

MATERIAL SAFETY DATA SHEET
for
CytoSol Biosolvent

EMERGENCY PHONE: 1-510-233-0102
MSDS REFERENCE: **CytoCulture International, Inc.**

SECTION I - IDENTIFICATION

PRODUCT: **CytoSol Biosolvent** proprietary formulation includes methyl esters
SYNONYMS: Formulation of methyl esters of plant (soy) oil and macronutrients
CAS NO.: None
SARA HAZARD: None noted (Section 311/312)
Title III Section 313 - Not Listed
DOT Regs: Not regulated by DOT.

SECTION II - INGREDIENTS AND HAZARD CLASSIFICATION

<u>COMPOSITION (Typical)</u>	<u>PEL/TLV</u>	<u>HAZARD</u>
METHYL ESTERS	NONE/NONE	NONE NOTED

PCBs: Not detected at or above reporting limit of 800µg/kg

<u>METALS ANALYSIS</u>	<u>RESULTS (mg/kg)</u>	<u>REPORTING LIMIT (mg/kg)</u>
ARSENIC	ND	2.4
CADMIUM	ND	0.24
CHROMIUM (Total)	ND	0.49
COPPER	ND	0.49
LEAD	ND	4.9
MERCURY	ND	0.091
NICKEL	ND	0.97
ZINC	ND	0.97

SECTION III - HEALTH INFORMATION

INHALATION: UNKNOWN - NONE SUSPECTED
INGESTION: LD₅₀>50 ML/KG (ALBINO RATS) (SIMILAR PRODUCTS)
EYE CONTACT: SIMILAR PRODUCTS WERE NOT CLASSIFIED AS EYE IRRITANTS.
SKIN CONTACT: METHYL SOYATE WAS NOT CLASSIFIED AS A PRIMARY SKIN IRRITANT OR CORROSIVE MATERIAL.

SECTION IV - OCCUPATIONAL EXPOSURE LIMITS

PEL: NO OSHA PEL
TLV: NO ACGTH TLV

SECTION V - EMERGENCY FIRST AID PROCEDURES

FOR OVEREXPOSURE BY <u>SWALLOWING</u> :	Non-toxic, however, call a physician promptly.
FOR OVEREXPOSURE BY <u>SKIN CONTACT</u> :	Non-irritating, but wash affected area with soap & water.
FOR OVEREXPOSURE BY <u>EYE CONTACT</u> :	Immediately flush eyes with plenty of cool water for at least 15 minutes. Do not let victim rub eyes.
FOR OVEREXPOSURE BY <u>INHALATION</u> :	Non-irritating and non-toxic, but immediately remove victim to fresh air. If victim has stopped breathing, give artificial respiration, preferably by mouth-to-mouth. Get medical attention immediately.

SECTION VI - PHYSICAL DATA

BOILING POINT:	Over 400° F (204° C) at 760 MM Pressure
POUR POINT:	+10° F (-12° C) [ASTM D97-93]
VAPOR PRESSURE:	Less than 1 MM HG Pressure @ 162°F (72° C); NON EXPLOSIVE
SPECIFIC GRAVITY:	0.8877 @ 60°F (15.6°C) [ASTM D1298-85(90)]
SOLUBILITY IN WATER:	NEGLIGIBLE AT ROOM TEMPERATURE
APPEARANCE AND COLOR:	LIGHT AMBER TO CLEAR LIQUID AT ROOM TEMPERATURE
VISCOSITY:	4.15 CST @ 104°F (40°C) [ASTM, D92-90]

SECTION VII - FIRE AND EXPOSION HAZARDS

FLASH POINT/METHOD USED:	360° F (182° C) [ASTM, D445-88]
FLAMMABLE LIMITS IN AIR, % BY VOL. LOWER:	NOT APPLICABLE/NON-VOLATILE
FLAMMABLE LIMITS IN AIR, BY VOL. UPPER.:	NOT APPLICABLE/NON-VOLATILE
NFPA RATING:	NO NFPA RATING
HMIS RATING:	HEALTH (0) FIRE (1) REACTIVITY (0)

SPECIAL FIRE FIGHTING PROCEDURES & PRECAUTIONS:

(INDIVIDUALS SHOULD PERFORM ONLY THOSE FIRE FIGHTING PROCEDURES FOR WHICH THEY HAVE BEEN TRAINED). USE WATER SPRAY, DRY CHEMICAL, FOAM OR CARBON DIOXIDE. WATER MAY BE INEFFECTIVE, BUT SHOULD BE USED TO KEEP FIRE-EXPOSED CONTAINERS COOL. WATER SPRAY MAY BE USED TO FLUSH SPILLS AWAY FROM FIRE.

USUAL FIRE & EXPLOSION HAZARDS:

OIL SOAKED RAGS CAN CAUSE SPONTANEOUS COMBUSTION IF NOT HANDLED PROPERLY. BEFORE DISPOSAL, WASH RAGS WITH SOAP AND WATER AND DRY IN WELL VENTILATED AREA.

FIRE FIGHTERS SHOULD WEAR SELF-CONTAINED BREATHING APPARATUS IN THE POSITIVE-PRESSURE MODE WITH A FULL FACEPIECE WHEN THERE IS A POSSIBILITY OF EXPOSURE TO SMOKE, FUMES OR HAZARDOUS DECOMPOSITION PRODUCTS (CO₂ AND CO).

SECTION VIII - REACTIVITY

STABILITY: GENERALLY STABLE
HAZARDOUS POLYMERIZATION: NONE LIKELY
CONDITIONS & MATERIALS TO AVOID: AVOID CONTACT WITH STRONG OXIDIZING AGENTS.
SOLVENT ACTION DISSOLVES RUBBER MATERIALS,
STYROFOAM AND POLYURETHANE
HAZARDOUS DECOMPOSITION PRODUCTS: COMBUSTION WOULD PRODUCE CARBON
MONOXIDE AND CARBON DIOXIDE.

SECTION IX - EMPLOYEE PROTECTION

CONTROL MEASURES: HANDLE IN THE PRESENCE OF ADEQUATE VENTILATION WHEN
USED TO DISSOLVE CRUDE OIL AND SPILLED PETROLEUM.
RESPIRATORY PROTECTION: RECOMMENDED EXPOSURE LIMITS (i.e. OSHA-PEL AND ACGH-
TLV) HAVE NOT BEEN ESTABLISHED FOR THIS MATERIAL.
WHETHER THERE IS A NEED FOR RESPIRATORY PROTECTION
UNDER YOU CONDITIONS OF HANDLING OF THIS MATERIAL
SHOULD BE EVALUATED BY A QUALIFIED HEALTH SPECIALIST.
PROTECTIVE CLOTHING: GLOVES RECOMMENDED FOR ANY APPLICATION INVOLVING
THE CLEANUP OR DEGREASING OF WASTE OIL.
EYE PROTECTION: WEAR SAFETY GLASSES PER ANSI STANDARD Z87.1

SECTION X - ENVIRONMENTAL PROTECTION

ENVIRONMENTAL PRECAUTIONS: AVOID UNCONTROLLED RELEASES OF THIS MATERIAL.
WHERE SPILLS ARE POSSIBLE, A COMPREHENSIVE SPILL
RESPONSE PLAN SHOULD BE DEVELOPED AND
IMPLEMENTED. PREVENT RELEASES TO WATER.
SPILL OR LEAK PRECAUTIONS: CONTAIN SPILLED MATERIAL AND TRANSFER TO SECURE
CONTAINERS. WHERE NECESSARY, COLLECT USING
ABSORBENT MEDIA, WASH DOWN AREA WITH DETERGENT.
IN THE EVENT OF AN UNCONTROLLED RELEASE OF THIS
MATERIAL, THE USER SHOULD DETERMINE IF THE
RELEASE IS REPORTABLE UNDER APPLICABLE LAWS AND
REGULATIONS. USE DOUBLE CONTAINMENT IF POSSIBLE.
WASTE DISPOSAL: ALL RECOVERED MATERIAL SHOULD BE PACKAGED,
LABELED, TRANSPORTED, AND DISPOSED OR RECLAIMED
IN CONFORMANCE WITH APPLICABLE LAWS AND
REGULATIONS AND IN CONFORMANCE WITH GOOD
ENGINEERING PRACTICES. AVOID LANDFILLING OF
LIQUIDS. RECYCLE UNUSED PRODUCT AT REGULAR OIL
COLLECTION FACILITY OR BLEND WITH BURNER FUEL.
MARINE TOXICITY: *MYSIDOPSIS BAHIA* (U.S. EPA 1991) BIOASSAY: LC₅₀ = 122 PPM.
MENIDIA BERYLLINA (U.S. EPA 1990) BIOASSAY: LC₅₀=578 PPM
TOXICITY BELIEVED TO BE DUE TO RESTRICTED OXYGEN
DIFFUSION ON WATER SURFACE BY FLOATING PRODUCT.
BIODEGRADABILITY: BIODEGRADES IN SEAWATER WITH A HALF-LIFE OF 4 DAYS. IN
EPA STANDARD BIODEGRADATION ASSAY, THE PRODUCT IS
COMPLETELY BIODEGRADED TO CARBON DIOXIDE IN 28 DAYS

SECTION XI - REGULATORY CONTROLS

OTHER REGULATORY REQUIREMENTS: LISTED IN TSCA INVENTORY(SOY METHYL ESTERS)

**LISTED ON EPA'S NATIONAL CONTINGENCY PLAN (NCP)
SCHEDULE OF PRODUCTS (1997) USED IN OIL SPILL CLEAN UPS**

**LICENSED IN CALIFORNIA AS A SHORELINE CLEANER FOR USE IN SENSITIVE AQUATIC
OR MARINE ECOSYSTEMS DURING OIL SPILL CLEANUPS.**

SECTION XII-PRECAUTIONS: STORAGE, HANDLING AND USAGE

NO SPECIAL HEALTH PRECAUTIONS ARE NECESSARY. HOWEVER, CYTOSOL SHOULD BE HANDLED AND TREATED WITH THE SAME ENVIRONMENTAL SAFETY PRECAUTIONS AS ANY SOLVENT. AVOID CONTACT WITH STYROFOAM, POLYURETHANE AND NATURAL RUBBER PRODUCTS - SOLVENT ACTION WILL DISSOLVE THESE MATERIALS. DO NOT EXPOSE TO OLD PAINTED SURFACES, CAULKING, RUBBER OR OTHER POLYMERS NOT SPECIFICALLY DESIGNED TO HANDLE SOLVENTS. IN CASE OF SPILLS, WIPE UP OR VACUUM SPILLED PRODUCT AND IMMEDIATELY WATERWAYS OR STORM SEWERS.

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PREPARED BY: **Bartholomew W. J. St. Denis**
President & Director of Research

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CytoCulture International, Inc.
249 Tewksbury Avenue
Point Richmond, CA 94801
Email: RvW@cytoculture.com

TEL: 510-233-0102
FAX: 510-233-3777
CELL: 561-762-5440