUERTO RICO: 1-800-535-5053  
OUTSIDE USA, CANADA, AND PUERTO RICO: 352-323-35000 (COLLECT CALLS  
ACCEPTED)

**SECTION 2. HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW**

**OSHA HAZARDS**

TARGET ORGAN EFFECT

**TARGET ORGANS**

KIDNEY

**GHS CLASSIFICATION**

SKIN IRRITATION (CATEGORY 3)  
EYE IRRITATION (CATEGORY 2B)

**GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS**

PICTOGRAM	NONE
SIGNAL WORD	WARNING

**HAZARD STATEMENTS**

H316	CAUSES MILD SKIN IRRITATION
H320	CAUSES EYE IRRITATION

**PRECAUTIONARY STATEMENTS**

P305+P351+P338 IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES. REMOVE CONTACT LENSES IF PRESENT AND EASY TO DO. CONTINUE RINSING.

### POTENTIAL HEALTH EFFECTS

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

### NFPA RATINGS (SCALE 0-4)

FIRE = 1  
HEALTH HAZARD = 0  
REACTIVITY HAZARD = 0

### HMIS RATINGS

HEALTH HAZARD = 0  
FLAMMABILITY = 1  
PHYSICAL HAZARDS = 0  
CHRONIC HEALTH HAZARD = \*

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

MAGNESIUM CHLORIDE HEXAHYDRATE	CAS#: 7791-18-6	<1%
	EINECS#: 232-094-6	
PIPES (PIPERAZINE-N, N-BIS(2-ETHANESULFONIC ACID), SESQUISODIUM SALT	CAS#: 100037-69-2	<3%
	EINECS#: UNLISTED	
EGTA (ETHYLENE GLYCOL-BIS(2-AMINOETHYLETHYR)- N,N,N',N'-TETRAACETIC ACID	CAS#: 67-42-5	<1%
	EINECS#:200-651-2	
GLYCEROL	CAS#: 56-81-5	60%
	EINECS#: 200-289-5	

## SECTION 4. FIRST-AID MEASURES

**AFTER INHALATION:** SUPPLY FRESH AIR. CONSULT PHYSICIAN IN CASE OF COMPLAINTS. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. CONSULT A PHYSICIAN

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

**AFTER EYE CONTACT:** RINSE OPENED EYE FOR AT LEAST 15 MINUTES UNDER RUNNING WATER. CONSULT A PHYSICIAN.



**AFTER SWALLOWING:** WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CONSULT A PHYSICIAN.

WASH CONTAMINATED CLOTHING BEFORE REUSE.

## **SECTION 5. FIREFIGHTING MEASURES**

### **CONDITIONS OF FLAMMABILITY**

NOT FLAMMABLE OR COMBUSTIBLE

### **EXTINGUISHING MEDIA**

**SUITABLE EXTINGUISHING AGENTS:** CARBON DIOXIDE, ALCOHOL-RESISTANT FOAM, EXTINGUISHING POWDER OR WATER SPRAY.

### **ADVICE FOR FIREFIGHTERS**

**PROTECTIVE EQUIPMENT:** MOUNT RESPIRATORY PROTECTIVE DEVICE  
PREVENT CONTACT WITH SKIN AND EYES

**HAZARDOUS COMBUSTION PRODUCTS:** HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS: CARBON OXIDES

## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

### **PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY**

**PROCEDURES:** WEAR PROTECTIVE CLOTHING, RESPIRATOR, CHEMICAL SAFETY GOGGLES, GLOVES. AVOID DUST FORMATION. AVOID BREATHING VAPORS, MIST OR GAS.

**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:** UPON RECONSTITUTION, ABSORB WITH LIQUID-BINDING MATERIAL (SAND, DIATOMITE, ACID BINDERS, UNIVERSAL BINDERS, SAWDUST). DISPOSE CONTAMINATED MATERIAL AS WASTE ACCORDING TO SECTION 13. ENSURE ADEQUATE VENTILATION. KEEP IN SUITABLE, CLOSED CONTAINERS FOR DISPOSAL.

**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:** AVOID FORMATION OF DUST AND AEROSOLS OR INHALATION OF VAPOR OR MIST. AVOID CONTACT WITH SKIN AND EYES. ENSURE GOOD VENTILATION/EXHAUSTION AT THE WORKPLACE. WEAR APPROPRIATE PROTECTIVE CLOTHING (SEE SECTION 8). DO NOT RE-USE CONTAINER.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES  
STORAGE

**REQUIREMENTS TO BE MET BY STOREROOMS AND RECEPTACLES:** STORE AT 2-8°C. KEEP CONTAINER TIGHTLY CLOSED AND SEALED UNTIL READY FOR USE. STORE DESICCATED. HYGROSCOPIC

**FURTHER INFORMATION ABOUT STORAGE CONDITIONS:** KEEP RECEPTACLE TIGHTLY SEALED IN A WELL-VENTILATED PLACE.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

COMPONENT	CAS#	VALUE	CONTROL PARAMETERS	BASIS
GLYCEROL	56-81-5	TWA	10 mg/m <sup>3</sup>	USA. OSHA - TABLE Z-1 LIMITS FOR AIR CONTAMINANTS - 1910.1000
		TWA	5 mg/m <sup>3</sup>	USA. OSHA - TABLE Z-1 LIMITS FOR AIR CONTAMINANTS - 1910.1000
		TWA	10 mg/m <sup>3</sup>	USA. ACGIH THRESHOLD LIMIT VALUES (TLV)
REMARKS	UPPER RESPIRATORY TRACT IRRITATION	TWA	15 mg/m <sup>3</sup>	USA. OCCUPATIONAL EXPOSURE LIMITS (OSHA) - TABLE Z-1 LIMITS FOR AIR CONTAMINANTS
		TWA	5 mg/m <sup>3</sup>	USA. OCCUPATIONAL EXPOSURE LIMITS (OSHA) - TABLE Z-1 LIMITS FOR AIR CONTAMINANTS

### 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

WHERE RISK ASSESSMENT SHOWS AIR-PURIFYING RESPIRATORS ARE APPROPRIATE, USE A FULL-FACE RESPIRATOR WITH MULTI-PURPOSE COMBINATION (US) OR TYPE ABEK (EN14387) RESPIRATOR CARTRIDGES AS A BACKUP TO ENGINEERING CONTROLS. IF THE RESPIRATOR IS THE SOLE MEANS OF PROTECTION, USE A FULL-FACE SUPPLIED AIR RESPIRATOR.

#### 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 OR SAFETY GLASSES WITH SIDE-SHIELDS

**BODY PROTECTION:** PROTECTIVE WORK CLOTHING

## **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

### **INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES**

#### **GENERAL INFORMATION**

FORM: LIQUID

CHANGE IN CONDITION

MELTING POINT/MELTING RANGE: NO DATA AVAILABLE

BOILING POINT/BOILING RANGE: NO DATA AVAILABLE

FLASH POINT: NO DATA AVAILABLE

SELF-IGNITING: NO DATA AVAILABLE

DANGER OF EXPLOSION: NO DATA AVAILABLE.

DENSITY: NO DATA AVAILABLE

SOLUBILITY IN/MISCIBILITY WITH WATER: SOLUBLE

## **SECTION 10. STABILITY AND REACTIVITY**

### **REACTIVITY**

#### **CHEMICAL STABILITY**

STABLE WHEN STORED AS RECOMMENDED.

**THERMAL DECOMPOSITION/CONDITIONS TO BE AVOIDED:** STRONG OXIDIZING AGENTS, STRONG BASES

**POSSIBILITY OF HAZARDOUS REACTIONS:** NO DATA AVAILABLE

**HAZARDOUS DECOMPOSITION PRODUCTS:** HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS: CARBON OXIDES

## **SECTION 11. TOXICOLOGICAL INFORMATION**

### **INFORMATION ON TOXICOLOGICAL EFFECTS**

#### **ACUTE TOXICITY**

##### **LD50 ORAL**

NO DATA AVAILABLE

##### **INHALATION LC50**

NO DATA AVAILABLE

##### **DERMAL LD50**

LD50 DERMAL -RABBIT- >10,000 mg/kg

**OTHER INFORMATION ON ACUTE TOXICITY**

NO DATA AVAILABLE

**SKIN CORROSION/IRRITATION**

NO DATA AVAILABLE

**SERIOUS EYE DAMAGE/EYE IRRITATION**

NO DATA AVAILABLE

**RESPIRATORY OR SKIN SENSITIZATION**

NO DATA AVAILABLE

**GERM CELL MUTAGENICITY**

NO DATA AVAILABLE

**CARCINOGENICITY**

IARC/ACGIH/NTP/OSHA: NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A CARCINOGEN OR POTENTIAL CARCINOGEN.

**REPRODUCTIVE TOXICITY**

NO DATA AVAILABLE

**TERATOGENICITY**

NO DATA AVAILABLE

**SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (GLOBALLY HARMONIZED SYSTEM)**

NO DATA AVAILABLE

**SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE (GLOBALLY HARMONIZED SYSTEM)**

NO DATA AVAILABLE

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

SKIN:	MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE SKIN IRRITATION.
EYES:	MAY CAUSE EYE IRRITATION.
INHALATION:	MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION.
INGESTION:	MAY BE HARMFUL IF SWALLOWED.

**SIGNS AND SYMPTOMS OF EXPOSURE**

PROLONGED OR REPEATED EXPOSURE MAY CAUSE: NAUSEA, HEADACHE, VOMITING

**SECTION 12. ECOLOGICAL INFORMATION**

NO DATA AVAILABLE

### **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.

DISPOSE OF CONTAMINATED PACKAGING AS UNUSED PRODUCT

### **SECTION 14. TRANSPORT INFORMATION**

DOT CLASSIFICATION: THIS PRODUCT IS CONSIDERED TO BE NON-HAZARDOUS FOR TRANSPORT.

IATA-DGR CLASSIFICATION: THIS PRODUCT IS CONSIDERED TO BE NON-HAZARDOUS FOR TRANSPORT.

IMDG CLASSIFICATION: THIS PRODUCT IS CONSIDERED TO BE NON-HAZARDOUS FOR TRANSPORT.

### **SECTION 15. REGULATORY INFORMATION**

#### **OSHA HAZARDS**

TARGET ORGAN EFFECT

#### **UNITED STATES REGULATORY INFORMATION**

**SARA (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986-USA)**

**SECTION 302/304 (40CFR355.30/40CFR355.40):**

NONE OF THE INGREDIENTS IS 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.

#### **SARA 311/312 HAZARDS**

CHRONIC HEALTH HAZARD

#### **STATE RIGHT TO KNOW COMPONENTS**

PA, MA, AND NJ

GLYCEROL

CAS#: 56-81-5

**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.

**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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**MATERIAL SAFETY DATA SHEET**

**SECTION 1. CHEMICAL IDENTIFICATION**

**CATALOG/PRODUCT#:** TXD01

**NAME:** PACLITAXEL (TAXOL)

**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**

TARGET ORGAN EFFECT, SKIN SENSITIZER, IRRITANT, REPRODUCTIVE HAZARD, MUTAGEN

**TARGET ORGANS**

CARDIOVASCULAR SYSTEM, NERVES, EYES, KIDNEYS, LIVER, BONE MARROW

**GHS CLASSIFICATION**

SKIN IRRITATION (CATEGORY 2)  
SERIOUS EYE DAMAGE (CATEGORY 1)  
SKIN SENSITIZATION (CATEGORY 1)  
REPRODUCTIVE TOXICITY (CATEGORY 2)  
SPECIFIC TARGET ORGAN TOXICITY -SINGLE EXPOSURE (CATEGORY 3)  
CHRONIC AQUATIC TOXICITY (CATEGORY 4)

SIGNAL WORD: DANGER

PICTOGRAM:



**HAZARD STATEMENTS**

H315 CAUSES SKIN IRRITATION

H317 MAY CAUSE AN ALLERGIC SKIN REACTION  
H318 CAUSES SERIOUS EYE DAMAGE  
H335 MAY CAUSE RESPIRATORY IRRITATION  
H361 SUSPECTED OF DAMAGING FERTILITY OR THE UNBORN CHILD  
H413 MAY CAUSE LONG LASTING HARMFUL EFFECTS TO AQUATIC LIFE

**PRECAUTIONARY STATEMENTS**

P261 AVOID BREATHING DUST/FUME/GAS/MIST/VAPORS/SPRAY  
P280 WEAR PROTECTIVE GLOVES/EYE PROTECTION/FACE PROTECTION  
P305/P351/P338 IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES. REMOVE CONTACT LENSES IF APPLICABLE AND EASY TO DO. CONTINUE TO RINSE

**NFPA RATINGS (SCALE 0-4)**

FIRE = 0  
HEALTH = 2  
REACTIVITY = 0

**HMIS RATINGS**

HEALTH = 2  
FIRE = 0  
REACTIVITY = 0

**POTENTIAL HEALTH EFFECTS**

**INHALATION** MAY BE HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION  
**SKIN** MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES SKIN IRRITATION  
**EYES** CAUSES EYE IRRITATION  
**INGESTION** MAY BE HARMFUL IF SWALLOWED

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

FORMULA  $C_{47}H_{51}NO_{14}$   
MOLECULAR WEIGHT 853.92 g/mol

<u>CAS#</u>	<u>EC#</u>	<u>INDEX#</u>	<u>CONCENTRATION</u>
33069-62-4	UNLISTED		

**SECTION 4. FIRST-AID MEASURES**

**GENERAL ADVICE:** CONSULT A PHYSICIAN. SHOW THIS MSDS TO THE DOCTOR. MOVE OUT OF DANGEROUS AREA.  
**AFTER INHALATION:** SUPPLY FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. CONSULT PHYSICIAN



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

**AFTER EYE CONTACT:** 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:** CARBON DIOXIDE, EXTINGUISHING POWDER, ALCOHOL-RESISTANT FOAM OR WATER SPRAY.

### **ADVICE FOR FIREFIGHTERS**

**PROTECTIVE EQUIPMENT:** MOUNT RESPIRATORY PROTECTIVE DEVICE PREVENT CONTACT WITH SKIN AND EYES

**HAZARDOUS COMBUSTION PRODUCTS:** HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS: CARBON OXIDES, NITROGEN OXIDES

## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

**PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:** WEAR PROTECTIVE CLOTHING, RESPIRATOR, CHEMICAL SAFETY GOGGLES, GLOVES. AVOID DUST FORMATION AND AVOID BREATHING DUST, VAPORS, MIST OR GAS. ENSURE ADEQUATE VENTILATION.

**ENVIRONMENTAL PRECAUTIONS:** PREVENT FURTHER LEAKAGE OR SPILLAGE. DO NOT ALLOW TO ENTER DRAINS, SEWERS/SURFACE OR GROUND WATER.

**METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:** PICK UP AND ARRANGE DISPOSAL WITHOUT CREATING DUST. KEEP IN SUITABLE, CLOSED CONTAINERS FOR DISPOSAL. 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:** AVOID CONTACT WITH SKIN AND EYES. AVOID FORMATION OF DUST AND AEROSOLS. ENSURE GOOD VENTILATION/EXHAUSTION AT THE WORKPLACE. WEAR APPROPRIATE PROTECTIVE CLOTHING (SEE SECTION 8). DO NOT RE-USE CONTAINER. EMPLOY NORMAL MEASURES FOR PREVENTIVE FIRE PROTECTION.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES  
STORAGE

**REQUIREMENTS TO BE MET BY STOREROOMS AND RECEPTACLES:** STORE AT -20°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**

CONTAINS NO SUBSTANCES WITH OCCUPATIONAL EXPOSURE LIMIT VALUES

### **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**

WHERE RISK ASSESSMENT SHOWS AIR-PURIFYING RESPIRATORS ARE APPROPRIATE, USE A FULL-FACE PARTICLE RESPIRATOR TYPE N100 (US) OR TYPE P3 (EN 143) RESPIRATOR CARTRIDGES AS A BACKUP TO ENGINEERING CONTROLS. IF THE RESPIRATOR IS THE SOLE MEANS OF PROTECTION, USE A FULL-FACE SUPPLIED AIR RESPIRATOR. USE RESPIRATORS AND COMPONENTS TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR CEN (EU).

#### **PROTECTION OF HANDS**

##### **PROTECTIVE GLOVES.**

THE GLOVE MATERIAL HAS TO BE IMPERMEABLE AND RESISTANT TO THE PRODUCT/SUBSTANCE/PREPARATION. 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:** FACE SHIELD AND TIGHTLY SEALED GOGGLES

**BODY PROTECTION:** PROTECTIVE WORK CLOTHING

**HYGIENE MEASURES:** AVOID CONTACT WITH SKIN, EYES AND CLOTHING. WASH HANDS BEFORE BREAKS AND IMMEDIATELY AFTER HANDLING THE PRODUCT.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

#### GENERAL INFORMATION

FORM: SOLID (LYOPHILIZED POWDER)

pH:	3.0-8.0
MELTING POINT/MELTING RANGE:	MELTING POINT/RANGE: 213°C (415°F) - DEC
BOILING POINT/BOILING RANGE:	NO DATA AVAILABLE
FLASH POINT:	NO DATA AVAILABLE
SELF-IGNITING:	NO DATA AVAILABLE
DANGER OF EXPLOSION:	NO DATA AVAILABLE
DENSITY:	0.200 g/cm <sup>3</sup>
SOLUBILITY IN/MISCIBILITY WITH WATER:	INSOLUBLE

## SECTION 10. STABILITY AND REACTIVITY

### REACTIVITY

#### CHEMICAL STABILITY

STABLE UNDER RECOMMENDED STORAGE CONDITIONS

**THERMAL DECOMPOSITION/CONDITIONS TO BE AVOIDED:** NO DATA AVAILABLE

**POSSIBILITY OF HAZARDOUS REACTIONS:** NO DATA AVAILABLE

**HAZARDOUS DECOMPOSITION PRODUCTS:** HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS: CARBON OXIDES, NITROGEN OXIDES

**THERMAL DECOMPOSITION:**  
100°C

## 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.

#### ACUTE TOXICITY

##### ORAL LD50

NO DATA AVAILABLE

##### INHALATION LC50

##### DERMAL LD50

NO DATA AVAILABLE

#### OTHER INFORMATION ON ACUTE TOXICITY

NO DATA AVAILABLE

**SKIN CORROSION/IRRITATION**

NO DATA AVAILABLE

**SERIOUS EYE DAMAGE/EYE IRRITATION**

NO DATA AVAILABLE

**RESPIRATORY OR SKIN SENSITIZATION**

MAY CAUSE ALLERGIC SKIN REACTION

**GERM CELL MUTAGENICITY**

LABORATORY EXPERIMENTS HAVE SHOWN MUTAGENIC EFFECTS

GENOTOXICITY IN VITRO -HAMSTER- LUNGS

CYTOGENETIC ANALYSIS

GENOTOXICITY IN VIVO -MOUSE- SUBCUTANEOUS

MICRONUCLEUS TEST

**CARCINOGENICITY:** NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS PROBABLE, POSSIBLE OR CONFIRMED HUMAN CARCINOGEN BY IARC, ACGIH, NTP OR OSHA.

**REPRODUCTIVE TOXICITY**

REPRODUCTIVE TOXICIT -RAT- INTRAVENOUS

MATERNAL EFFECTS: OTHER EFFECTS. EFFECTS ON FERTILITY: PRE-IMPLANTATION MORTALITY (e.g., REDUCTION IN NUMBER OF IMPLANTS PER FEMALE; TOTAL NUMBER OF IMPLANTS PER CORPORA LUTEA). EFFECTS ON EMBRYO OR FETUS: EXTRA EMBRYONIC STRUCTURES (e.g., PLACENTA, UMBILICAL CORD).

REPRODUCTIVE TOXICITY -RAT- INTRAVENOUS

EFFECTS ON NEWBORN: GROWTH STATISTICS (e.g., REDUCED WEIGHT GAIN).

EFFECTS ON NEWBORN: BEHAVIORAL. EFFECTS ON NEWBORN: PHYSICAL.

OVEREXPOSURE MAY CAUSE REPRODUCTIVE DISORDER(S) BASED ON TESTS WITH LABORATORY ANIMALS

**TERATOGENICITY**

DEVELOPMENTAL TOXICITY -RAT- INTRAVENOUS

SPECIFIC DEVELOPMENTAL ABNORMALITIES: MUSCULOSKELETAL SYSTEM.

EFFECTS ON NEWBORN: DELAYED EFFECTS

SUSPECTED HUMAN REPRODUCTIVE TOXICANT

**SPECIFIC TARGET ORGAN TOXICITY -SINGLE EXPOSURE (GLOBALLY HARMONIZED SYSTEM)**

INHALATION -MAY CAUSE RESPIRATORY IRRITATION

**SPECIFIC TARGET ORGAN TOXICITY -REPEATED EXPOSURE (GLOBALLY HARMONIZED SYSTEM)**

NO DATA AVAILABLE

**ASPIRATION HAZARD**

NO DATA AVAILABLE

**POTENTIAL HEALTH EFFECTS**

**ON THE SKIN:** MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES SKIN IRRITATION

**SKIN ABSORPTION:** MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES SKIN IRRITATION

**ON THE EYE:** CAUSES EYE IRRITATION

**INHALATION:** MAY BE HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION

**INGESTION:** MAY BE HARMFUL IF SWALLOWED

**SIGNS AND SYMPTOMS OF EXPOSURE**

ALOPECIA, LIVER INJURY MAY OCCUR. KIDNEY INJURY MAY OCCUR. NAUSEA, HEADACHE, VOMITING, BONE MARROW DEPRESSION

**SECTION 12. ECOLOGICAL INFORMATION**

NO DATA AVAILABLE

**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.

**PRODUCT**

BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.

**CONTAMINATED PACKAGING**

DISPOSE OF AS UNUSED PRODUCT.

**SECTION 14. TRANSPORT INFORMATION**

**DOT CLASSIFICATION:**

NOT DANGEROUS GOODS

**IMDG CLASSIFICATION:**

NOT DANGEROUS GOODS

**IATA CLASSIFICATION:**  
NOT DANGEROUS GOODS

## **SECTION 15. REGULATORY INFORMATION**

### **OSHA HAZARDS**

TARGET ORGAN EFFECT, SKIN SENSITIZER, IRRITANT, REPRODUCTIVE HAZARD, MUTAGEN

### **DSL STATUS**

THIS PRODUCT CONTAINS THE FOLLOWING COMPONENTS THAT ARE NOT ON THE CANADIAN DSL NOR NDSL LISTS.

PACLITAXEL CAS#: 33069-62-4

### **UNITED STATES REGULATORY INFORMATION**

**SARA (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986-USA) SECTIONS 302/313**

NO CHEMICALS IN THIS MATERIAL ARE SUBJECT TO THE REPORTING REQUIREMENTS OF SARA TITLE III, SECTION 302.

THIS MATERIAL DOES NOT CONTAIN ANY CHEMICAL COMPONENTS WITH KNOWN CAS NUMBERS THAT EXCEED THE THRESHOLD REPORTING LEVELS ESTABLISHED BY SARA TITLE III, SECTION 313

### **SARA 311/312 HAZARDS**

ACUTE HEALTH HAZARD, CHRONIC HEALTH HAZARD

### **MASSACHUSETTS RIGHT TO KNOW COMPONENTS**

NO COMPONENTS ARE SUBJECT TO THE MASSACHUSETTS RIGHT TO KNOW ACT

### **PENNSYLVANIA RIGHT TO KNOW COMPONENTS**

PACLITAXEL CAS#: 33069-62-4

### **NEW JERSEY RIGHT TO KNOW COMPONENTS**

PACLITAXEL CAS#: 33069-62-4

### **CALIFORNIA PROP. 65 COMPONENTS**

WARNING! THIS PRODUCT CONTAINS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

PACLITAXEL CAS#: 33069-62-4

### **EUROPEAN REGULATIONS**

**HAZARD SYMBOLS:** XN

### **RISK PHRASES**

R40: LIMITED EVIDENCE OF A CARCINOGENIC EFFECT

R41: RISK OF SERIOUS DAMAGE TO EYES

**SAFETY PHRASES**

S26: IN CASE OF CONTACT WITH EYES, RINSES IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE

S36/37/39: WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION

S45: IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY

**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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**MATERIAL SAFETY DATA SHEET**

**SECTION 1. CHEMICAL IDENTIFICATION**

**CATALOG/PRODUCT#:** DMSO

**NAME:** DIMETHYL SULFOXIDE (DMSO)

**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**

COMBUSTIBLE LIQUID, TARGET ORGAN EFFECT

**TARGET ORGANS**

EYES, SKIN

**GHS CLASSIFICATION**

FLAMMABLE LIQUIDS (CATEGORY 4)

**GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS**

PICTOGRAM: NONE  
SIGNAL WORD: WARNING

**HAZARD STATEMENTS**

H227 COMBUSTIBLE LIQUID

**PRECAUTIONARY STATEMENTS**

NONE

**NFPA RATINGS (SCALE 0-4)**

FIRE = 2

HEALTH = 0



REACTIVITY = 0

**HMIS RATINGS**

HEALTH = 0

FIRE = 2

REACTIVITY = 0

CHRONIC HEALTH HAZARD = \*

**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.
AGGRAVATED MEDICAL CONDITON	AVOID CONTACT WITH DMSO SOLUTIONS CONTAIN TOXIC MATERIALS OR MATERIALS WITH UNKNOWN TOXICOLOGICAL PROPERTIES. DMSO IS READILY ABSORBED THROUGH SKIN AND MAY CARRY SUCH MATERIALS INTO THE BODY.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

DIMETHYL SULFOXIDE

FORMULA: C<sub>2</sub>H<sub>6</sub>OS

MOLECULAR WEIGHT: 78.13 g/mol

CAS #: 67-68-5

ECINEC #: 200-664-3

**SECTION 4. FIRST-AID MEASURES**

**AFTER INHALATION:** SUPPLY FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. CONSULT PHYSICIAN.

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

**AFTER EYE CONTACT:** RINSE OPENED EYE FOR AT LEAST 15 MINUTES UNDER RUNNING WATER. CONSULT PHYSICIAN.

**AFTER SWALLOWING:** DO NOT INDUCE VOMITING. WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CONSULT PHYSICIAN.

WASH CONTAMINATED CLOTHING BEFORE REUSE.

**SECTION 5. FIREFIGHTING MEASURES**

**EXTINGUISHING MEDIA**

**SUITABLE EXTINGUISHING AGENTS:** FOR SMALL (INCIPIENT) FIRES, USE CARBON DIOXIDE, DRY CHEMICAL OR ALCOHOL-RESISTENT FOAM. FOR LARGE FIRES, APPLY WATER FROM AS FAR AS POSSIBLE. USE VERY LARGE QUANTITIES

(FLOODING) OF WATER APPLIED AS A MIST OR SPRAY; SOLID STREAMS OF WATER MAY BE INEFFECTIVE. COOL ALL AFFECTED CONTAINERS WITH FLOODING QUANTITIES OF WATER.

**ADVICE FOR FIREFIGHTERS**

**PROTECTIVE EQUIPMENT:** MOUNT RESPIRATORY PROTECTIVE DEVICE  
PREVENT CONTACT WITH SKIN AND EYES.

**HAZARDOUS COMBUSTION PRODUCTS:** HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS: CARBON OXIDES, SULPHUR OXIDES

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

**PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:** WEAR PROTECTIVE CLOTHING, RESPIRATOR, CHEMICAL SAFETY GOGGLES, GLOVES. REMOVE ALL SOURCES OF IGNITION. BEWARE OF VAPORS ACCUMULATING TO FORM EXPLOSIVE CONCENTRATIONS VAPORS CAN ACCUMULATE IN LOW AREAS. AVOID BREATHING VAPORS, MIST OR GAS.

**ENVIRONMENTAL PRECAUTIONS:** DILUTE WITH PLENTY OF WATER. DO NOT ALLOW TO ENTER SEWERS/SURFACE OR GROUND WATER. PREVENT FURTHER LEAKAGE IF SAFE TO DO SO.

**METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:** CONTAIN SPILLAGE AND THEN COLLECT WITH AN ELECTRICALLY PROTECTED VACUUM CLEANER OR BY WET-BRUSHING AND PLACE IN CONTAINER FOR DISPOSAL ACCORDING TO LOCAL REGULATIONS (SEE SECTION 13). KEEP IN SUITABLE, CLOSED CONTAINERS FOR DISPOSAL.

**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. AVOID INHALATION OF VAPOR OR MIST. KEEP AWAY FROM SOURCES OF IGNITION – NO SMOKING. TAKE MEASURES TO PREVENT THE BUILD-UP OF ELECTROSTATIC CHARGE. WEAR APPROPRIATE PROTECTIVE CLOTHING (SEE SECTION 8). DO NOT RE-USE CONTAINER.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES  
STORAGE

**REQUIREMENTS TO BE MET BY STOREROOMS AND RECEPTACLES:** STORE AT ROOM TEMPERATURE. KEEP CONTAINER TIGHTLY CLOSED AND SEALED UNTIL READY FOR USE IN A DRY AND WELL-VENTILATED PLACE. STORE UNDER INERT GAS. HYGROSCOPIC.

**FURTHER INFORMATION ABOUT STORAGE CONDITIONS:** KEEP RECEPTACLE TIGHTLY SEALED.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**COMPONENTS WITH WORKPLACE CONTROL PARAMETERS**

DIMETHYL SULFOXIDE

CAS #: 67-68-5

VALUE: TWA

CONTROL PARAMETERS: 250 ppm

BASIS: USA. WORKPLACE ENVIRONMENTAL EXPOSURE LEVELS (WEEL)

#### **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**

WHERE RISK ASSESSMENT SHOWS AIR-PURIFYING RESPIRATORS ARE APPROPRIATE, USE A FULL-FACE RESPIRATOR WITH MULTI-PURPOSE COMBINATION OR TYPE ABEK RESPIRATOR CARTRIDGES AS A BACK-UP TO ENGINEERING CONTROLS. IF THE RESPIRATOR IS THE SOLE MEANS OF PROTECTION, USE A FULL-FACE SUPPLIED AIR RESPIRATOR.

##### **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 TROUGH 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 OR SAFETY GLASSES WITH SIDE-SHIELDS

**BODY PROTECTION:** PROTECTIVE WORK CLOTHING

## **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

## **INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES**

### **GENERAL INFORMATION**

FORM: LIQUID, CLEAR

#### **SAFETY DATA**

pH: NO DATA AVAILABLE

MELTING POINT/MELTING RANGE: 16-19°C (61-66°F)

BOILING POINT/BOILING RANGE: 189°C (372°F)

FLASH POINT: 87°C (189°F) – CLOSED CUP

IGNITION TEMPERATURE: 301°C (574°F)

AUTOIGNITION TEMPERATURE: NO DATA AVAILABLE

LOWER EXPLOSION LIMIT: 3.5% (V)

UPPER EXPLOSION LIMIT: 42% (V)

VAPOR PRESSURE: 0.55 hPa (0.42 mmHg) AT 20°C (68°F)

DENSITY: 1.1 g/ml

SOLUBILITY IN/MISCIBILITY WITH WATER: FULLY MISCIBLE

### **SECTION 10. STABILITY AND REACTIVITY**

#### **REACTIVITY**

##### **CHEMICAL STABILITY**

STABLE UNDER RECOMMENDED STORAGE CONDITIONS.

**THERMAL DECOMPOSITION/CONDITIONS TO BE AVOIDED:** HEAT, FLAMES, SPARKS, ACID CHLORIDES, PHOSPHORUS HALIDES, STRONG ACIDS, STRONG OXIDIZING AGENTS, STRONG REDUCING AGENTS

**POSSIBILITY OF HAZARDOUS REACTIONS:** NO DATA AVAILABLE

**HAZARDOUS DECOMPOSITION PRODUCTS:** HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS: CARBON OXIDES, SULPHUR OXIDES

### **SECTION 11. TOXICOLOGICAL INFORMATION**

#### **INFORMATION ON TOXICOLOGICAL EFFECTS**

TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL AND TOXICOLOGICAL PROPERTIES OF THIS PRODUCT HAVE NOT BEEN THOROUGHLY INVESTIGATED.

##### **ACUTE TOXICITY**

LD50 ORAL –RAT- 14,500 mg/kg

##### **INHALATION LC50**

LC50 INHALATION –RAT- 4 h -40250 ppm

##### **DERMAL LD50**

LD50 DERMAL –RABBIT- >5,000 mg/kg

**SKIN IRRITATION AND CORROSION**

SKIN –RABBIT- NO SKIN IRRITATION -4 h

**SERIOUS EYE DAMAGE/EYE IRRITATION**

EYES –RABBIT- MILD EYE IRRITATION

**RESPIRATORY OR SKIN SENSITIZATION**

NO DATA AVAILABLE

**GERM CELL MUTAGENICITY**

GENOTOXICITY IN VITRO –MOUSE- LYMPHOCYTE  
CYTOGENETIC ANALYSIS

GENOTOXICITY IN VITRO –MOUSE- LYMPHOCYTE  
MUTATION IN MAMMALIAN SOMATIC CELLS

GENOTOXICITY IN VIVO –RAT- INTRAPERITONEAL  
CYTOGENETIC ANALYSIS

GENOTOXICITY IN VIVO –MOUSE- INTRAPERITONEAL  
DNA DAMAGE

**CARCINOGENICITY**

CARCINOGENICITY –RAT- ORAL  
TUMORIGENIC: EQUIVOCAL TUMORIGENIC AGENT BY RTECS CRITERIA. SKIN  
AND APPENDAGES: OTHER: TUMORS.

CARCINOGENICITY –MOUSE- ORAL  
TUMORIGENIC: EQUIVOCAL TUMORIGENIC AGENT RTECS CRITERIA. LEUKEMIA  
SKIN AND APPENDAGE: OTHER: TUMORS.

NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR  
EQUAL TO 0.1% IS IDENTIFIED AS PROBABLE, POSSIBLE OR CONFIRMED HUMAN  
CARCINOGEN BY IARC, ACGIH, NTP OR OSHA

**REPRODUCTIVE TOXICITY**

REPRODUCTIVE TOXICITY –RAT- INTRAPERITONEAL  
EFFECTS ON FERTILITY: ABORTION

REPRODUCTIVE TOXICITY –RAT- INTRAPERITONEAL  
EFFECTS ON FERTILITY: POST-IMPLANTATION MORTALITY (E.G., DEAD AND/OR  
RESORBED IMPLANTS PER TOTAL NUMBER OF IMPLANTS).

REPRODUCTIVE TOXICITY –RAT- SUBCUTANEOUS  
EFFECTS ON FERTILITY: POST-IMPLANTATION MORTALITY (E.G., DEAD AND/OR  
RESORBED IMPLANTS PER TOTAL NUMBER OF IMPLANTS). EFFECTS ON  
FERTILITY: LITTER SIZE (E.G., # FETUSES PER LITTER; MEASURED BEFORE BIRTH).

REPRODUCTIVE TOXICITY –MOUSE- ORAL  
EFFECTS ON FERTILITY: PRE-IMPLANTATION MORTALITY (E.G., REDUCTION IN  
NUMBER OF IMPLANTS PER FEMALE; TOTAL NUMBER OF IMPLANTS PER

CORPORA LUTEA). EFFECTS ON EMBRYO OR FETUS: FETOTOXICITY (EXCEPT DEATH, E.G., STUNTED FETUS). SPECIFIC DEVELOPMENTAL ABNORMALITIES: MUSCULOSKELETAL SYSTEM

#### **TERATOGENICITY**

DEVELOPMENTAL TOXICITY –MOUSE- INTRAPERITONEAL EFFECTS ON EMBRYO OR FETUS: FETOTOXICITY (EXCEPT DEATH, E.G., STUNTED FETUS). SPECIFIC DEVELOPMENTAL ABNORMALITIES: MUSCULOSKELETAL SYSTEM.

#### **SPECIFIC TARGET ORGAN TOXICITY –SINGLE EXPOSURE (GLOBALLY HARMONIZED SYSTEM)**

NO DATA AVAILABLE

#### **SPECIFIC TARGET ORGAN TOXICITY –REPEATED EXPOSURE (GLOBALLY HARMONIZED SYSTEM)**

NO DATA AVAILABLE

#### **ASPIRATION HAZARD**

NO DATA AVAILABLE

#### **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.
AGGRAVATED MEDICAL CONDITION	AVOID CONTACT WITH DMSO SOLUTIONS CONTAIN TOXIC MATERIALS OR MATERIALS WITH UNKNOWN TOXICOLOGICAL PROPERTIES. DMSO IS READILY ABSORBED THROUGH SKIN AND MAY CARRY SUCH MATERIALS INTO THE BODY.

#### **SIGNS AND SYMPTOMS OF EXPOSURE**

EFFECTS DUE TO INGESTION MAY INCLUDE: NAUSEA, FATIGUE, HEADACHE

#### **SYNERGISTIC EFFECTS**

NO DATA AVAILABLE

### **SECTION 12. ECOLOGICAL INFORMATION**

#### **TOXICITY**

TOXICITY TO FISH	LC50 – PIMEPHALES PROMELAS (FATHEAD MINNOW) – 34,000 mg/l – 96 h
	LC50 – ONCORHYNCHUS MYKISS (RAINBOW TROUT) - 35,000 mg/l -96 h
TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES	EC50 – DAPHNIA PULEX (WATER FLEA) -27,500 mg/l
TOXICITY TO ALGAE	EC50 – LEPOMIS MACROCHIRUS (BLUEGILL) - >400,000 mg/l -96 h

#### **PERSISTENCE AND DEGRADABILITY**

NO DATA AVAILABLE

#### **BIOACCUMULATIVE POTENTIAL**

NO DATA AVAILABLE

#### **MOBILITY IN SOIL**

NO DATA AVAILABLE

#### **PBT AND vPvB ASSESSMENT**

NO DATA AVAILABLE

### **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.

DISPOSE OF CONTAMINATED PACKAGING AS UNUSED PRODUCT

### **SECTION 14. TRANSPORT INFORMATION**

THIS PRODUCT IS SUBJECT TO THE DE MINIMIS EXCEPTIONS FOR DANGEROUS GOODS/HAZARDOUS MATERIALS IN ACCORDANCE WITH THE FOLLOWING REGULATIONS: IATA 2.6.10, ADR 3.5.1.4, AND U.S. DOT 49 CFR 173.4b.

DOT CLASSIFICATION: THIS PRODUCT IS CONSIDERED TO BE NON-HAZARDOUS FOR TRANSPORT.

IATA-DGR CLASSIFICATION: THIS PRODUCT IS CONSIDERED TO BE NON-HAZARDOUS FOR TRANSPORT.

IMDG CLASSIFICATION: THIS PRODUCT IS CONSIDERED TO BE NON-HAZARDOUS FOR TRANSPORT.

## **SECTION 15. REGULATORY INFORMATION**

### **OSHA HAZARDS**

COMBUSTIBLE LIQUID, TARGET ORGAN EFFECT

### **UNITED STATES REGULATORY INFORMATION**

#### **SARA (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986-USA) SECTION 302/304 (40CFR355.30/40CFR355.40):**

NONE OF THE INGREDIENTS IS 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.

#### **SARA 311/312 HAZARDS**

FIRE HAZARD, CHRONIC HEALTH HAZARD

#### **PA AND NJ RIGHT TO KNOW COMPONENTS**

DIMETHYL SULFOXIDE

CAS #: 67-68-5

#### **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.

#### **CANADA REGULATORY INFORMATION**

WHMIS CLASSIFICATION: NOT CONTROLLED 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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