

**MATERIAL SAFETY DATA SHEET**

**SECTION 1. CHEMICAL IDENTIFICATION**

**CATALOG/PRODUCT#:** BSA02

**NAME:** ACTIN POLYMERIZATION BUFFER (10X CONCENTRATION)

**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**

**EMERGENCY OVERVIEW**

**THE ONLY HAZARDOUS REAGENT ABOVE 1% IS POTASSIUM CHLORIDE**

**OSHA HAZARDS**

TARGET ORGAN EFFECT

**TARGET ORGANS**

HEART

**GHS CLASSIFICATION**

ACUTE TOXICITY, ORAL (CATEGORY 5)  
EYE IRRITATION (CATEGORY 2B)  
ACUTE AQUATIC TOXICITY (CATEGORY 3)

SIGNAL WORD: WARNING

HAZARD PICTOGRAMS: NONE

**HEALTH HAZARD STATEMENTS:**

H303: MAY BE HARMFUL IF SWALLOWED  
H320: CAUSES EYE IRRITATION

H402: HARMFUL TO AQUATIC LIFE

**PRECAUTIONARY STATEMENTS:**

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

**POTENTIAL HEALTH EFFECTS**

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

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

FIRE = 0  
HEALTH HAZARD = 0  
REACTIVITY = 0

**HMIS RATINGS**

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

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

GUANIDINE CARBONATE	XI;S22; R22/36-38	CAS#: 593-85-1	<1%
		EINECS#:209-813-7	
POTASSIUM CHLORIDE		CAS#: 7447-40-7	3.8%
		EINECS#: 231-211-8	
MAGNESIUM CHLORIDE		CAS#: 7791-18-6	<1%
		EINECS#: UNLISTED	
ATP (ADENOSINE 5'-TRIPHOSPHATE)		CAS#: 34369-07-8	<1%
		EINECS#: UNLISTED	

**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. CONSULT A PHYSICIAN  
**AFTER EYE CONTACT:** RINSE OPENED EYE FOR AT LEAST 15 MINUTES UNDER RUNNING WATER. THEN CONSULT PHYSICIAN  
**AFTER SWALLOWING:** WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CONSULT A PHYSICIAN

WASH CONTAMINATED CLOTHING BEFORE REUSE.

## SECTION 5. FIREFIGHTING MEASURES

### **EXTINGUISHING MEDIA**

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

### **ADVICE FOR FIREFIGHTERS**

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

**HAZARDOUS COMBUSTION PRODUCTS:** HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS - HYDROGEN CHLORIDE GAS, POTASSIUM OXIDES

**FURTHER INFORMATION:** THE PRODUCT ITSELF DOES NOT BURN

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

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

## SECTION 7. HANDLING AND STORAGE

### **HANDLING**

**PRECAUTIONS FOR SAFE HANDLING:** ENSURE GOOD VENTILATION/EXHAUSTION AT THE WORKPLACE. WEAR APPROPRIATE PROTECTIVE CLOTHING (SEE SECTION 8). DO NOT RE-USE CONTAINER. AVOID CONTACT WITH SKIN AND EYES. AVOID FORMATION OF DUST AND AEROSOLS. PROVIDE APPROPRIATE EXHAUST VENTILATION AT PLACES WHERE DUST IS FORMED.

**INFORMATION ABOUT PROTECTION AGAINST EXPLOSIONS AND FIRES:** NO DATA AVAILABLE

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES  
STORAGE

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

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

## **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**

USE A DUST MASK TYPE P95 OR OTHER SHORT TERM FILTER DEVICE: FILTER P1  
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 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)

CHANGE IN CONDITION

MELTING POINT/MELTING RANGE: NO DATA AVAILABLE

BOILING POINT/BOILING RANGE: NO DATA AVAILABLE

FLASH POINT: NO DATA AVAILABLE  
SELF-IGNITING: NO DATA AVAILABLE  
DANGER OF EXPLOSION: NO DATA AVAILABLE  
DENSITY: NOT DETERMINED  
SOLUBILITY IN/MISCIBILITY WITH WATER: FULLY MISCIBLE

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

### **REACTIVITY**

#### **CHEMICAL STABILITY**

STABLE UNDER RECOMMENDED STORAGE CONDITIONS.

**THERMAL DECOMPOSITION/CONDITIONS TO BE AVOIDED:** AVOID STRONG OXIDIZING AGENTS, STRONG ACIDS. AVOID EXPOSURE TO MOISTURE

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

**HAZARDOUS DECOMPOSITION PRODUCTS:** HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS: HYDROGEN CHLORIDE GAS, POTASSIUM OXIDES. OTHER 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.

#### **ACUTE TOXICITY**

LD50 ORAL - NO DATA AVAILABLE

INHALATION LC50 - NO DATA AVAILABLE

DERMAL LD50 - NO DATA AVAILABLE

#### **SKIN CORROSION/IRRITATION**

NO DATA AVAILABLE

#### **SERIOUS EYE DAMAGE/EYE IRRITATION**

EYES -RABBIT- MILD EYE IRRITATION -24 H

#### **RESPIRATORY OR SKIN SENSITIZATION**

NO DATA AVAILABLE

NO DATA IS AVAILABLE REGARDING GERM CELL MUTAGENICITY, REPRODUCTIVE TOXICITY, TERATOGENICITY, SPECIFIC TARGET ORGAN TOXICITY (SINGLE OR REPEATED EXPOSURE), ASPIRATION HAZARD, OR SYNERGISTIC EFFECTS.

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

### **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

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

HYPERKALEMIA, NAUSEA, VOMITING, ABDOMINAL PAIN, DIARRHEA, CONSTIPATION, PARESTHESIA, THIRST, DIZZINESS, RASH, PRURITUS, WEAKNESS, MUSCLE CRAMPS, MINOR PSYCHIATRIC CHANGES, MINOR VISUAL CHANGES

## **SECTION 12. ECOLOGICAL INFORMATION**

### **TOXICITY**

TOXICITY TO FISH LC50 - PIMEPHALES PROMELAS (FATHEAD MINNOW) - 880 mg/l - 96 h

MORTALITY NOEC - PIMEPHALES PROMELAS (FATHEAD MINNOW) - 500 mg/l - 7 d

MORTALITY LOEC - PIMEPHALES PROMELAS (FATHEAD MINNOW) - 1000 mg/l - 7 d

TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES EC50 - DAPHNIA MAGNA (WATER FLEA) - 83 mg/l - 48 h

NO ADDITIONAL DATA AVAILABLE

AN ENVIRONMENTAL HAZARD CANNOT BE EXCLUDED IN THE EVENT OF UNPROFESSIONAL HANDLING OR DISPOSAL

HARMFUL TO AQUATIC LIFE

## **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 AN UNUSED PRODUCT

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

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

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

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

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

##### **OSHA HAZARDS**

TARGET ORGAN EFFECT

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

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

NONE OF THE INGREDIENTS IS LISTED.

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

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

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

CHRONIC HEALTH HAZARD

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

POTASSIUM CHLORIDE                      CAS#: 7447-40-7

##### **CA 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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