

Cytoskeleton, Inc.

MATERIAL SAFETY DATA SHEET

SECTION 1. CHEMICAL IDENTIFICATION

CATALOG/PRODUCT#: MG01, MG02, MG03, MG04, MG05,

NAME: MemGlow™ 488, MemGlow™ 560, MemGlow™ 590, MemGlow™ 640, MemGlow™ 700

USE: LABORATORY CHEMICALS

PROVIDED AS: <1 milligram lyophilized powder

MANUFACTURER/SUPPLIER:

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

24H EMERGENCY TOLL-FREE NUMBER: CALL INFOTRAC DAY OR NIGHT
WITHIN USA, CANADA, AND PUERTO RICO: 1-800-535-5053
OUTSIDE USA, CANADA, AND PUERTO RICO: 352-323-35000 (COLLECT CALLS
ACCEPTED)

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | CAS number |
|----------------------|-------------------|
| MemGlow™ fluorophore | none |

SECTION 3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

OSHA HAZARDS

TOXIC BY INGESTION, IRRITANT

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

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

POTENTIAL HEALTH EFFECTS

INHALATION

MAY BE HARMFUL IF INHALED. CAUSES
RESPIRATORY TRACT IRRITATION

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

NFPA RATINGS (SCALE 0-4)

FIRE = 1
HEALTH = 2
REACTIVITY = 0

HMIS RATINGS

HEALTH = 2
FIRE = 1
REACTIVITY = 0

GHS CLASSIFICATION:

SIGNAL WORD: DANGER



HAZARD PICTOGRAMS:

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

HEALTH HAZARD STATEMENTS:

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

PRECAUTIONARY STATEMENTS:

P261: AVOID BREATHING
DUST/FUMES/GAS/MIST/VAPORS/SPRAY
P264: WASH SKIN THOROUGHLY AFTER HANDLING
P270: DO NOT EAT, DRINK OR SMOKE WHEN USING THIS PRODUCT
P271: USE ONLY IN A WELL-VENTILATED AREA
P280: WEAR PROTECTIVE GLOVES/EYE PROTECTION/FACE PROTECTION
P301 + P312: IF SWALLOWED, CALL A POISON CENTER OR PHYSICIAN IF YOU FEEL UNWELL.
P302 + P352: IF ON SKIN: WSH WITH PLENTY OF SOAP AND WATER.

| | |
|-----------------|---|
| P304 + P340: | IF INHALED: REMOVE VICTIM TO FRESH AIR AND KEEP AT REST IN A POSITION COMFORTABLE FOR BREATHING. |
| P305+P351+P338: | IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES. REMOVE CONTACT LENSES IF PRESENT AND EASY TO DO. CONTINUE RINSING. |
| P332 + P313: | IF SKIN IRRITATION OCCURS: GET MEDICAL ADVICE/ATTENTION. |
| P337 + P313: | IF EYE IRRITATION PERSISTS: GET MEDICAL ADVICE/ATTENTION. |
| P362: | TAKE OFF CONTAMINATED CLOTHING AND WASH BEFORE REUSE. |
| P403 + P233: | STORE IN A WELL-VENTILATED PLACE. KEEP CONTAINER TIGHTLY CLOSED. |
| P405: | STORE LOCKED UP. |
| P501: | DISPOSE OF CONTENTS/CONTAINER TO AN APPROVED WASTE DISPOSAL PLANT. |

SECTION 4. FIRST-AID MEASURES

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

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

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

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

WASH CONTAMINATED CLOTHING BEFORE REUSE.

SECTION 5. FIREFIGHTING MEASURES

EXTINGUISHING MEDIA

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

ADVICE FOR FIREFIGHTERS

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

HAZARDOUS COMBUSTION PRODUCTS: HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS: CARBON OXIDES, NITROGEN OXIDES (NO_x), SULPHUR OXIDES, PHOSPHOROUS OXIDES, LITHIUM OXIDES

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES: WEAR PROTECTIVE CLOTHING, RESPIRATOR, CHEMICAL SAFETY GOGGLES, GLOVES. AVOID DUST FORMATION. 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: UPON RECONSTITUTION, ABSORB WITH LIQUID-BINDING MATERIAL (SAND, DIATOMITE, ACID BINDERS, UNIVERSAL BINDERS, SAWDUST). DISPOSE CONTAMINATED MATERIAL AS WASTE ACCORDING TO SECTION 13. ENSURE ADEQUATE VENTILATION. IN LYOPHILIZED FORM, PICK UP WITHOUT CREATING DUST. KEEP IN SUITABLE, CLOSED CONTAINERS FOR DISPOSAL.

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

SECTION 7. HANDLING AND STORAGE

HANDLING

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

INFORMATION ABOUT PROTECTION AGAINST EXPLOSIONS AND FIRES: NOT IGNITABLE

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES
STORAGE

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

FURTHER INFORMATION ABOUT STORAGE CONDITIONS: KEEP RECEPTACLE TIGHTLY SEALED.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CONTAINS NO SUBSTANCES WITH OCCUPATIONAL EXPOSURE LIMIT VALUES

PERSONAL PROTECTIVE EQUIPMENT

GENERAL PROTECTIVE AND HYGIENIC MEASURES

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

BREATHING EQUIPMENT

SHORT TERM FILTER DEVICE: FILTER P1 (EU EN 143) OR TYPE P5 (US)
DO NOT BREATHE. USE MECHANICAL EXHAUST SYSTEM

PROTECTION OF HANDS

PROTECTIVE GLOVES.

THE GLOVE MATERIAL HAS TO BE IMPERMEABLE AND RESISTANT TO THE PRODUCT/SUBSTANCE/PREPARATION. AS THE PRODUCT IS A PREPARATION OF SEVERAL SUBSTANCES, THE RESISTANCE OF THE GLOVE MATERIAL CANNOT BE CALCULATED IN ADVANCE AND THEREFORE HAS TO BE CHECKED PRIOR TO

APPLICATION. NO RECOMMENDATION CAN BE GIVEN FOR THE GLOVE MATERIAL FOR THIS PRODUCT. SELECT GLOVE MATERIALS BASE ON PENETRATION TIMES, RATES OF DIFFUSION AND DEGRADATION OF MATERIAL.

MATERIAL OF GLOVES

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

PENETRATION TIME OF GLOVE MATERIAL

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

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

NEOPRENE GLOVES

EYE PROTECTION: TIGHTLY SEALED GOGGLES AND FACE SHIELD

BODY PROTECTION: PROTECTIVE WORK CLOTHING

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

GENERAL INFORMATION

FORM: SOLID (LYOPHILIZED POWDER)

CHANGE IN CONDITION

MELTING POINT/MELTING RANGE: NO DATA AVAILABLE

BOILING POINT/BOILING RANGE: NO DATA AVAILABLE

FLASH POINT: NO DATA AVAILABLE

SELF-IGNITING: NO DATA AVAILABLE

DANGER OF EXPLOSION: NO DATA AVAILABLE.

DENSITY: 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: STRONG OXIDIZING AGENTS, STRONG ACIDS

POSSIBILITY OF HAZARDOUS REACTIONS: NO DANGEROUS REACTIONS KNOWN

HAZARDOUS COMBUSTION PRODUCTS: HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS: CARBON OXIDES, NITROGEN OXIDES (NO_x), SULPHUR OXIDES, PHOSPHOROUS OXIDES, LITHIUM OXIDES

SECTION 11. TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

ACUTE TOXICITY

NO DATA AVAILABLE

IRRITATION AND CORROSION

NO DATA AVAILABLE

SENSITIZATION

NO DATA AVAILABLE

CHRONIC EXPOSURE

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

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

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

POTENTIAL HEALTH EFFECTS

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

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

TOXIC BY INGESTION, IRRITANT

DSL STATUS:

2,3,3-TRIMETHYLINDOLENINE IS ON THE CANADIAN DSL LIST
1,1,2-TRIMETHYL-1H-BENZO[E]INDOLE IS ON THE CANADIAN DSL LIST
5-CHLORO-1-PENTYNE IS ON THE CANADIAN DSL LIST
TRIETHYL ORTHOFORMATE IS ON THE CANADIAN DSL LIST
MALONALDEHYDE DIANILIDE HYDROCHLORIDE IS ON THE CANADIAN DSL LIST
GLUTACONDIANIL HYDROCHLORIDE IS ON THE CANADIAN DSL LIST
GLUTARIC ANHYDRIDE IS ON THE CANADIAN DSL LIST
3-BROMO-1-PROPANOL IS ON THE CANADIAN DSL LIST
1,3-PROPANESULTONE IS ON THE CANADIAN DSL LIST
BORON TRIFLUORIDE ETHERATE IS ON THE CANADIAN DSL LIST

TSCA:

CAS# 1640-39-7 IS LISTED ON THE TSCA INVENTORY
CAS# 41532-84-7 IS LISTED ON THE TSCA INVENTORY
CAS# 14267-92-6 IS LISTED ON THE TSCA INVENTORY
CAS# 122-51-0 IS LISTED ON THE TSCA INVENTORY
CAS# 50328-50-2 IS LISTED ON THE TSCA INVENTORY
CAS# 1497-49-0 IS LISTED ON THE TSCA INVENTORY
CAS# 108-55-4 IS LISTED ON THE TSCA INVENTORY
CAS# 109-63-7 IS LISTED ON THE TSCA INVENTORY
CAS# 627-18-9 IS LISTED ON THE TSCA INVENTORY
CAS# 1120-71-4 IS LISTED ON THE TSCA INVENTORY

OSHA:

PROPANE SULTONE IS CONSIDERED HIGHLY HAZARDOUS BY OSHA

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

PROPANE SULTONE

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

PROPANE SULTONE

SARA 311/312 HAZARDS
ACUTE HEALTH HAZARD

STATE RIGHT TO KNOW COMPONENTS
PA AND NJ

NONE

CALIFORNIA PROP. 65 COMPONENTS
PROPANE SULTONE IS LISTED AS CAUSING CANCER

SAFETY PHRASES:
S22: DO NOT BREATHE DUST

RISK PHRASES:
R22: HARMFUL IF SWALLOWED
R36/37/38: IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN

HAZARD SYMBOLS:
XI

SECTION 16. OTHER INFORMATION

THIS INFORMATION IS BASED ON OUR PRESENT KNOWLEDGE. HOWEVER, THIS SHALL NOT CONSTITUTE A GUARANTEE FOR ANY SPECIFIC PRODUCT FEATURES AND SHALL NOT ESTABLISH A LEGALLY VALID CONTRACTUAL RELATIONSHIP. THE ABOVE INFORMATION WAS GATHERED BY DILIGENT RESEARCH AND / OR CONTROL AND THE RECOMMENDATIONS ARE BASED ON PRUDENT APPLICATION OF PROFESSIONAL JUDGMENT. THIS INFORMATION SHOULD NOT BE CONSIDERED AS EXHAUSTIVE AND SHOULD ONLY BE USED AS AN INDICATION. ALL PRODUCTS AND MIXTURES CAN PRESENT UNKNOWN HAZARDS AND SHOULD BE USED WITH CAUTION. THE ABOVE INFORMATION 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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