

## MSDS COVERSHEET

CATALOG # BK165

### SIGNAL-SEEKER SUMO 1 DETECTION KIT

PART/CATALOG #	DESCRIPTION
BLST01	BLASTR™ Lysis Buffer
BDB01	BLASTR™ Dilution Buffer
BWB02	BLASTR-2™ Wash Buffer
NEM09BB	De-ubiquitination/SUMOylation inhibitor (N-ethylmaleimide and TPEN)
ASM11-Beads	SUMO1 Affinity Beads
GL50	Precision Red Advanced Protein Assay
PIC02	Protease Inhibitor Cocktail
CIG03-Beads	IP Control Beads
ASM01-S	Anti-SUMO-1 Antibody
BEB01	Bead Elution Buffer
DMSO	DMSO
CLRA	Chemiluminescent Detection Reagent A
CLRB	Chemiluminescent Detection Reagent B
SPN22 (no MSDS needed)	Spin Columns Collection Tubes
BLR02 (no MSDS needed)	BLASTR™ Filters

Notice: To the best of our knowledge, the information contained herein is accurate. However, neither the supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

**MATERIAL SAFETY DATA SHEET**

**SECTION 1. CHEMICAL IDENTIFICATION**

**CATALOG/PRODUCT#:** BLST01

**NAME:** BLASTR™ LYSIS 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 AND CANADA: 1-800-535-5053  
OUTSIDE USA AND CANADA: +1 352-323-3500 (COLLECT CALLS ACCEPTED)

**SECTION 2. HAZARDS IDENTIFICATION**

**CLASSIFICATION OF THE SUBSTANCE OR MIXTURE**

NOT A HAZARDOUS SUBSTANCE OR MIXTURE. <1% HAZARDOUS MATERIAL

**GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS**

NOT A HAZARDOUS SUBSTANCE OR MIXTURE. <1% HAZARDOUS MATERIAL.

**HAZARDS NOT OTHERWISE CLASSIFIED (HNOC) OR NOT COVERED BY GHS**

NONE

**HMIS CLASSIFICATION**

HEALTH HAZARD: 0  
FLAMMABILITY: 0  
PHYSICAL HAZARDS: 0

**NFPA RATING**

HEALTH HAZARD: 0  
FIRE: 0  
REACTIVITY HAZARD: 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**

**THE COMPONENTS OF THE LYSIS BUFFER ARE PROPRIETARY.**

NO DANGEROUS OR HAZARDOUS MATERIALS >1%

### **SECTION 4. FIRST-AID MEASURES**

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

**AFTER SKIN CONTACT:** 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.

**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**

#### **CONDITIONS OF FLAMMABILITY**

NOT FLAMMABLE OR COMBUSTIBLE

#### **EXTINGUISHING MEDIA**

**SUITABLE EXTINGUISHING AGENTS:** USE WATER SPRAY, ALCOHOL-RESISTANT FOAM, DRY CHEMICAL OR CARBON DIOXIDE

#### **ADVICE FOR FIREFIGHTERS**

**PROTECTIVE EQUIPMENT:** MOUNT RESPIRATORY PROTECTIVE DEVICE FOR FIREFIGHTING IF NECESSARY. 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:** AVOID DUST FORMATION. AVOID BREATHING VAPORS, MIST OR GAS. ENSURE ADEQUATE VENTILATION.

**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. DISCHARGE INTO THE ENVIRONMENT MUST BE AVOIDED.

**METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:** IN LYOPHILIZED FORM, SWEEP UP AND SHOVEL. IN LIQUID FORM, SOAK UP WITH INERT ABSORBENT MATERIAL. 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 CONTACT WITH SKIN AND EYES. AVOID INHALATION OF VAPOR OR MIST. 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 4°C. KEEP CONTAINER TIGHTLY CLOSED AND SEALED UNTIL READY FOR USE IN A DRY AND WELL-VENTILATED PLACE. CONTAINERS WHICH ARE OPENED MUST BE CAREFULLY RESEALED AND KEPT UPRIGHT TO PREVENT LEAKAGE.

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

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

COMPONENTS	CAS#	VALUE	CONTROL PARAMETERS	BASIS
PROPRIETARY	NA	TWA	10 mg/m <sup>3</sup>	USA. WORKPLACE ENVIRONMENTAL EXPOSURE LEVELS (WEEL)

### EXPOSURE CONTROLS

#### APPROPRIATE ENGINEERING CONTROLS

GENERAL INDUSTRIAL HYGIENE PRACTICE

#### 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

### PERSONAL PROTECTIVE EQUIPMENT

#### BREATHING EQUIPMENT

RESPIRATORY PROTECTION IS NOT REQUIRED. WHERE PROTECTION FROM NUISANCE LEVELS OF DUST ARE DESIRED, USE TYPE N95 (US) OR TYPE P1 (EN 143) DUST MASKS. USE RESPIRATORS AND COMPONENTS TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR CEN (EU).

**EYE PROTECTION:** USE EQUIPMENT FOR EYE PROTECTION TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR EN 166 (EU).

**SKIN PROTECTION:** HANDLE WITH 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. USE PROPER GOVE 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.

#### **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

**BODY PROTECTION:** PROTECTIVE WORK CLOTHING. CHOOSE BODY PROTECTION IN RELATION TO ITS TYPE, TO THE CONCENTRATION AND AMOUNT OF DANGEROUS SUBSTANCES, AND TO THE SPECIFIC WORK-PLACE. THE TYPE OF PROTECTIVE EQUIPMENT MUST BE SELECTED ACCORDING TO THE CONCENTRATION AND AMOUNT OF THE DANGEROUS SUBSTANCE AT THE SPECIFIC WORKPLACE.

#### **CONTROL OF ENVIRONMENTAL EXPOSURE**

DO NOT LET PRODUCT ENTER DRAINS

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

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

##### **GENERAL INFORMATION**

FORM: LYOPHILIZED

COLOR: WHITE

ODOR: NO DATA AVAILABLE

##### **SAFETY DATA**

pH: NO DATA AVAILABLE

MELTING POINT/MELTING RANGE: NO DATA AVAILABLE

BOILING POINT/BOILING RANGE: NO DATA AVAILABLE

FLASH POINT: NO DATA AVAILABLE

IGNITION TEMPERATURE: NO DATA AVAILABLE

AUTOIGNITION TEMPERATURE: NO DATA AVAILABLE

LOWER EXPLOSION LIMIT: NO DATA AVAILABLE

UPPER EXPLOSION LIMIT: NO DATA AVAILABLE

VAPOR PRESSURE: NO DATA AVAILABLE  
DENSITY: NO DATA AVAILABLE  
SOLUBILITY IN/MISCIBILITY WITH WATER: NO DATA AVAILABLE

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

### **REACTIVITY**

#### **CHEMICAL STABILITY**

STABLE UNDER RECOMMENDED STORAGE CONDITIONS.

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

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

**HAZARDOUS DECOMPOSITION PRODUCTS:** NO DATA AVAILABLE. IN EVENT OF FIRE, SEE SECTION 5

## **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 : NO DATA AVAILABLE

#### **INHALATION LC50**

LC50 INHALATION: NO DATA AVAILABLE

#### **DERMAL LD50**

LD50 DERMAL: NO DATA AVAILABLE

#### **SKIN IRRITATION AND CORROSION**

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**

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**

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

**ASPIRATION HAZARD**

NO DATA AVAILABLE

**SIGNS AND SYMPTOMS OF EXPOSURE**

NO DATA AVAILABLE

**SYNERGISTIC EFFECTS**

NO DATA AVAILABLE

**SECTION 12. ECOLOGICAL INFORMATION**

**TOXICITY**

NO DATA AVAILABLE

**PERSISTENCE AND DEGRADABILITY**

NO DATA AVAILABLE

**BIOACCUMULATIVE POTENTIAL**

NO DATA AVAILABLE

**MOBILITY IN SOIL**

NO DATA AVAILABLE

## **PBT AND vPvB ASSESSMENT**

NO DATA AVAILABLE

## **OTHER ADVERSE EFFECTS**

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. DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.

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**

### **UNITED STATES REGULATORY INFORMATION**

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

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

#### **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**

NO SARA HAZARDS

**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#:** BDB01

**NAME:** BLASTR™ DILUTION BUFFER

**USE:** LABORATORY CHEMICALS

**MANUFACTURER/SUPPLIER:**

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

**CLASSIFICATION OF THE SUBSTANCE OR MIXTURE**

NOT A HAZARDOUS SUBSTANCE OR MIXTURE. ≤1% HAZARDOUS MATERIAL

**GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS**

NOT A HAZARDOUS SUBSTANCE OR MIXTURE. ≤1% HAZARDOUS MATERIAL.

**HAZARDS NOT OTHERWISE CLASSIFIED (HNOC) OR NOT COVERED BY GHS**

NONE

**HMIS CLASSIFICATION**

HEALTH HAZARD: 0  
FLAMMABILITY: 0  
PHYSICAL HAZARDS: 0

**NFPA RATING**

HEALTH HAZARD: 0  
FIRE: 0  
REACTIVITY HAZARD: 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**

**THE COMPONENTS OF THE DILUTION BUFFER ARE PROPRIETARY.**

NO DANGEROUS OR HAZARDOUS MATERIALS >1%

### **SECTION 4. FIRST-AID MEASURES**

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

**AFTER SKIN CONTACT:** 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.

**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**

#### **CONDITIONS OF FLAMMABILITY**

NOT FLAMMABLE OR COMBUSTIBLE

#### **EXTINGUISHING MEDIA**

**SUITABLE EXTINGUISHING AGENTS:** USE WATER SPRAY, ALCOHOL-RESISTANT FOAM, DRY CHEMICAL OR CARBON DIOXIDE

#### **ADVICE FOR FIREFIGHTERS**

**PROTECTIVE EQUIPMENT:** MOUNT RESPIRATORY PROTECTIVE DEVICE FOR FIREFIGHTING IF NECESSARY. 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:** AVOID DUST FORMATION. AVOID BREATHING VAPORS, MIST OR GAS. ENSURE ADEQUATE VENTILATION.

**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. DISCHARGE INTO THE ENVIRONMENT MUST BE AVOIDED.

**METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:** IN LYOPHILIZED FORM, SWEEP UP AND SHOVEL. IN LIQUID FORM, SOAK UP WITH INERT ABSORBENT MATERIAL. 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 CONTACT WITH SKIN AND EYES. AVOID INHALATION OF VAPOR OR MIST. 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 4°C. KEEP CONTAINER TIGHTLY CLOSED AND SEALED UNTIL READY FOR USE IN A DRY AND WELL-VENTILATED PLACE. CONTAINERS WHICH ARE OPENED MUST BE CAREFULLY RESEALED AND KEPT UPRIGHT TO PREVENT LEAKAGE.

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

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

### **COMPONENTS WITH WORKPLACE CONTROL PARAMETERS**

CONTAINS NO SUBSTANCES WITH OCCUPATIONAL EXPOSURE LIMIT VALUES

### **EXPOSURE CONTROLS**

#### **APPROPRIATE ENGINEERING CONTROLS**

GENERAL INDUSTRIAL HYGIENE PRACTICE

#### **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

### **PERSONAL PROTECTIVE EQUIPMENT**

#### **BREATHING EQUIPMENT**

RESPIRATORY PROTECTION IS NOT REQUIRED. WHERE PROTECTION FROM NUISANCE LEVELS OF DUST ARE DESIRED, USE TYPE N95 (US) OR TYPE P1 (EN 143) DUST MASKS. USE RESPIRATORS AND COMPONENTS TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR CEN (EU).

**EYE PROTECTION:** USE EQUIPMENT FOR EYE PROTECTION TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR EN 166 (EU).

**SKIN PROTECTION:** HANDLE WITH 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. USE PROPER GOVE 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.

#### **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

**BODY PROTECTION:** PROTECTIVE WORK CLOTHING. CHOOSE BODY PROTECTION IN RELATION TO ITS TYPE, TO THE CONCENTRATION AND AMOUNT OF DANGEROUS SUBSTANCES, AND TO THE SPECIFIC WORK-PLACE. THE TYPE OF PROTECTIVE EQUIPMENT MUST BE SELECTED ACCORDING TO THE CONCENTRATION AND AMOUNT OF THE DANGEROUS SUBSTANCE AT THE SPECIFIC WORKPLACE.

#### **CONTROL OF ENVIRONMENTAL EXPOSURE**

DO NOT LET PRODUCT ENTER DRAINS

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

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

##### **GENERAL INFORMATION**

FORM: LYOPHILIZED

COLOR: WHITE

ODOR: NO DATA AVAILABLE

##### **SAFETY DATA**

pH: NO DATA AVAILABLE

MELTING POINT/MELTING RANGE: NO DATA AVAILABLE

BOILING POINT/BOILING RANGE: NO DATA AVAILABLE

FLASH POINT: NO DATA AVAILABLE

IGNITION TEMPERATURE: NO DATA AVAILABLE

AUTOIGNITION TEMPERATURE: NO DATA AVAILABLE

LOWER EXPLOSION LIMIT: NO DATA AVAILABLE

UPPER EXPLOSION LIMIT: NO DATA AVAILABLE

VAPOR PRESSURE: NO DATA AVAILABLE  
DENSITY: NO DATA AVAILABLE  
SOLUBILITY IN/MISCIBILITY WITH WATER: NO DATA AVAILABLE

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

### **REACTIVITY**

#### **CHEMICAL STABILITY**

STABLE UNDER RECOMMENDED STORAGE CONDITIONS.

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

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

**HAZARDOUS DECOMPOSITION PRODUCTS:** NO DATA AVAILABLE. IN EVENT OF FIRE, SEE SECTION 5

## **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 : NO DATA AVAILABLE

#### **INHALATION LC50**

LC50 INHALATION: NO DATA AVAILABLE

#### **DERMAL LD50**

LD50 DERMAL: NO DATA AVAILABLE

#### **SKIN IRRITATION AND CORROSION**

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**

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**

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

**ASPIRATION HAZARD**

NO DATA AVAILABLE

**SIGNS AND SYMPTOMS OF EXPOSURE**

NO DATA AVAILABLE

**SYNERGISTIC EFFECTS**

NO DATA AVAILABLE

**SECTION 12. ECOLOGICAL INFORMATION**

**TOXICITY**

NO DATA AVAILABLE

**PERSISTENCE AND DEGRADABILITY**

NO DATA AVAILABLE

**BIOACCUMULATIVE POTENTIAL**

NO DATA AVAILABLE

**MOBILITY IN SOIL**

NO DATA AVAILABLE

## **PBT AND vPvB ASSESSMENT**

NO DATA AVAILABLE

## **OTHER ADVERSE EFFECTS**

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. DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.

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**

### **UNITED STATES REGULATORY INFORMATION**

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

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

#### **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**  
NO SARA HAZARDS

#### **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#:** BWB01

**NAME:** BLASTR™ WASH 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 AND CANADA: 1-800-535-5053  
OUTSIDE USA AND CANADA: +1 352-323-3500 (COLLECT CALLS ACCEPTED)

**SECTION 2. HAZARDS IDENTIFICATION**

**CLASSIFICATION OF THE SUBSTANCE OR MIXTURE**

NOT A HAZARDOUS SUBSTANCE OR MIXTURE. <1% HAZARDOUS MATERIAL

**GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS**

NOT A HAZARDOUS SUBSTANCE OR MIXTURE. <1% HAZARDOUS MATERIAL.

**HAZARDS NOT OTHERWISE CLASSIFIED (HNOC) OR NOT COVERED BY GHS**

NONE

**HMIS CLASSIFICATION**

HEALTH HAZARD: 0  
FLAMMABILITY: 0  
PHYSICAL HAZARDS: 0

**NFPA RATING**

HEALTH HAZARD: 0  
FIRE: 0  
REACTIVITY HAZARD: 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**

**THE COMPONENTS OF THE WASH BUFFER ARE PROPRIETARY.**

NO DANGEROUS OR HAZARDOUS MATERIALS >1%

### **SECTION 4. FIRST-AID MEASURES**

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

**AFTER SKIN CONTACT:** 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.

**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**

#### **CONDITIONS OF FLAMMABILITY**

NOT FLAMMABLE OR COMBUSTIBLE

#### **EXTINGUISHING MEDIA**

**SUITABLE EXTINGUISHING AGENTS:** USE WATER SPRAY, ALCOHOL-RESISTANT FOAM, DRY CHEMICAL OR CARBON DIOXIDE

#### **ADVICE FOR FIREFIGHTERS**

**PROTECTIVE EQUIPMENT:** MOUNT RESPIRATORY PROTECTIVE DEVICE FOR FIREFIGHTING IF NECESSARY. 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:** AVOID DUST FORMATION. AVOID BREATHING VAPORS, MIST OR GAS. ENSURE ADEQUATE VENTILATION.

**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. DISCHARGE INTO THE ENVIRONMENT MUST BE AVOIDED.

**METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:** IN LYOPHILIZED FORM, SWEEP UP AND SHOVEL. IN LIQUID FORM, SOAK UP WITH INERT ABSORBENT MATERIAL. 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 CONTACT WITH SKIN AND EYES. AVOID INHALATION OF VAPOR OR MIST. 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 4°C. KEEP CONTAINER TIGHTLY CLOSED AND SEALED UNTIL READY FOR USE IN A DRY AND WELL-VENTILATED PLACE. CONTAINERS WHICH ARE OPENED MUST BE CAREFULLY RESEALED AND KEPT UPRIGHT TO PREVENT LEAKAGE.

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

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

### **COMPONENTS WITH WORKPLACE CONTROL PARAMETERS**

CONTAINS NO SUBSTANCES WITH OCCUPATIONAL EXPOSURE LIMIT VALUES

### **EXPOSURE CONTROLS**

#### **APPROPRIATE ENGINEERING CONTROLS**

GENERAL INDUSTRIAL HYGIENE PRACTICE

#### **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

### **PERSONAL PROTECTIVE EQUIPMENT**

#### **BREATHING EQUIPMENT**

RESPIRATORY PROTECTION IS NOT REQUIRED. WHERE PROTECTION FROM NUISANCE LEVELS OF DUST ARE DESIRED, USE TYPE N95 (US) OR TYPE P1 (EN 143) DUST MASKS. USE RESPIRATORS AND COMPONENTS TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR CEN (EU).

**EYE PROTECTION:** USE EQUIPMENT FOR EYE PROTECTION TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR EN 166 (EU).

**SKIN PROTECTION:** HANDLE WITH 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. USE PROPER GOVE 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.

#### **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

**BODY PROTECTION:** PROTECTIVE WORK CLOTHING. CHOOSE BODY PROTECTION IN RELATION TO ITS TYPE, TO THE CONCENTRATION AND AMOUNT OF DANGEROUS SUBSTANCES, AND TO THE SPECIFIC WORK-PLACE. THE TYPE OF PROTECTIVE EQUIPMENT MUST BE SELECTED ACCORDING TO THE CONCENTRATION AND AMOUNT OF THE DANGEROUS SUBSTANCE AT THE SPECIFIC WORKPLACE.

#### **CONTROL OF ENVIRONMENTAL EXPOSURE**

DO NOT LET PRODUCT ENTER DRAINS

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

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

##### **GENERAL INFORMATION**

FORM: LYOPHILIZED

COLOR: WHITE

ODOR: NO DATA AVAILABLE

##### **SAFETY DATA**

pH: NO DATA AVAILABLE

MELTING POINT/MELTING RANGE: NO DATA AVAILABLE

BOILING POINT/BOILING RANGE: NO DATA AVAILABLE

FLASH POINT: NO DATA AVAILABLE

IGNITION TEMPERATURE: NO DATA AVAILABLE

AUTOIGNITION TEMPERATURE: NO DATA AVAILABLE

LOWER EXPLOSION LIMIT: NO DATA AVAILABLE

UPPER EXPLOSION LIMIT: NO DATA AVAILABLE

VAPOR PRESSURE: NO DATA AVAILABLE  
DENSITY: NO DATA AVAILABLE  
SOLUBILITY IN/MISCIBILITY WITH WATER: NO DATA AVAILABLE

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

### **REACTIVITY**

#### **CHEMICAL STABILITY**

STABLE UNDER RECOMMENDED STORAGE CONDITIONS.

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

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

**HAZARDOUS DECOMPOSITION PRODUCTS:** NO DATA AVAILABLE. IN EVENT OF FIRE, SEE SECTION 5

## **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 : NO DATA AVAILABLE

#### **INHALATION LC50**

LC50 INHALATION: NO DATA AVAILABLE

#### **DERMAL LD50**

LD50 DERMAL: NO DATA AVAILABLE

#### **SKIN IRRITATION AND CORROSION**

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**

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**

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

**ASPIRATION HAZARD**

NO DATA AVAILABLE

**SIGNS AND SYMPTOMS OF EXPOSURE**

NO DATA AVAILABLE

**SYNERGISTIC EFFECTS**

NO DATA AVAILABLE

**SECTION 12. ECOLOGICAL INFORMATION**

**TOXICITY**

NO DATA AVAILABLE

**PERSISTENCE AND DEGRADABILITY**

NO DATA AVAILABLE

**BIOACCUMULATIVE POTENTIAL**

NO DATA AVAILABLE

**MOBILITY IN SOIL**

NO DATA AVAILABLE

## **PBT AND vPvB ASSESSMENT**

NO DATA AVAILABLE

## **OTHER ADVERSE EFFECTS**

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. DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.

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**

### **UNITED STATES REGULATORY INFORMATION**

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

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

#### **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**  
NO SARA HAZARDS

#### **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#:** NEM09BB

**NAME:** DE-UBIQUITINATION/SUMOYLATION INHIBITOR (N-ETHYLMALEIMIDE and TPEN)

**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**

**CLASSIFICATION OF THE SUBSTANCE OR MIXTURE**

GHS CLASSIFICATION IN ACCORDANCE WITH 29 CFR 1910 (OSHA HCS)

ACUTE TOXICITY, ORAL (CATEGORY 2), H300

ACUTE TOXICITY, DERMAL (CATEGORY 3), H311

SKIN CORROSION (CATEGORY 1B), H314

SERIOUS EYE DAMAGE (CATEGORY 1), H318

SKIN SENSITIZATION (CATEGORY 1), H317

**GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS**

**PICTOGRAM**



**SIGNAL WORD**

DANGER

**HAZARD STATEMENT(S)**

H300 FATAL IF SWALLOWED  
H311 TOXIC IN CONTACT WITH SKIN  
H314 CAUSES SEVERE SKIN BURNS AND EYE DAMAGE  
H317 MAY CAUSE AN ALLERGIC SKIN REACTION

PRECAUTIONARY STATEMENT(S)

P260 DO NOT BREATHE DUST OR MIST  
P264 WASH SKIN THOROUGHLY AFTER HANDLING  
P270 DO NOT EAT, DRINK OR SMOKE WHEN USING THIS PRODUCT  
P272 CONTAMINATED WORK CLOTHING SHOULD NOT BE ALLOWED OUT OF THE WORKPLACE  
P280 WEAR PROTECTIVE GLOVES/PROTECTIVE CLOTHING/EYE PROTECTION/FACE PROTECTION  
P301+P310 IF SWALLOWED, IMMEDIATELY CALL A POISON CENTER OR DOCTOR/PHYSICIAN  
P301+P330+P331 IF SWALLOWED, RINSE MOUTH. DO NOT INDUCE VOMITING  
P303+P361+P353 IF ON SKIN OR HAIR, REMOVE IMMEDIATELY ALL CONTAMINATED CLOTHING. RINSE SKIN WITH WATER/SHOWER  
P304+P340 IF INHALED, REMOVE PERSON 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  
P310 IMMEDIATELY CALL A POISON CENTER OR DOCTOR/PHYSICIAN  
P333+P313 IF SKIN IRRITATION OR RASH OCCURS, GET MEDICAL ADVICE/ATTENTION  
P361 REMOVE/TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING  
P363 WASH CONTAMINATED CLOTHING BEFORE REUSE

P405 STORE LOCKED UP

P501 DISPOSE OF CONTENTS/CONTAINER TO AN APPROVED WASTE DISPOSAL PLANT

**HMIS CLASSIFICATION**

HEALTH HAZARD: 3  
FLAMMABILITY: 2  
PHYSICAL HAZARDS: 1  
CHRONIC HEALTH HAZARD:

**NFPA RATING**

HEALTH HAZARD: 3  
FIRE: 2  
REACTIVITY HAZARD: 1

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

**SUBSTANCES**

FORMULA	C <sub>6</sub> H <sub>7</sub> NO <sub>2</sub>
MOLECULAR WEIGHT	125.13 g/mol
CAS #	128-53-0
EC #	204-892-4

**HAZARDOUS COMPONENTS**

N-ETHYLMALEIMIDE

ACUTE TOX 2; ACUTE TOX 3; SKIN CORR. 1B; EYE DAM. 1; SKIN SENS. 1; H300, H311, H314, H317

**SECTION 4. FIRST-AID MEASURES**

**GENERAL ADVICE:** MOVE OUT OF DANGEROUS AREA. CONSULT A PHYSICIAN. SHOW THIS SAFETY DATA SHEET TO PHYSICIAN

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

**AFTER SKIN CONTACT:** TAKE OFF CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH SKIN WITH SOAP AND RINSE WITH COPIOUS AMOUNTS OF WATER. TRANSPORT PERSON TO HOSPITAL IMMEDIATELY. CONSULT PHYSICIAN.

**AFTER EYE CONTACT:** RINSE OPENED EYE FOR AT LEAST 15 MINUTES UNDER RUNNING WATER. CONSULT PHYSICIAN. CONTINUE RINSING EYES DURING TRANSPORT TO HOSPITAL

**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**

### **CONDITIONS OF FLAMMABILITY**

NOT FLAMMABLE OR COMBUSTIBLE

### **EXTINGUISHING MEDIA**

**SUITABLE EXTINGUISHING AGENTS:** USE WATER SPRAY, ALCOHOL-RESISTANT FOAM, DRY CHEMICAL OR CARBON DIOXIDE

### **ADVICE FOR FIREFIGHTERS**

**PROTECTIVE EQUIPMENT:** MOUNT RESPIRATORY PROTECTIVE DEVICE FOR FIREFIGHTING IF NECESSARY. PREVENT CONTACT WITH SKIN AND EYES.

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

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

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

**PROCEDURES:** USE PERSONAL PROTECTIVE EQUIPMENT. AVOID DUST FORMATION. AVOID BREATHING VAPORS, MIST OR GAS. ENSURE ADEQUATE VENTILATION.

**ENVIRONMENTAL PRECAUTIONS:** PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO NOT ALLOW TO ENTER SEWERS/SURFACE OR GROUND WATER. DISCHARGE INTO THE ENVIRONMENT MUST BE AVOIDED.

**METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:** IN LYOPHILIZED FORM, SWEEP UP AND SHOVEL. IN LIQUID FORM, SOAK UP WITH INERT ABSORBENT MATERIAL. KEEP IN SUITABLE, CLOSED CONTAINERS FOR DISPOSAL. DISPOSE OF AS HAZARDOUS WASTE.

**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 INHALATION OF VAPOR OR MIST. 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 4°C. KEEP CONTAINER TIGHTLY CLOSED AND SEALED UNTIL READY FOR USE IN A DRY AND WELL-VENTILATED PLACE. CONTAINERS WHICH ARE OPENED MUST BE CAREFULLY RESEALED AND KEPT UPRIGHT TO PREVENT LEAKAGE.

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

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

## **COMPONENTS WITH WORKPLACE CONTROL PARAMETERS**

CONTAINS NO SUBSTANCES WITH OCCUPATIONAL EXPOSURE LIMIT VALUES

## **EXPOSURE CONTROLS**

### **APPROPRIATE ENGINEERING CONTROLS**

GENERAL INDUSTRIAL HYGIENE PRACTICE

### **GENERAL PROTECTIVE AND HYGIENIC MEASURES**

KEEP AWAY FROM FOODSTUFFS, BEVERAGES AND FEED

WASH HANDS BEFORE BREAKS AND AT THE END OF WORK AND IMMEDIATELY AFTER HANDLING PRODUCT

IMMEDIATELY REMOVE ALL SOILED AND CONTAMINATED CLOTHING

AVOID CONTACT WITH THE EYES AND SKIN AND CLOTHING

## **PERSONAL PROTECTIVE EQUIPMENT**

### **BREATHING EQUIPMENT**

WHERE RISK ASSESSMENT SHOWS AIR-PURIFYING RESPIRATORS ARE APPROPRIATE USE A FULL-FACE RESPIRATOR WITH MULTI-PURPOSE COMBINATION (US) OR TYPE ABEK (EN 14387) RESPIRATOR CARTRIDGES AS A BACKUP. 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).

**EYE PROTECTION:** USE EQUIPMENT FOR EYE PROTECTION TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR EN 166 (EU). TIGHTLY FITTING SAFETY GOOGLES OR GLASSES OR FACESHIELD.

**SKIN PROTECTION:** HANDLE WITH 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. USE PROPER GOVE 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.

### **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

**BODY PROTECTION:** PROTECTIVE WORK CLOTHING. CHOOSE BODY PROTECTION IN RELATION TO ITS TYPE, TO THE CONCENTRATION AND AMOUNT OF DANGEROUS SUBSTANCES, AND TO THE SPECIFIC WORK-PLACE. THE TYPE OF PROTECTIVE EQUIPMENT MUST BE SELECTED ACCORDING TO THE CONCENTRATION AND AMOUNT OF THE DANGEROUS SUBSTANCE AT THE SPECIFIC WORKPLACE.

**CONTROL OF ENVIRONMENTAL EXPOSURE**

DO NOT LET PRODUCT ENTER DRAINS. DISCHARGE INTO THE ENVIRONMENT MUST BE AVOIDED.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

**INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES**

**GENERAL INFORMATION**

FORM: LYOPHILIZED

COLOR:

ODOR: NO DATA AVAILABLE

**SAFETY DATA**

pH: NO DATA AVAILABLE

MELTING POINT/MELTING RANGE: NO DATA AVAILABLE

BOILING POINT/BOILING RANGE: NO DATA AVAILABLE

FLASH POINT: NO DATA AVAILABLE

IGNITION TEMPERATURE: NO DATA AVAILABLE

AUTOIGNITION TEMPERATURE: NO DATA AVAILABLE

LOWER EXPLOSION LIMIT: NO DATA AVAILABLE

UPPER EXPLOSION LIMIT: NO DATA AVAILABLE

VAPOR PRESSURE: NO DATA AVAILABLE

DENSITY: NO DATA AVAILABLE

SOLUBILITY IN/MISCIBILITY WITH WATER: NO DATA AVAILABLE

**SECTION 10. STABILITY AND REACTIVITY**

**REACTIVITY**

**CHEMICAL STABILITY**

STABLE UNDER RECOMMENDED STORAGE CONDITIONS. MAY DISCOLOR ON EXPOSURE TO LIGHT.

**CONDITIONS TO BE AVOIDED:** NO DATA AVAILABLE

**INCOMPATIBLE MATERIALS:** STRONG OXIDIZING AGENTS, STRONG ACIDS, STRONG BASES

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

**HAZARDOUS DECOMPOSITION PRODUCTS:** NO DATA AVAILABLE. IN EVENT OF FIRE, SEE SECTION 5

## **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 – 25 mg/kg

REMARKS: BEHAVIORAL: SOMNOLENCE (GENERAL DEPRESSED ACTIVITY).

BEHAVIORAL: CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD

#### **INHALATION LC50**

LC50 INHALATION: NO DATA AVAILABLE

#### **DERMAL LD50**

LD50 DERMAL – GUINEA PIG – 500 mg/kg

#### **SKIN IRRITATION AND CORROSION**

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**

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**

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

**ASPIRATION HAZARD**

NO DATA AVAILABLE

**SIGNS AND SYMPTOMS OF EXPOSURE**

NO DATA AVAILABLE

**SYNERGISTIC EFFECTS**

NO DATA AVAILABLE

**SECTION 12. ECOLOGICAL INFORMATION**

**TOXICITY**

NO DATA AVAILABLE

**PERSISTENCE AND DEGRADABILITY**

NO DATA AVAILABLE

**BIOACCUMULATIVE POTENTIAL**

NO DATA AVAILABLE

**MOBILITY IN SOIL**

NO DATA AVAILABLE

**PBT AND vPvB ASSESSMENT**

NO DATA AVAILABLE

**OTHER ADVERSE EFFECTS**

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. DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.

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**

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

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

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

##### **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 ACUTE HEALTH HAZARD**

##### **MASSACHUSETTS RIGHT TO KNOW COMPONENTS NONE**

##### **PENNSYLVANIA AND NEW JERSEY RIGHT TO KNOW COMPONENTS N-ETHYLMALEIMIDE CAS # 128-53-0**

**CALIFORNIA PROP. 65 COMPONENTS**

THIS PRODUCT DOES NOT CONTAIN ANY CHEMICALS KNOWN TO THE 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#:** ASM11-BEADS

**NAME:** SUMO1 AFFINITY BEADS

**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

NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.

NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS. HANDLING AND/OR PROCESSING OF THIS MATERIAL MAY GENERATE A DUST WHICH CAN CAUSE

MECHANICAL IRRITATION OF THE EYES, SKIN, NOSE AND THROAT. AVOID PROLONGED CONTACT WITH EYES, SKIN AND CLOTHING.

**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**

PROTEIN	CAS#: NONE EINECS#: NONE	≥90%
SUCROSE	CAS#: 57-50-1 EINECS#: 200-334-9	5%
DEXTRAN	CAS#: 9004-54-0	1%
PIPES (PIPERAZINE-N, N-BIS(2-ETHANESULFONIC ACID), SESQUISODIUM SALT	CAS#: 100037-69-2 EINECS#: UNLISTED	<1%
PROTEIN G BEADS	CAS#: NONE EINECS#: NONE	

**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. THEN 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

**HAZARDOUS COMBUSTION PRODUCTS:** 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 DUST. AVOID BREATHING VAPORS, MIST, OR GAS. ENSURE ADEQUATE VENTILATION.

**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:** AFTER RECONSTITUTION, ABSORB WITH LIQUID-BINDING MATERIAL (SAND, DIATOMITE, ACID BINDERS, UNIVERSAL BINDERS, SAWDUST). IN LYOPHILIZED STATE, SWEEP UP POWDER. AVOID BREATHING DUST. 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. AVOID GENERATING DUST. AVOID BREATHING DUST.

**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: TYPE FILTER P1 (EU EN 143) OF TYPE P95 (US)  
DO NOT BREATHE VAPORS. 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: 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: PRODUCT IS NOT SELF-IGNITING

DANGER OF EXPLOSION: PRODUCT IS NOT EXPLOSIVE.

DENSITY: NO DATA AVAILABLE

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:** NO DATA AVAILABLE

**MATERIALS TO AVOID:** STRONG OXIDIZING AGENTS

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

**HAZARDOUS DECOMPOSITION PRODUCTS:** NO DATA AVAILABLE

**SECTION 11. TOXICOLOGICAL INFORMATION**

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.

**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

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

**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**

### **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.

### **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#:** CIG03-BEADS

**NAME:** IP CONTROL BEADS

**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

NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.

NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS. HANDLING AND/OR PROCESSING OF THIS MATERIAL MAY GENERATE A DUST WHICH CAN CAUSE

MECHANICAL IRRITATION OF THE EYES, SKIN, NOSE AND THROAT. AVOID PROLONGED CONTACT WITH EYES, SKIN AND CLOTHING.

**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**

PROTEIN	CAS#: NONE	≥90%
	EINECS#: NONE	
SUCROSE	CAS#: 57-50-1	8%
	EINECS#: 200-334-9	
DEXTRAN	CAS#: 9004-54-0	1.5%
	EINECS#: 232-677-5	
SODIUM CHLORIDE	CAS#: 7647-14-5	<1%
	EINECS#: 231-598-3	
TRIS BASE	CAS#: 77-86-1	<1%
	EINECS#: 201-064-4	
AGAROSE BEADS	CAS#: NONE	
	EINECS#: NONE	

**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. THEN 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

**HAZARDOUS COMBUSTION PRODUCTS:** 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 DUST. AVOID BREATHING VAPORS, MIST, OR GAS. ENSURE ADEQUATE VENTILATION.

**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:** AFTER RECONSTITUTION, ABSORB WITH LIQUID-BINDING MATERIAL (SAND, DIATOMITE, ACID BINDERS, UNIVERSAL BINDERS, SAWDUST). IN LYOPHILIZED STATE, SWEEP UP POWDER. AVOID BREATHING DUST. 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. AVOID GENERATING DUST. AVOID BREATHING DUST.

**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: TYPE FILTER P1 (EU EN 143) OF TYPE P95 (US)  
DO NOT BREATHE VAPORS. 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: 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: PRODUCT IS NOT SELF-IGNITING

DANGER OF EXPLOSION: PRODUCT IS NOT EXPLOSIVE.

DENSITY: NO DATA AVAILABLE

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:** NO DATA AVAILABLE

**MATERIALS TO AVOID:** STRONG OXIDIZING AGENTS

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

**HAZARDOUS DECOMPOSITION PRODUCTS:** NO DATA AVAILABLE

**SECTION 11. TOXICOLOGICAL INFORMATION**

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.

**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

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

**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**

### **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.

### **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#:** ASM01-S

**NAME:** ANTI-SUMO-1 ANTIBODY

**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

NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.

NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS. HANDLING AND/OR PROCESSING OF THIS MATERIAL MAY GENERATE A DUST WHICH CAN CAUSE



MECHANICAL IRRITATION OF THE EYES, SKIN, NOSE AND THROAT. AVOID PROLONGED CONTACT WITH EYES, SKIN AND CLOTHING.

**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**

PROTEIN	CAS#: NONE	≥95%
	EINECS#: NONE	
SUCROSE	CAS#: 57-50-1	1%
	EINECS#: 200-334-9	
PIPES (PIPERAZINE-N, N-BIS(2-ETHANESULFONIC ACID), SESQUISODIUM SALT	CAS#: 100037-69-2	<1%
	EINECS#: UNLISTED	
DEXTRAN	CAS#: 9004-54-0	0.5%
	EINECS#: 232-677-5	

**SECTION 4. FIRST-AID MEASURES**

**AFTER INHALATION:** SUPPLY FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. 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. 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-RESISTENT FOAM 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. 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:** 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: USE TYPE N95 OR TYPE P1 DUST MASKS  
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: NO DATA AVAILABLE

BOILING POINT/BOILING RANGE: NO DATA AVAILABLE

FLASH POINT: NO DATA AVAILABLE

SELF-IGNITING: NO DATA AVAILABLE

DANGER OF EXPLOSION: PRODUCT IS NOT EXPLOSIVE.

DENSITY: NO DATA AVAILABLE

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:** STRONG OXIDIZING AGENTS

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

**HAZARDOUS DECOMPOSITION PRODUCTS:** NO DATA AVAILABLE

## **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.

NO DATA AVAILABLE FOR ACUTE TOXICITY, SKIN CORROSION/IRRITATION, SERIOUS EYE DAMAGE/EYE IRRITATION, RESPIRATORY OR SKIN SENSITIZATION, GERM CELL MUTAGENICITY, SPECIFIC TARGET ORGAN TOXICITY-SINGLE EXPOSURE, SPECIFIC TARGET ORGAN TOXICITY-REPEATED EXPOSURE OR ASPIRATION HAZARD

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

### **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 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 OSHA 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.

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

NO SARA HAZARDS

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

NONE 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.

##### **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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**MATERIAL SAFETY DATA SHEET**

**SECTION 1. CHEMICAL IDENTIFICATION**

**CATALOG/PRODUCT#:** BEB01

**NAME:** BEAD ELUTION 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 AND CANADA: 1-800-535-5053  
OUTSIDE USA AND CANADA: +1 352-323-3500 (COLLECT CALLS ACCEPTED)

**SECTION 2. HAZARDS IDENTIFICATION**

**CLASSIFICATION OF THE SUBSTANCE OR MIXTURE**

GHS CLASSIFICATION IN ACCORDANCE WITH 29 CFR 1910 (OSHA HCS)

ACUTE TOXICITY, ORAL (CATEGORY 4), H302

ACUTE TOXICITY, INHALATION (CATEGORY 4), H332

ACUTE TOXICITY, DERMAL (CATEGORY 4), H312

SKIN IRRITATION (CATEGORY 2), H315

SERIOUS EYE DAMAGE (CATEGORY 1), H318

ACUTE AQUATIC TOXICITY (CATEGORY 2), H401

**GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS**

**PICTOGRAM**



**SIGNAL WORD**

DANGER

## HAZARD STATEMENT(S)

H302 + H312 + H332	HARMFUL IF SWALLOWED, IN CONTACT WITH SKIN OR IF INHALED
H315	CAUSES SKIN IRRITATION
H318	CAUSES SERIOUS EYE DAMAGE

## PRECAUTIONARY STATEMENT(S)

P260	DO NOT BREATHE DUST/FUME/GAS/MIST/VAPORS/SPRAY
P264	WASH SKIN THOROUGHLY AFTER HANDLING
P270	DO NOT EAT, DRINK OR SMOKE WHEN USING THIS PRODUCT
P271	USE ONLY OUTDOORS OR IN A WELL-VENTILATED AREA
P273	AVOID RELEASE TO THE ENVIRONMENT
P280	WEAR PROTECTIVE GLOVES/PROTECTIVE CLOTHING/EYE PROTECTION/FACE PROTECTION
P301+p312+P330	IF SWALLOWED, CALL A POISON CENTER OR DOCTOR/PHYSICIAN IF YOU FEEL UNWELL. RINSE MOUTH
P302+P352+P312	IF ON SKIN, WASH WITH PLENTY OF SOAP AND WATER. CALL A POISON CENTER OR DOCTOR/PHYSICIAN IF YOU FEEL UNWELL
P304+P340+P312	IF INHALED, REMOVE PERSON TO FRESH AIR AND KEEP COMFORTABLE FOR BREATHING
P305+P351+P338+P310	IF IN EYES, RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES. REMOVE CONTACT LENSES IF PRESENT AND EASY TO DO. CONTINUE RINSING. IMMEDIATELY CALL A POISON CENTER OR DOCTOR/PHYSICIAN
P314	GET MEDICAL ATTENTION/ADVICE IF YOU FEEL UNWELL
P333+P313	IF SKIN IRRITATION OR RASH OCCURS, GET MEDICAL ATTENTION/ADVICE
P362	TAKE OFF CONTAMINATED CLOTHING AND WASH BEFORE RE-USE
P391	COLLECT SPILLAGE



P501

DISPOSE OF CONTENTS/CONTAINER TO AN APPROVED  
WASTE DISPOSAL PLANT

**HAZARDS NOT OTHERWISE CLASSIFIED (HNOC) OR NOT COVERED BY GHS**

NONE

**HMIS CLASSIFICATION**

HEALTH HAZARD: 2

FLAMMABILITY: 0

PHYSICAL HAZARDS: 0

CHRONIC HEALTH HAZARD:

**NFPA RATING**

HEALTH HAZARD: 2

FIRE: 0

REACTIVITY HAZARD: 0

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

**THE COMPONENTS OF THE BEAD ELUTION BUFFER ARE PROPRIETARY.**

THE BUFFER CONTAINS TWO DANGEROUS CHEMICALS.

**SECTION 4. FIRST-AID MEASURES**

**GENERAL ADVICE:** MOVE OUT OF DANGEROUS AREA. CONSULT A PHYSICIAN.

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

**AFTER SKIN CONTACT:** 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**

**CONDITIONS OF FLAMMABILITY**

NOT FLAMMABLE OR COMBUSTIBLE

**EXTINGUISHING MEDIA**

**SUITABLE EXTINGUISHING AGENTS:** USE WATER SPRAY, ALCOHOL-RESISTANT FOAM, DRY CHEMICAL OR CARBON DIOXIDE

## ADVICE FOR FIREFIGHTERS

**PROTECTIVE EQUIPMENT:** MOUNT RESPIRATORY PROTECTIVE DEVICE FOR FIREFIGHTING IF NECESSARY. PREVENT CONTACT WITH SKIN AND EYES.

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

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY

**PROCEDURES:** USE PERSONAL PROTECTIVE EQUIPMENT. AVOID DUST FORMATION. AVOID BREATHING VAPORS, MIST OR GAS. ENSURE ADEQUATE VENTILATION.

**ENVIRONMENTAL PRECAUTIONS:** PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO NOT ALLOW TO ENTER SEWERS/SURFACE OR GROUND WATER. DISCHARGE INTO THE ENVIRONMENT MUST BE AVOIDED.

**METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:** IN LYOPHILIZED FORM, SWEEP UP AND SHOVEL. IN LIQUID FORM, SOAK UP WITH INERT ABSORBENT MATERIAL. KEEP IN SUITABLE, CLOSED CONTAINERS FOR DISPOSAL. DISPOSE OF AS HAZARDOUS WASTE.

**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 INHALATION OF VAPOR OR MIST. 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 4°C. KEEP CONTAINER TIGHTLY CLOSED AND SEALED UNTIL READY FOR USE IN A DRY AND WELL-VENTILATED PLACE. CONTAINERS WHICH ARE OPENED MUST BE CAREFULLY RESEALED AND KEPT UPRIGHT TO PREVENT LEAKAGE.

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

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

COMPONENT	CAS#	VALUE	CONTROL PARAMETERS	BASIS
PROPRIETARY		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

SEE APPENDIX D-SUBSTANCES WITH NO ESTABLISHED RELS

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

## **EXPOSURE CONTROLS**

### **APPROPRIATE ENGINEERING CONTROLS**

GENERAL INDUSTRIAL HYGIENE PRACTICE

### **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

### **PERSONAL PROTECTIVE EQUIPMENT**

#### **BREATHING EQUIPMENT**

WHERE RISK ASSESSMENT SHOWS AIR-PURIFYING RESPIRATORS ARE APPROPRIATE USE A FULL-FACE RESPIRATOR WITH MULTI-PURPOSE COMBINATION (US) OR TYPE ABEK (EN 14387) RESPIRATOR CARTRIDGES AS A BACKUP. 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).

**EYE PROTECTION:** USE EQUIPMENT FOR EYE PROTECTION TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR EN 166 (EU). TIGHTLY FITTING SAFETY GOOGLES OR GLASSES OR FACESHIELD.

**SKIN PROTECTION:** HANDLE WITH 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. USE PROPER GOVE 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.

#### **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

**BODY PROTECTION:** PROTECTIVE WORK CLOTHING. CHOOSE BODY PROTECTION IN RELATION TO ITS TYPE, TO THE CONCENTRATION AND AMOUNT OF DANGEROUS SUBSTANCES, AND TO THE SPECIFIC WORK-PLACE. THE TYPE OF PROTECTIVE EQUIPMENT MUST BE SELECTED ACCORDING TO THE CONCENTRATION AND AMOUNT OF THE DANGEROUS SUBSTANCE AT THE SPECIFIC WORKPLACE.

**CONTROL OF ENVIRONMENTAL EXPOSURE**

DO NOT LET PRODUCT ENTER DRAINS. DISCHARGE INTO THE ENVIRONMENT MUST BE AVOIDED.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

**INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES**

**GENERAL INFORMATION**

FORM: LIQUID

COLOR: DARK PURPLE

ODOR: NO DATA AVAILABLE

**SAFETY DATA**

pH: NO DATA AVAILABLE

MELTING POINT/MELTING RANGE: NO DATA AVAILABLE

BOILING POINT/BOILING RANGE: NO DATA AVAILABLE

FLASH POINT: NO DATA AVAILABLE

IGNITION TEMPERATURE: NO DATA AVAILABLE

AUTOIGNITION TEMPERATURE: NO DATA AVAILABLE

LOWER EXPLOSION LIMIT: NO DATA AVAILABLE

UPPER EXPLOSION LIMIT: NO DATA AVAILABLE

VAPOR PRESSURE: NO DATA AVAILABLE

DENSITY: NO DATA AVAILABLE

SOLUBILITY IN/MISCIBILITY WITH WATER: NO DATA AVAILABLE

**SECTION 10. STABILITY AND REACTIVITY**

**REACTIVITY**

**CHEMICAL STABILITY**

STABLE UNDER RECOMMENDED STORAGE CONDITIONS.

**CONDITIONS TO BE AVOIDED:** NO DATA AVAILABLE

**INCOMPATIBLE MATERIALS:** STRONG BASES, BASES, OXIDIZING AGENTS, STRONG OXIDIZING AGENTS, METALS

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

**HAZARDOUS DECOMPOSITION PRODUCTS:** NO DATA AVAILABLE. IN EVENT OF FIRE, SEE SECTION 5

## **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 : NO DATA AVAILABLE

#### **INHALATION LC50**

LC50 INHALATION: NO DATA AVAILABLE

#### **DERMAL LD50**

LD50 DERMAL: NO DATA AVAILABLE

#### **SKIN IRRITATION AND CORROSION**

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**

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**

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

**ASPIRATION HAZARD**

NO DATA AVAILABLE

**SIGNS AND SYMPTOMS OF EXPOSURE**

NO DATA AVAILABLE

**SYNERGISTIC EFFECTS**

NO DATA AVAILABLE

**SECTION 12. ECOLOGICAL INFORMATION**

**TOXICITY**

NO DATA AVAILABLE

**PERSISTENCE AND DEGRADABILITY**

NO DATA AVAILABLE

**BIOACCUMULATIVE POTENTIAL**

NO DATA AVAILABLE

**MOBILITY IN SOIL**

NO DATA AVAILABLE

**PBT AND vPvB ASSESSMENT**

NO DATA AVAILABLE

**OTHER ADVERSE EFFECTS**

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 MAERIAL AND RUNOFF AND CONTACT

WITH SOIL, WATERWAYS, DRAINS AND SEWERS. OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS. DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.

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**

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

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

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

##### **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**

ACUTE HEALTH HAZARD, CHRONIC HEALTH HAZARD

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

THIS PRODUCT DOES NOT CONTAIN ANY CHEMICALS KNOWN TO THE 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#:** GL50

**NAME:** PRECISION RED ADVANCED PROTEIN ASSAY

**USE:** LABORATORY CHEMICALS

**MANUFACTURER/SUPPLIER:**

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

**EMERGENCY CONTACT:**

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**

NOTE: PRODUCT CONTAINS 4% METHANOL. THIS CONCENTRATION IS NOT CONSIDERED HAZARDOUS DUE TO THE ABSENCE OF A FLASHPOINT AT THIS LOW CONCENTRATION.

THE INFORMATION BELOW IS BASED ON A METHANOL CONCENTRATION WITH A FLASHPOINT AND CONCENTRATION >4%. APPROPRIATE LABORATORY PRACTICES AND CAUTION SHOULD STILL BE EXERCISED.

**EMERGENCY OVERVIEW**

**OSHA HAZARDS**

TARGET ORGAN EFFECT, HARMFUL BY INHALATION, HARMFUL BY INGESTION, HARMFUL BY SKIN ABSORPTION, IRRITANT

**TARGET ORGANS**

EYES, KIDNEY, LIVER, HEART, CENTRAL NERVOUS SYSTEM, EYES, KIDNEY, LIVER, HEART

**GHS CLASSIFICATION**

ACUTE TOXICITY, ORAL (CATEGORY 3)  
ACUTE TOXICITY, INHALATION (CATEGORY 3)  
ACUTE TOXICITY, DERMAL (CATEGORY 3)  
SKIN IRRITATION (CATEGORY 2)  
EYE IRRITATION (CATEGORY 2A)  
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (CATEGORY 1)

## GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS



### PICTOGRAM

**SIGNAL WORD** DANGER

### HAZARD STATEMENT(S)

H301+H311 TOXIC IF SWALLOWED OR IN CONTACT WITH SKIN  
H315 CAUSES SKIN IRRITATION  
H319 CAUSES SERIOUS EYE IRRITATION  
H331 TOXIC IF INHALED  
H370 CAUSES DAMAGE TO ORGANS

### PRECAUTIONARY STATEMENT(S)

P260 DO NOT BREATHE DUST/FUME/GAS/MIST/VAPORS/SPRAY  
P280 WEAR PROTECTIVE GLOVES/PROTECTIVE CLOTHING  
P301+P310 IF SWALLOWED: IMMEDIATELY CALL A POISON CENTER OR DOCTOR PHYSICIAN  
P305+P351+P338 IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES. REMOVE CONTACT LENSES IF PRESENT AND EASY TO DO. CONTINUE RINSING  
P307+P311 IF EXPOSED: CALL A POISON CENTER OR DOCTOR/PHYSICIAN

### NFPA RATINGS (SCALE 0-4)

FIRE = 2  
HEALTH = 2  
REACTIVITY = 0

### HMIS CLASSIFICATION

FIRE = 2  
HEALTH = 2  
CHRONIC HEALTH HAZARD = \*  
PHYSICAL HAZARDS = 0

### POTENTIAL HEALTH EFFECTS

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

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

**DESCRIPTION: MIXTURE OF THE SUBSTANCES LISTED BELOW WITH HARMLESS CHEMICALS (<1%) THAT ARE PROPRIETARY**

METHYL ALCOHOL CAS#: 67-56-1  
EINECS: 200-659-6

4%

WATER

CAS#: 7732-18-5  
EINECS: 231-791-2

96%

#### **SECTION 4. FIRST-AID MEASURES**

**GENERAL ADVICE:** CONSULT A PHYSICIAN AND SHOW THIS MSDS TO THE PHYSICIAN

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

**AFTER SKIN CONTACT:** IMMEDIATELY RINSE WITH SOAP AND PLENTY OF WATER. TAKE VICTIM IMMEDIATELY TO HOSPITAL. CONSULT A PHYSICIAN

**AFTER EYE CONTACT:** RINSE OPENED EYE FOR SEVERAL MINUTES UNDER RUNNING WATER. THEN CONSULT PHYSICIAN

**AFTER SWALLOWING:** DO NOT INDUCE VOMITING. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. RINSE MOUTH WITH WATER. CALL FOR PHYSICIAN

#### **SECTION 5. FIREFIGHTING MEASURES**

##### **CONDITIONS OF FLAMMABILITY**

FLAMMABLE IN THE PRESENCE OF A SOURCE OF IGNITION WHEN THE TEMPERATURE IS ABOVE THE FLASH POINT. KEEP AWAY FROM HEAT/SPARKS/OPEN FLAME/HOT SURFACE. NO SMOKING.

##### **EXTINGUISHING MEDIA**

**SUITABLE EXTINGUISHING AGENTS:** CARBON DIOXIDE, EXTINGUISHING POWDER OR WATER SPRAY. FIGHT LARGER FIRES WITH WATER SPRAY OR ALCOHOL RESISTANT FOAM.

##### **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

**LOWER EXPLOSIVE LIMIT (LEL) FOR METHANOL IS 6%**

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

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

**PROCEDURES:** WEAR PROTECTIVE CLOTHING, RESPIRATOR, CHEMICAL SAFETY GOGGLES, RUBBER GLOVES. AVOID BREATHING VAPORS, MIST, OR GAS. ENSURE ADEQUATE VENTILATION. REMOVE ALL SOURCES OF IGNITION.

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

**METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:** ABSORB WITH LIQUID-BINDING MATERIAL (SAND, DIATOMITE, ACID BINDERS, UNIVERSAL BINDERS,

SAWDUST). USE NEUTRALIZING AGENT. 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 INHALATION OF VAPOR OR MIST. ENSURE GOOD VENTILATION AND EXHAUSTION AT THE WORKPLACE.

**INFORMATION ABOUT PROTECTION AGAINST EXPLOSIONS AND FIRES:** KEEP AWAY FROM SOURCES OF IGNITION. NO SMOKING. TAKE MEASURES TO PREVENT THE BUILD UP OF ELECTROSTATIC CHARGE.

**REQUIREMENTS TO BE MET BY STOREROOMS AND RECEPTACLES:** STORE AT 2-8°C. **INFORMATION ABOUT STORAGE IN ONE COMMON STORAGE FACILITY:** NO SPECIAL PRECAUTIONS ARE NECESSARY. KEEP TIGHTLY CLOSED.

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

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

### **COMPONENTS WITH LIMIT VALUES THAT REQUIRE MONITORING AT THE WORKPLACE:**

67-56-1 METHANOL

<b>VALUE</b>	<b>CONTROL PARAMETERS</b>	<b>BASIS</b>
TWA	200 PPM	USA. ACGIH THRESHOLD LIMIT VALUES
STEL	250 PPM	USA. ACGIH THRESHOLD LIMIT VALUES
TWA	200 PPM, 260 mg/m <sup>3</sup>	USA. OSHA-TABLE Z-1 LIMITS FOR AIR CONTAMINANTS-1910.1000
STEL	250 PPM, 325 mg/m <sup>3</sup>	USA. OSHA-TABLE Z-1 LIMITS FOR AIR CONTAMINANTS-1910.1000
TWA	200 PPM, 260 mg/m <sup>3</sup>	USA. OCCUPATIONAL EXPOSURE LIMITS (OSHA)-TABLE Z-1 LIMITS FOR AIR CONTAMINANTS
TWA	200 PPM, 260 mg/m <sup>3</sup>	USA. NIOSH RECOMMENDED EXPOSURE LIMITS
ST	250 PPM, 325 mg/m <sup>3</sup>	USA. NIOSH RECOMMENDED EXPOSURE LIMITS

### **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, SKIN, AND CLOTHING

## **BREATHING EQUIPMENT**

WHERE RISK ASSESSMENT SHOWS AIR-PURIFYING RESPIRATORS ARE APPROPRIATE, USE A FULL-FACE RESPIRATOR WITH MULTI-PURPOSE COMBINATION (US) OR TYPE AXBEK (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.

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: LIQUID

COLOR: DARK RED

ODOR: DISTINCTIVE

pH-VALUE AT 20°C: 3.0

CHANGE IN CONDITION

MELTING POINT/MELTING RANGE: UNDETERMINED

BOILING POINT/BOILING RANGE: UNDETERMINED

FLASH POINT: NOT DETERMINED.

SELF-IGNITING: PRODUCT IS NOT SELF-IGNITING

DANGER OF EXPLOSION: PRODUCT IS NOT EXPLOSIVE. HOWEVER, FLAMMABLE VAPOR BUILD-UP IS POSSIBLE. KEEP AREA WELL-VENTILATED.

DENSITY: NOT DETERMINED

SOLUBILITY IN/MISCIBILITY WITH WATER: FULLY MISCIBLE

SOLVENT CONTENT:

ORGANIC SOLVENTS: 4%

WATER: 96%

SEE SECTION 10.

## SECTION 10. STABILITY AND REACTIVITY

### REACTIVITY

#### CHEMICAL STABILITY

STABLE UNDER RECOMMENDED STORAGE CONDITIONS.

**THERMAL DECOMPOSITION/CONDITIONS AND MATERIALS TO BE AVOIDED:** NO DECOMPOSITION IF USED ACCORDING TO SPECIFICATIONS. AVOID HEAT, SPARKS, AND FLAMES AND EXTREMES OF TEMPERATURE AND DIRECT SUNLIGHT. AVOID CHLORIDES, ACID ANHYDRIDES, OXIDIZING AGENTS, ALKALI METALS, REDUCING AGENTS, AND ACIDS.

**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:

PRIMARY IRRITANT EFFECT:

ON THE SKIN: CAUSTIC EFFECT ON SKIN AND MUCOUS MEMBRANES

ON THE EYE: STRONG CAUSTIC EFFECT.

SENSITIZATION: NO SENSITIZING EFFECTS KNOWN

ADDITIONAL TOXICOLOGICAL INFORMATION:

SWALLOWING WILL LEAD TO A STRONG CAUSTIC EFFECT ON MOUTH AND THROAT AND TO THE DANGER OF PERFORATION OF ESOPHAGUS AND STOMACH.

LD/LC50 VALUES FOR HAZARDOUS COMPONENTS PER OSHA CRITERIA:

67-56-1 METHANOL

ORAL	LD50	5628 MG/KG (RAT)
DERMAL	LD50	20000 MG/KG (RAT)
DERMAL	LD50	15,800 MG/KG (RABBIT)
INHALATION	LC50	64000 PPM (RAT) 4 HOURS
INHALATION	LC50	87.6 mg/l (RAT) 4 HOURS

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.

#### SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (GHS)

CAUSES DAMAGE TO ORGANS

## **SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE (GHS)**

NO DATA AVAILABLE

## **POTENTIAL HEALTH EFFECTS**

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

## **SECTION 12. ECOLOGICAL INFORMATION**

### **TOXICITY**

#### **TOXICITY TO FISH**

LC50 - ONCORHYNCHUS MYKISS (RAINBOW TROUT) - 19,000 mg/l - 96 HOURS  
MORTALITY LC50 - LEPOMIS MACROCHIRUS (BLUEGILL) - 15,400 mg/l - 96 HOURS

#### **TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES**

EC50 - DAPHNIA MAGNA (WATER FLEA) - 24,500 mg/l - 48 HOURS  
EC100 - DAPHNIA MAGNA (WATER FLEA) - 10,000 mg/l - 24 HOURS

#### **TOXICITY TO ALGAE**

GROWTH INHIBITION EC50 - SCENEDESMUS CAPRICORNUTUM (FRESH WATER ALGAE) - 22,000 mg/l - 96 HOURS

#### **GENERAL NOTES:**

DO NOT POUR UNDILUTED PRODUCT OR LARGE QUANTITIES INTO DRAINS OR ALLOW TO REACH GROUND WATER, WATER COURSE OR SEWAGE SYSTEM.

## **SECTION 13. DISPOSAL CONSIDERATIONS**

### **WASTE TREATMENT METHODS**

RECOMMENDATION: MUST NOT BE DISPOSED OF TOGETHER WITH HOUSEHOLD GARBAGE. DO NOT ALLOW PRODUCT TO REACH SEWAGE SYSTEM.

UNCLEANED PACKAGINGS:

RECOMMENDATION: DISPOSAL MUST BE MADE ACCORDING TO OFFICIAL REGULATIONS. USE A LICENSED DISPOSAL COMPANY.

RECOMMENDED CLEANSING AGENT: WATER, IF NECESSARY WITH CLEANSING AGENTS. HAND OVER TO HAZARDOUS WASTE DISPOSERS.

OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

DISPOSE OF CONTAMINATED PACKAGING AS UNUSED PRODUCT

## **SECTION 14. TRANSPORT INFORMATION**

NOTE: PRODUCT CONTAINS 4% METHANOL. THIS CONCENTRATION IS NOT CONSIDERED HAZARDOUS DUE TO THE ABSENCE OF A FLASHPOINT AT THIS LOW CONCENTRATION.

SHIPPED IN A SEALED BOTTLE WITH THICK ABSORBENT PAPER.

IF METHANOL CONTENT WERE TO BE OF A SUFFICIENT CONCENTRATION TO HAVE A FLASHPOINT AND BE CONSIDERED HAZARDOUS, TRANSPORT INFORMATION WOULD BE:

DOT CLASSIFICATION: CLASS 3 (6.1): FLAMMABLE LIQUID, TOXIC  
UN NUMBER: 1230  
PACKING GROUP: II

IATA-DGR CLASSIFICATION: CLASS 3 (6.1): FLAMMABLE LIQUID, TOXIC  
UN NUMBER: 1230  
PACKING GROUP: II

IMDG CLASSIFICATION: CLASS 3 (6.1): FLAMMABLE LIQUID, TOXIC  
UN NUMBER: 1230  
PACKING GROUP: II

## **SECTION 15. REGULATORY INFORMATION**

### **OSHA HAZARDS**

TARGET ORGAN EFFECT, HARMFUL BY INHALATION, HARMFUL BY INGESTION,  
HARMFUL BY SKIN ABSORPTION, IRRITANT

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

NONE OF THE INGREDIENTS IS LISTED.

### **SARA 313 COMPONENTS**

THE FOLLOWING COMPONENTS ARE SUBJECT TO REPORTING LEVELS ESTABLISHED BY  
SARA TITLE III, SECTION 313  
METHANOL CAS # 67-56-1

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

ACUTE HEALTH HAZARD, CHRONIC HEALTH HAZARD

## **EU REGULATORY INFORMATION**

THIS MATERIAL IS CLASSIFIED AS DANGEROUS ACCORDING TO DIRECTIVE 67/548.EEC  
AND ITS AMENDMENTS

### **TSCA (TOXIC SUBSTANCES CONTROL ACT):**

ALL INGREDIENTS ARE LISTED.

### **CARCINOGENIC CATEGORIES**

#### **EPA (ENVIRONMENTAL PROTECTION AGENCY)**

NONE OF THE INGREDIENTS IS LISTED.

#### **IARC (INTERNATIONAL AGENCY FOR RESEARCH ON CANCER)**

NONE OF THE INGREDIENTS IS LISTED.



**TLV (THRESHOLD LIMIT VALUE ESTABLISHED BY ACGIH)**

NONE OF THE INGREDIENT IS LISTED.

**MAK (GERMAN MAXIMUM WORKPLACE CONCENTRATION)**

NONE OF THE INGREDIENTS IS LISTED.

**NIOSH-CA (NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH)**

NONE OF THE INGREDIENTS IS LISTED.

**OSHA-CA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)**

NONE OF THE INGREDIENTS IS LISTED.

**MARKINGS ACCORDING TO EU GUIDELINES:**

NOT HARMFUL

**CODE LETTER AND HAZARD DESIGNATION OF PRODUCT:**

XN HARMFUL

**HAZARD-DETERMINING COMPONENTS OF LABELING:**

METHANOL

**CANADA REGULATORY INFORMATION**

WHMIS CLASSIFICATION: CLASS D DIV 1B, CLASS D DIV 2B; CLASS B DIV 2

**STATE REGULATIONS**

MA, NY, NJ, PA, FL

METHANOL IS LISTED (CAS # 67-56-1)

**CALIFORNIA PROP. 65 COMPONENTS**

THIS PRODUCT DOES NOT CONTAIN ANY CHEMICALS KNOWN TO THE 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#:** PIC02

**NAME:** PROTEASE INHIBITOR COCKTAIL

**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**  
IRRITANT

GHS CLASSIFICATION  
SKIN IRRITATION (CATEGORY 2)  
EYE IRRITATION (CATEGORY 2A)  
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (CATEGORY 3)  
ACUTE TOXICITY, ORAL (CATEGORY 5)

PICTOGRAM 

SIGNAL WORD: WARNING

**HAZARD STATEMENTS**

H303	MAY BE HARMFUL IF SWALLOWED
H315	CAUSES SKIN IRRITATION
H319	CAUSES SERIOUS EYE IRRITATION
H335	MAY CAUSE RESPIRATORY IRRITATION

**PRECAUTIONARY STATEMENTS**

P261	AVOID BREATHING DUST/FUME/GAS/MIST/VAPORS/SPRAY
P305 + P351 + P338	IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES. REMOVE CONTACT LENSES, IF PRESENT AND EASY TO DO. CONTINUE RINSING.

**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**

BENZAMIDINIUM CHLORIDE	CAS#: 206752-36-5 EC#: 216-795-4
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SYNONYMS: AMIDINOBENZENE HYDROCHLORIDE, BENZAMIDINIUM CHLORIDE, BENZENECARBOXIMIDAMIDE HYDROCHLORIDE

FORMULA:  $C_7H_8N_2 \cdot ClH \cdot H_2O$ 

MOLECULAR WEIGHT: 156.61 g/mol

PEPSTATIN A	CAS#: 26305-03-3 EC#: 247-600-0
-------------	------------------------------------

FORMULA:  $C_{34}H_{63}N_5O_9 \cdot C_{34}H_{63}N_5O_9$ 

MOLECULAR WEIGHT: 685.89 g/mol

LEUPEPTIN HYDROCHLORIDE	CAS#: 24125-16-4 EC#: NONE
-------------------------	-------------------------------

FORMULA:  $C_{20}H_{38}N_6O_4 \cdot HCl$ 

MOLECULAR WEIGHT: 463.01 g/mol

$N\alpha$ -p-TOSYL-L-ARGININE METHYL ESTER HYDROCHLORIDE	CAS#: 1784-03-8 EC#: 217-235-1
--	-----------------------------------

SYNONYMS: TAME HYDROCHLORIDE

FORMULA:  $C_{14}H_{22}N_4O_4S \cdot HCl$ 

MOLECULAR WEIGHT: 378.87 g/mol

**SECTION 4. FIRST-AID MEASURES**

**GENERAL ADVICE:** CONSULT A PHYSICIAN. SHOW THIS SAFETY DATASHEET TO THE PHYSICIAN. MOVE OUT OF DANGEROUS AREA.

**AFTER INHALATION:** SUPPLY FRESH AIR. 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 RE-USE.

## **SECTION 5. FIREFIGHTING MEASURES**

**CONDITIONS OF FLAMMABILITY:** NOT FLAMMABLE OR COMBUSTIBLE

### **EXTINGUISHING MEDIA**

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

### **ADVICE FOR FIREFIGHTERS**

**PROTECTIVE EQUIPMENT:** WEAR SELF-CONTAINED BREATHING APPARATUS FOR FIRE FIGHTING IF NECESSARY

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

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

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

**PROCEDURES:** AVOID DUST FORMATION AND AVOID BREATHING VAPORS, MIST OR GAS. ENSURE ADEQUATE VENTILATION. 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:** IN POWDER FORM, SWEEP UP AND SHOVEL. AFTER 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.

**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.

## **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 DRY AND WELL-VENTILATED PLACE.

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

NO SUBSTANCES ARE PRESENT THAT REQUIRE MONITORING

### **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. DO NOT BREATHE DUST.

#### **BREATHING EQUIPMENT**

FOR SHORT TERM FILTER DEVICE TO PROTECT FROM NUISANCE LEVELS OF DUST, USE TYPE N95 OR TYPE P1 DUST MASKS. FOR HIGHER LEVEL PROTECTION, USE TYPE OV/AG/P99 OR ABEK-P2 RESPIRATOR CARTRIDGES.

#### **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:** 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: SOLID (LYOPHILIZED POWDER)  
COLOR: OFF-WHITE  
pH: NO DATA AVAILABLE  
MELTING POINT/MELTING RANGE: NO DATA AVAILABLE  
BOILING POINT/BOILING RANGE: NO DATA AVAILABLE  
FLASH POINT: NO DATA AVAILABLE  
IGNITION TEMPERATURE: NO DATA AVAILABLE  
LOWER EXPLOSIVE LIMIT: NO DATA AVAILABLE  
UPPER EXPLOSIVE LIMIT: NO DATA AVAILABLE  
VAPOR PRESSURE: NO DATA AVAILABLE  
DENSITY: NO DATA AVAILABLE  
SOLUBILITY IN/MISCIBILITY WITH WATER: NO DATA AVAILABLE

## SECTION 10. STABILITY AND REACTIVITY

### REACTIVITY

**CHEMICAL STABILITY:** STABLE UNDER RECOMMENDED STORAGE CONDITIONS.

**THERMAL DECOMPOSITION/CONDITIONS TO BE AVOIDED:** AVOID ALKALINES, STRONG ACIDS AND STRONG BASES, STRONG OXIDIZING AGENTS

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

**HAZARDOUS DECOMPOSITION PRODUCTS:** HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS: CARBON OXIDES, NITROGEN OXIDES, SULPHUR OXIDES, HYDROGEN CHLORIDE GAS

## 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: NO DATA AVAILABLE

#### **INHALATION LC50 AND DERMAL LD50:**

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**

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:**

NO DATA AVAILABLE

**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**

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 12. ECOLOGICAL INFORMATION**

**TOXICITY**

NO DATA AVAILABLE

**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**

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

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

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

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

#### **OSHA HAZARDS**

IRRITANT

#### **DSL STATUS**

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

LEUPEPTIN HYDROCHLORIDE

CAS #: 24125-16-4

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

NONE OF THE INGREDIENTS ARE LISTED.

#### **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**

ACUTE HEALTH HAZARD



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

BENZAMIDINIUM CHLORIDE	CAS #: 206752-36-5
PEPSTATIN A	CAS #: 26305-03-3
LEUPEPTIN HYDROCHLORIDE	CAS #: 24125-16-4
N $\alpha$ -p-TOSYL-L-ARGININE METHYL ESTER HYDROCHLORIDE	CAS#: 1784-03-8

## **CALIFORNIA PROP. 65 COMPONENTS**

THIS PRODUCT DOES NOT CONTAIN ANY CHEMICALS KNOWN TO THE 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#:** CLRA (CLEAR BOTTLE) and CLRB (BROWN BOTTLE)

**NAME:** HRP DETECTION REAGENT A (CLRA) AND HRP DETECTION REAGENT B (CLRB)

**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**

THESE REAGENTS ARE NOT CONSIDERED HAZARDOUS BY THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200).

**TARGET ORGANS**

NONE

**GHS CLASSIFICATION**

NONE

**GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS**

PICTOGRAM                      NONE

SIGNAL WORD                      NONE

**HAZARD STATEMENT(S)**

THERE ARE NO KNOWN HAZARDS.

**PRECAUTIONARY STATEMENT(S)**

THERE ARE NO APPLICABLE PRECAUTIONARY STATEMENTS.

## **HMIS CLASSIFICATION (SCALE 0-4)**

HEALTH HAZARD = 0  
CHRONIC HEALTH HAZARD =  
FLAMMABILITY = 0  
PHYSICAL HAZARDS = 0

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

FIRE = 0  
HEALTH = 0  
REACTIVITY = 0

## **POTENTIAL HEALTH EFFECTS**

<b>INHALATION</b>	EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD. SERIOUS EFFECTS MAY BE DELAYED FOLLOWING EXPOSURE ( <b>PART# CLR</b> ). FOR <b>PART# CLRA</b> , NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS
<b>SKIN</b>	NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS
<b>EYES</b>	NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS
<b>INGESTION</b>	NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS

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

THESE REAGENTS (CLRA AND CLR) ARE COMPRISED OF PROPRIETARY CHEMICALS THAT ARE NOT HAZARDOUS.

## **SECTION 4. FIRST-AID MEASURES**

### **GENERAL ADVICE**

CONSULT A PHYSICIAN. SHOW THIS MSDS TO THE PHYSICIAN. NOTE: IN CASE OF INHALATION OF DECOMPOSITION PRODUCTS IN A FIRE, SYMPTOMS MAY BE DELAYED. THE EXPOSED PERSON MAY NEED TO BE KEPT UNDER MEDICAL CARE FOR 48 HOURS (PART# CLR).

**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:** RINSE WITH PLENTY OF SOAP AND WATER FOR AT LEAST 15 MINUTES. CONSULT PHYSICIAN

**AFTER EYE CONTACT:** REMOVE CONTACT LENSES, IF PRESENT AND EASY TO DO. RINSE OPENED EYE FOR AT LEAST 15 MINUTES UNDER RUNNING WATER. CONSULT PHYSICIAN.

**AFTER SWALLOWING:** RINSE MOUTH WITH WATER. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. CONSULT PHYSICIAN

REMOVE AND WASH CONTAMINATED CLOTHING BEFORE REUSE.

## **SECTION 5. FIREFIGHTING MEASURES**

## **EXTINGUISHING MEDIA**

**SUITABLE EXTINGUISHING AGENTS:** USE DRY CHEMICAL (EXTINGUISHING) POWDER, WATER SPRAY, CARBON DIOXIDE, OR ALCOHOL RESISTANT FOAM.

## **ADVICE FOR FIREFIGHTERS**

**PROTECTIVE EQUIPMENT:** MOUNT RESPIRATORY PROTECTIVE DEVICE AND FULL PROTECTIVE GEAR

**HAZARDOUS COMBUSTION PRODUCTS: PART# CLRB:** HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS – CARBON DIOXIDE, CARBON MONOXIDE, NITROGEN OXIDES; **PART# CLRA:** NO DATA AVAILABLE

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

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

**PROCEDURES:** WEAR PROTECTIVE CLOTHING, CHEMICAL SAFETY GOGGLES, RUBBER GLOVES, DUST MASK, BOOTS. IF DRY MATERIAL, AVOID DUST FORMATION. AVOID BREATHING DUST, VAPORS, MIST OR GAS. INSURE ADEQUATE VENTILATION.

**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). IN DRY FORM, SWEEP UP AND SHOVEL INTO SUITABLE CONTAINER 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:** ENSURE GOOD VENTILATION/EXHAUSTION AT THE WORKPLACE. AVOID FORMATION OF DUST AND AEROSOLS. AVOID INHALATION OF VAPOR OR MIST. AVOID CONTACT WITH SKIN AND EYES.

**INFORMATION ABOUT PROTECTION AGAINST EXPLOSIONS AND FIRES:** KEEP CONTAINER TIGHTLY CLOSED AND STORED IN A COOL, WELL-VENTILATED AREA.

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

**INFORMATION ABOUT STORAGE IN ONE COMMON STORAGE FACILITY:** NO SPECIAL PRECAUTIONS ARE NECESSARY. KEEP TIGHTLY CLOSED AND IN A DRY, WELL-VENTILATED PLACE.

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

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

CONTAINS NO SUBSTANCES WITH OCCUPATIONAL EXPOSURE LIMIT VALUES

### **GENERAL INFORMATION**

#### **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

### **BREATHING EQUIPMENT**

WHERE RISK ASSESSMENT SHOWS AIR-PURIFYING RESPIRATORS ARE APPROPRIATE, USE A FULL-FACE 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 PRODUCTS 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. 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. USE EYE PROTECTION TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR EN 166 (EU).

**BODY PROTECTION:** PROTECTIVE WORK CLOTHING

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

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

#### **GENERAL INFORMATION**

FORM: LIQUID

COLOR: COLORLESS

ODOR: UNDETERMINED

AUTOIGNITION TEMPERATURE: NO DATA AVAILABLE

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: FULLY MISCIBLE

SEE SECTION 10.

## SECTION 10. STABILITY AND REACTIVITY

### REACTIVITY

#### CHEMICAL STABILITY

STABLE WHEN STORED AS DIRECTED

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

**POSSIBILITY OF HAZARDOUS REACTIONS:** UNDER NORMAL CONDITIONS OF STORAGE AND USE, HAZARDOUS DECOMPOSITION PRODUCTS SHOULD NOT BE PRODUCED.

**MATERIALS TO AVOID:** NO DATA AVAILABLE

**HAZARDOUS DECOMPOSITION PRODUCTS:** UNDER NORMAL CONDITIONS OF STORAGE AND USE, HAZARDOUS DECOMPOSITION PRODUCTS SHOULD NOT BE PRODUCED.  
HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS – NO DATA AVAILABLE

## SECTION 11. TOXICOLOGICAL INFORMATION

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

### ACUTE TOXICITY

#### ORAL LD50 (PART# CLRA)

SPECIES	DOSE
RAT	1200 mg/kg

#### INHALATION LC50

NO DATA AVAILABLE

#### DERMAL LD50

NO DATA AVAILABLE

### CORROSION/IRRITATION

#### PART# CLRB

RESULT	SPECIES	EXPOSURE
SKIN-MODERATE IRRITANT	RABBIT	25%
SKIN-SEVERE IRRITANT	RABBIT	500 mgs
SKIN-MODERATE IRRITANT	WOMAN	1%

#### PART# CLRA

EYES-MODERATE IRRITANT	RABBIT	50 mgs
------------------------	--------	--------

### SERIOUS EYE DAMAGE/EYE IRRITATION

NO DATA AVAILABLE

**RESPIRATORY OR SKIN SENSITIZATION**

NO DATA AVAILABLE

**OTHER INFORMATION ON ACUTE TOXICITY**

NO DATA AVAILABLE

**GERM CELL MUTAGENICITY**

NO DATA AVAILABLE

IN VITRO TESTS SHOWED MUTAGENIC EFFECTS

**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.

**OSHA:** NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A KNOWN OR ANTICIPATED CARCINOGEN BY OSHA.

**IARC:** NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A KNOWN OR ANTICIPATED CARCINOGEN BY IARC.

**IARC:** 3 - GROUP 3: NOT CLASSIFIABLE AS TO ITS CARCINOGENICITY TO HUMANS (1-ETHENYL-2-PYRROLIDINONE HOMOPOLYMER

**ACGIH:** NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A KNOWN OR ANTICIPATED CARCINOGEN BY ACGIH.

**REPRODUCTIVE TOXICITY**

NO DATA AVAILABLE

**TERATOGENICITY**

NO DATA AVAILABLE

**SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE)**

**PART# CLRA AND CLRB**

CATEGORY	ROUTE OF EXPOSURE	TARGET ORGANS
3	NOT APPLICABLE	RESPIRATORY TRACT IRRITATION

**ASPIRATION HAZARD**

NO DATA AVAILABLE

**POTENTIAL HEALTH EFFECTS**

**INHALATION** EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD. SERIOUS EFFECTS MAY BE DELAYED FOLLOWING EXPOSURE (**PART# CLRB**); **PART# CLRA**: NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS

**SKIN** NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS

**EYES** NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS

**INGESTION** NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS

**SECTION 12. ECOLOGICAL INFORMATION**

PART#	RESULT	SPECIES	EXPOSURE
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CLRA ACUTE EC50 6.98 TO CRUSTACEANS – CERIODAPHNIA 48 HOURS  
10.68 mg/l FRESH WATER. DUBIA – NEONATE

NO DATA AVAILABLE FOR PART# CLR B

### SECTION 13. DISPOSAL CONSIDERATIONS

#### WASTE TREATMENT METHODS

RECOMMENDATION: MUST NOT BE DISPOSED OF TOGETHER WITH HOUSEHOLD GARBAGE. DO NOT ALLOW PRODUCT TO REACH SEWAGE SYSTEM.

UNCLEANED PACKAGINGS: DISPOSE OF AS UNUSED PRODUCT

RECOMMENDATION: DISPOSAL MUST BE MADE ACCORDING TO OFFICIAL REGULATIONS. OFFER SURPLUS AND NON-RECYCLABLE SOLUTIONS TO A LICENSED DISPOSAL COMPANY. DISSOLVE OR MIX MATERIAL WITH COMBUSTIBLE SOLVENT AND BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.

RECOMMENDED CLEANSING AGENT: WATER, IF NECESSARY WITH CLEANSING AGENTS.

CONTAMINATED PACKAGING: DISPOSE OF AS UNUSED PRODUCT

OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

### 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

NONE

#### U.S. REGULATORY INFORMATION

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

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

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

##### SECTION 313 (40CFR372.65):

#### FOR PART# CLR B:

	<u>PRODUCT</u>	<u>CAS#</u>	<u>%</u>
FORM R-REPORTING REQUIREMENTS	ETHANEDIOL	107-21-1	1-3
SUPPLIER NOTIFICATION	ETHANEDIOL	107-21-1	1-3

#### SARA 311/312 HAZARDS



NONE

**TSCA  
FOR PART# CLRB:**

TSCA 8(A) PAIR: TETRAHYDROFURAN  
TSCA 8(A) CDR EXEMPT/PARTIAL EXEMPTION: NOT DETERMINED  
UNITED STATES INVENTORY (TSCA 8B): NOT DETERMINED  
CLEAN WATER ACT (CWA) 311: SODIUM HYDROXIDE

**MA AND NY RIGHT TO KNOW COMPONENTS**

THE FOLLOWING COMPONENTS ARE LISTED: ETHYLENE GLYCOL (PART# CLRB)

**PA AND NJ RIGHT TO KNOW COMPONENTS**

THE FOLLOWING COMPONENTS ARE LISTED: ETHYLENE GLYCOL; 1,2-ETHANEDIOL  
(PART# CLRB)

**CALIFORNIA PROP. 65 COMPONENTS**

THIS PRODUCT (PART# CLRB) CONTAINS LESS THAN 0.1% OF A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER. PART# CLRB DOES NOT CONTAIN ANY CHEMICALS KNOWN TO STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR ANY OTHER REPRODUCTIVE HARM.

INGREDIENT	CANCER	REPRODUCTIVE	NO SIGNIFICANT RISK LEVEL	MAX ACCEPTABLE DOSAGE LEVEL
1,3-PROPANESULTONE	YES	NO	0.3 ug/day INGEST OR INHALE	NO

**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 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, 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 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.

**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 MAERIAL 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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