

MATERIAL SAFETY DATA SHEET

SECTION 1. CHEMICAL IDENTIFICATION

CATALOG/PRODUCT#: BK131

NAME: Ras G-LISA ACTIVATION ASSAY BIOCHEM KIT

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. COMPOSITION/INFORMATION ON INGREDIENTS

DESCRIPTION: MIXTURE OF THE SUBSTANCES/COMPOUNDS LISTED BELOW WITH EITHER HARMLESS CHEMICALS OR HAZARDOUS CHEMICALS AT <1% IN PROPRIETARY SOLUTIONS.

BINDING BUFFER (PART# GL37)	CAS#: PROPRIETARY EINECS: PROPRIETARY		12-24%
ANTIGEN PRESENTING BUFFER (PART# GL45)	CAS#: PROPRIETARY EINECS: PROPRIETARY	C; N; R35/50/53; S24/25 S26/36/37/39/45/61	1%
NONIDET P-40 (PART# GL36)	CAS#: 9016-45-9 EINECS: 500-024-6	XI, XN R22/41/37/38	10%
METHYL ALCOHOL (PART# GL50)	CAS#: 67-56-1 EINECS: 200-659-6	T; F; R11-23/24/25-39/23/24/25 FLAM. LIQ. 2, H225	4%

LOWER EXPLOSIVE LIMIT (LEL) FOR METHANOL IS 6%

ADDITIONAL INFORMATION: FOR THE WORDING OF THE LISTED SAFETY AND RISK PHRASES REFER TO SECTION 15

SECTION 3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW FOR BINDING BUFFER (PART# GL37)

OSHA HAZARDS: NO KNOWN OSHA HAZARDS

POTENTIAL ACUTE HEALTH EFFECTS:

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

EMERGENCY OVERVIEW FOR LYSIS BUFFER (PART# GL36)

OSHA HAZARDS: TARGET ORGAN EFFECT

TARGET ORGANS: ENDOCRINE

SIGNAL WORD: WARNING!

HAZARD STATEMENT: CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTION. MAY BE HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

PRECAUTIONARY MEASURES: DO NOT BREATHE VAPOR OR MIST. DO NOT INGEST. USE WITH ADEQUATE VENTILATION. DO NOT EAT, DRINK OR SMOKE WHEN USING THIS PRODUCT. AVOID CONTACT WITH EYES, SKIN AND CLOTHING. KEEP CONTAINER TIGHTLY CLOSED. WASH THOROUGHLY AFTER HANDLING.

ROUTES OF ENTRY: DERMAL CONTACT, EYE CONTACT, INHALATION, INGESTION

POTENTIAL ACUTE HEALTH EFFECTS:

INHALATION	IRRITATING TO RESPIRATORY SYSTEM
INGESTION	HARMFUL IF SWALLOWED
SKIN	IRRITATING TO SKIN
EYES	SEVERELY IRRITATING TO EYES. RISK OF SERIOUS DAMAGE TO EYES

POTENTIAL CHRONIC HEALTH EFFECTS:

CHRONIC EFFECTS	CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.
CARCINOGENICITY	NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS
MUTAGENICITY	NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS
TERATOGENICITY	NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS

DEVELOPMENTAL EFFECTS	NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS
FERTILITY EFFECTS	NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS
TARGET ORGANS	CONTAINS MATERIAL WHICH MAY CAUSE DAMAGE TO THE FOLLOWING ORGANS: ENDOCRINE

EMERGENCY OVERVIEW FOR LYSIS BUFFER (PART# GL45)

OSHA HAZARDS

TARGET ORGAN EFFECT, CORROSIVE, CARCINOGEN

TARGET ORGANS

CENTRAL NERVOUS SYSTEM

SIGNAL WORD

DANGER

FOR TOTAL KIT:

NFPA RATINGS (SCALE 0-4)

FIRE = 1

HEALTH = 3

REACTIVITY = 0

OSHA RATINGS

FIRE = 1

HEALTH = 3

SECTION 4. FIRST-AID MEASURES

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

AFTER SKIN CONTACT: IMMEDIATELY RINSE WITH WATER FOR AT LEAST 15 MINUTES. CONSULT PHYSICIAN IMMEDIATELY

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

AFTER SWALLOWING: DO NOT INDUCE VOMITING. DRINK COPIOUS AMOUNTS OF WATER AND PROVIDE FRESH AIR. CALL FOR PHYSICIAN IMMEDIATELY WASH CONTAMINATED CLOTHING BEFORE REUSE.

SECTION 5. FIREFIGHTING MEASURES

CONDITIONS OF FLAMMABILITY

NONIDET P-40

CAS#: 9016-45-9

METHANOL

CAS#: 67-56-1

IN A FIRE OR IF HEATED, A PRESSURE INCREASE WILL OCCUR AND THE CONTAINER MAY BURST.

ALL OTHER KIT COMPONENTS ARE NOT FLAMMABLE OR COMBUSTIBLE

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 AND HYDROGEN CHLORIDE GAS

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES: WEAR PROTECTIVE CLOTHING, RESPIRATOR, CHEMICAL SAFETY GOGGLES, RUBBER GLOVES. AVOID DUST FORMATION. AVOID BREATHING 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). 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: ENSURE GOOD VENTILATION/EXHAUSTION AT THE WORKPLACE. AVOID CONTACT WITH SKIN AND EYES. AVOID INHALATION OF VAPOR OR MIST

INFORMATION ABOUT PROTECTION AGAINST EXPLOSIONS AND FIRES: NO SPECIAL PRECAUTIONS ARE NECESSARY.

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

COMPONENTS WITH LIMIT VALUES THAT REQUIRE MONITORING AT THE WORKPLACE:

FOR PART# GL45

ACGIH TLV
TWA: 1 ppm

OSHA LIMITS FOR AIR CONTAMINANTS
TWA: 1 ppm; 7 mg/m³

NIOSH RECOMMENDED EXPOSURE LIMITS
TWA: 1 ppm; 7 mg/m³

REMARKS: EYE AND UPPER RESPIRATORY TRACT IRRITATION. CONFIRMED ANIMAL CARCINOGEN WITH UNKNOWN RELEVANCE TO HUMANS: THE AGENT IS CARCINOGENIC IN EXPERIMENTAL ANIMALS AT A RELATIVELY HIGH DOSE BY ROUTE(S) OF ADMINISTRATION, AT SITE(S), OF HISTOLOGIC TYPE(S), OR BY MECHANISMS(S) THAT MAY NOT BE RELEVANT TO WORKER EXPOSURE. AVAILABLE EPIDEMIOLOGIC STUDIES DO NOT CONFIRM AN INCREASED RISK OF CANCER IN EXPOSED HUMANS. AVAILABLE EVIDENCE DOES NOT SUGGEST THAT THE AGENT IS LIKELY TO CAUSE CANCER IN HUMANS EXCEPT UNDER UNCOMMON OR UNLIKELY ROUTES OR LEVELS OF EXPOSURE.

FOR PART# GL50

67-56-1 METHANOL

PEL	260 mg/m ³ , 200 PPM
REL	SHORT-TERM VALUE: 325 mg/m ³ , 250 PPM LONG-TERM VALUE: 260 mg/m ³ , 200 PPM
TLV	SHORT-TERM VALUE: 328 mg/m ³ , 250 PPM LONG-TERM VALUE: 262 mg/m ³ , 200 PPM SKIN; BEI

FOR PART# GL37

WORKPLACE ENVIRONMENTAL EXPOSURE LEVELS (WEEL)
TWA: 10 mg/m³

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
IMMEDIATELY REMOVE ALL SOILED AND CONTAMINATED CLOTHING
AVOID CONTACT WITH THE EYES AND SKIN

BREATHING EQUIPMENT

WHERE AIR-PURIFYING RESPIRATORS ARE APPROPRIATE, USE A FULL-FACE PARTICLE RESPIRATOR TYPE N100 OR TYPE P3 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. 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: LIQUIDS AND LYOPHILIZED PRODUCTS

COLOR: CLEAR

ODOR: UNDETERMINED

pH-VALUE AT 20°C: 5.5-8

CHANGE IN CONDITION

MELTING POINT/MELTING RANGE: UNDETERMINED

BOILING POINT/BOILING RANGE: UNDETERMINED

FLASH POINT: NOT DETERMINED.

SELF-IGNITING: UNDETERMINED

DANGER OF EXPLOSION: PRODUCTS ARE 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 (PART# GL50)

ORGANIC SOLVENT: 4% (METHANOL)
WATER: 96%
SEE SECTION 10.

SECTION 10. STABILITY AND REACTIVITY

REACTIVITY

CHEMICAL STABILITY

STABLE WHEN STORED AS DIRECTED.

THERMAL DECOMPOSITION/CONDITIONS TO BE AVOIDED: EXPOSURE TO MOISTURE. HEAT

POSSIBILITY OF HAZARDOUS REACTIONS: NO DANGEROUS REACTIONS KNOWN

MATERIALS TO AVOID: STRONG BASES, STRONG OXIDIZING AGENTS, AMINES

HAZARDOUS DECOMPOSITION PRODUCTS: HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS –CARBON OXIDES (PART# GL37 OR GL52, GL39 OR GL45), HYDROGEN CHLORIDE GAS (PART# GL45)

SECTION 11. TOXICOLOGICAL INFORMATION

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

INFORMATION ON TOXICOLOGICAL EFFECTS FOR PART# GL36

NONIDET P-40
LD50 DERMAL -RABBIT- 2 mL/kg
LD50 INTRAPERITONEAL -RAT- 770 mg/kg
LD50 ORAL -RAT- 1310-4000 mg/kg
LD50 ORAL -RAT- 2590 U1/kg

INFORMATION ON TOXICOLOGICAL EFFECTS FOR PART# GL45

ACUTE TOXICITY

ORAL LD50

LD50 ORAL -RAT- 3,320 mg/kg

INHALATION LC50

NO DATA AVAILABLE

DERMAL LD50

NO DATA AVAILABLE

SKIN CORROSION/IRRITATION

NO DATA AVAILABLE

SERIOUS EYE DAMAGE/EYE IRRITATION

EYES -RABBIT- SEVERE EYE IRRITATION -5 SEC

RESPIRATORY OR SKIN SENSITIZATION

NO DATA AVAILABLE

GERM CELL MUTAGENICITY

NO DATA AVAILABLE

CARCINOGENICITY

THIS PRODUCT IS NOT CLASSIFIABLE AS TO ITS CARCINOGENICITY BASED ON ITS IARC, ACGIH, NTP OR EPA CLASSIFICATION.

REPRODUCTIVE TOXICITY

NO DATA AVAILABLE

TERATOGENICITY

NO DATA AVAILABLE

SPECIFIC TARGET ORGAN TOXICITY (SINGLE OR REPEATED EXPOSURE)

NO DATA AVAILABLE

ASPIRATION HAZARD

NO DATA AVAILABLE

POTENTIAL HEALTH EFFECTS

INHALATION	MAY BE HARMFUL IF INHALED. MATERIAL IS EXTREMELY DESTRUCTIVE TO THE TISSUE OF THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT
INGESTION	MAY BE HARMFUL IF SWALLOWED
SKIN	MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES SKIN BURNS
EYES	CAUSES EYE BURNS. CAUSES SEVERE EYE BURNS.

SIGNS AND SYMPTOMS OF EXPOSURE

BURNING SENSATION, COUGH, WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, SPASM, INFLAMMATION AND EDEMA OF LARYNX, INFLAMMATION AND EDEMA OF THE BRONCHI, PNEUMONITIS, PULMONARY EDEMA.

INFORMATION ON TOXICOLOGICAL EFFECTS FOR PART# GL50 (METHANOL)

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)

INFORMATION ON TOXICOLOGICAL EFFECTS FOR PART# GL37

NO DATA AVAILABLE ON ACUTE TOXICITY, SKIN CORROSION/IRRITATION, SERIOUS EYE DAMAGE/EYE IRRITATION, RESPIRATORY OR SKIN SENSITIZATION, GERM CELL MUTAGENICITY, REPRODUCTIVE TOXICITY, SPECIFIC ORGAN TOXICITY (SINGLE OR REPEATED EXPOSURE) OR ASPIRATION HAZARD.

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.

POTENTIAL ACUTE HEALTH EFFECTS:

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

TOXICITY TO ANIMALS:

ACUTE ORAL TOXICITY
LD50 -RABBIT- 26800 mg/kg

ACUTE DERMAL TOXICITY
LD50 -RABBIT- >20000 mg/kg

ACUTE TOXICITY OF THE VAPOR
LC50 -RAT- >138 HOURS

SECTION 12. ECOLOGICAL INFORMATION

INFORMATION FOR PART# GL45

TOXICITY

TOXIC TO FISH AND AQUATIC LIFE WITH LONG LASTING EFFECTS

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: 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.
HAND OVER TO HAZARDOUS WASTE DISPOSERS.
CONTAMINATED PACKAGING: DISPOSE OF AS UNUSED PRODUCT
OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

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

TARGET ORGAN EFFECT (PART# GL45)
IRRITATING MATERIALS (PART# GL36-NONIDET P-40)
SENSITIZING MATERIALS (PART# GL36-NONIDET P-40)
CORROSIVE, CARCINOGEN (PART# GL45)

U.S. REGULATORY INFORMATION

TSCA: NONIDET P-40, METHANOL

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

NONIDET P-40 IS LISTED AS HAZARDOUS CHEMICAL

SECTION 313 (40CFR372.65):

67-56-1 METHANOL

SARA 311/312 HAZARDS

ACUTE HEALTH HAZARD, CHRONIC HEALTH HAZARD (PART# GL45)

MARKINGS ACCORDING TO EU GUIDELINES:

CODE LETTER AND HAZARD DESIGNATION OF PRODUCT:

C: CORROSIVE (PART# GL45)
N: DANGEROUS TO ENVIRONMENT (PART# GL45)
XN: HARMFUL (PART# GL50-METHANOL AND PART# GL36-NONIDET P-40)
XI: IRRITANT (PART# GL50-METHANOL AND PART# GL36-NONIDET P-40)

CANADA REGULATORY INFORMATION

PART# GL37
ON THE CANADIAN DSL LIST

NONIDET P-40 (PART# GL36) AND METHANOL (PART# GL50)
WHMIS CLASSIFICATION: CLASS D DIV 1B, CLASS D DIV 2B; CLASS B DIV 2

PART# GL45
CLASS E: CORROSIVE SOLID

STATE REGULATIONS

PA, NJ (PART# GL37)
MA, NJ, PA (PART# GL45)
MA, NY, NJ, PA, FL (PART# GL50-METHANOL)

HAZARD SYMBOLS:

FOR PART# GL36 (NONIDET P-40) AND PART# GL50 (4% METHANOL)

Xn: HARMFUL, CAUSES RESPIRATORY TRACT, EYE & SKIN IRRITATION. CAN CAUSE TARGET ORGAN DAMAGE.
Xi : IRRITANT, CAUSES RESPIRATORY TRACT, EYE & SKIN IRRITATION. CAN CAUSE TARGET ORGAN DAMAGE.

FOR PART# GL45

C: CORROSIVE
N: DANGEROUS TO ENVIRONMENT

DEFINITIONS:

RISK PHRASES: 68/20/21/22 HARMFUL: POSSIBLE RISK OF IRREVERSIBLE EFFECTS THROUGH INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
R26-TOXIC BY INHALATION
R27-TOXIC IN CONTACT WITH SKIN
R28-TOXIC IF SWALLOWED
R35-CAUSES SEVERE BURNS
R37/38-IRRITATING TO RESPIRATORY SYSTEM AND SKIN
R41-RISK OF SERIOUS DAMAGE TO EYES
R50/53-VERY TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN AQUATIC ENVIRONMENT

SAFETY PHRASES:

S24-AVOID CONTACT WITH SKIN
S25-AVOID CONTACT WITH EYES
S26-IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE
S36-WEAR PROTECTIVE CLOTHING
S37-WEAR PROTECTIVE GLOVES
S39-WEAR EYE/FACE PROTECTION
S41-DO NOT BREATHE FUMES IN A FIRE OR EXPLOSION
S42-WEAR RESPIRATORY EQUIPMENT WHEN SPRAYING
S45-IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY.
S60-THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF AS HAZARDOUS WASTE.
S61-AVOID RELEASE INTO ENVIRONMENT

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

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. COMPOSITION/INFORMATION ON INGREDIENTS

BENZAMIDINIUM CHLORIDE CAS#: 206752-36-5
EC#: 216-795-4

SYNONYMS: AMIDINOBENZENE HYDROCHLORIDE, BENZAMIDINIUM CHLORIDE,
BENZENECARBOXIMIDAMIDE HYDROCHLORIDE
FORMULA: $C_7H_8N_2 ClH H_2O$
MOLECULAR WEIGHT: 156.61 g/mol

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

FORMULA: $C_{34}H_{63}N_5O_9 C_{34}H_{63}N_5O_9$
MOLECULAR WEIGHT: 685.89 g/mol

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

FORMULA: $C_{20}H_{38}N_6O_4 HCl$
MOLECULAR WEIGHT: 463.01 g/mol

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

SYNONYMS: TAME HYDROCHLORIDE
FORMULA: $C_{14}H_{22}N_4O_4S HCl$
MOLECULAR WEIGHT: 378.87 g/mol

SECTION 3. 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 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 α -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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