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PRODUCT INFORMATION BULLETIN

VERTECBIO CITRUS #1

Regulatory Agency Information
 OSHA-DOT

PREPARATION/REVISION DATE
 LMP 02/09/07

Product Information Bulletin
MATERIAL SAFETY DATA SHEET

TRADE NAME: VertecBio Citrus #1

D-LIMONENE BLEND

SECTION 1

MANUFACTURER'S NAME VERTEC BIOSOLVENTS, INC.			EMERGENCY TELEPHONE NO. 800-424-9300 (CHEMTREC)		
ADDRESS 1441 Branding Lane, Suite 100 Downers Grove, Illinois 60515 USA					
CHEMICAL NAME d-Limonene/Ethyl Hydroxy Propionate			COMMON NAME d-Limonene/Ethyl Lactate		
DOT CLASSIFICATION Combustible Liquid			FORMULA Blend		
CHEMICAL OR COMMON NAME Ethyl lactate	PERCENT 20-80	CAS NO. 97-64-3	APPLICABLE PEL-OSHA None established	EXPOSURE LIMITS TLV-ACGIH None established	

SECTION 2 HAZARDOUS INGREDIENTS

CHEMICAL OR COMMON NAME	PERCENT	CAS NO.	APPLICABLE PEL-OSHA	EXPOSURE LIMITS TWA-AIHA
d-Limonene	20-80	8028-48-6	None established	8 hour TWA = 30ppm

CARCINOGENIC INGREDIENTS

CHEMICAL OR COMMON NAME	%	REFERENCE IARC	SOURCE NTP	OSHA	OTHER
None identified	-	-	-	-	-

SECTION 3 HEALTH HAZARD DATA

ACUTE HEALTH EFFECTS
 Eyes Irritant.
 Skin Contact May be irritating to skin. Contains a potential skin sensitizer.
 Ingestion Product is harmful if swallowed.
 Inhalation Prolonged exposure may cause irritation of mucous membranes.

CHRONIC HEALTH EFFECTS
 None known, not listed as a carcinogen.

ROUTES OF ENTRY
 Most common, skin and inhalation.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
 Mist may cause eye/respiratory irritation with coughing.

SECTION 4 FIRST AID MEASURES

EYES	Immediately flush with water for at least 15 minutes. See a medical doctor immediately.
SKIN	Wash affected area with soap and water.
INHALATION	Remove person to fresh air. If discomfort occurs and persists, obtain medical attention.
INGESTION	See a medical doctor immediately. Do not induce vomiting.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA	Water fog, carbon dioxide (CO ₂), dry chemical.
SPECIAL FIREFIGHTING PROCEDURES	Wear a self-contained breathing apparatus.
DEGREE OF FIRE AND EXPLOSION HAZARD	Moderate. Rags soaked with any solvent can present a fire hazard and should be stored in UL listed or Factory Mutual approved, covered containers. Not an explosion hazard.
HAZARDOUS DECOMPOSITION PROCEDURES	None required when completely combusted; decomposes to water and CO ₂ . However, during a fire, incomplete combustion can result in the production of CO along with an acrid and irritating smoke.

SECTION 6 ACCIDENTAL RELEASE / SPILL MEASURES

PROCEDURE FOR RELEASE OR SPILL	Cover with large quantity of absorbent material (e.g. kitty litter) and collect in drums for disposal. Clean contaminated area with soap and water.
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SECTION 7 CHEMICAL AND PHYSICAL DATA									
MELTING POINT (°C)	Not applicable	SPECIFIC GRAVITY (H ₂ O=1)	0.921						
BOILING POINT	292° F	PERCENT VOLATILE BY VOLUME (%)	97+						
VAPOR PRESSURE (mmHg)	1.0 @ 68°F	EVAPORATION RATE (butyl acetate=1)	0.26						
VAPOR DENSITY (AIR=1)	Not determined (>1)	pH OF WATER DISPERSION	5.5, 10% solution						
SOLUBILITY	50%, in water	APPEARANCE AND ODOR	Clear, colorless to slightly yellow liquid, with a mild orange aroma.						
FLASH POINT	127° F, ASTM D93	FLAMMABLE LIMITS	<table border="1"> <tr> <td>@ 212 F</td> <td>LeI</td> <td>Uel</td> </tr> <tr> <td></td> <td>No data</td> <td>No data</td> </tr> </table>	@ 212 F	LeI	Uel		No data	No data
@ 212 F	LeI	Uel							
	No data	No data							
EXTINGUISHING MEDIA – Water fog, foam, CO ₂		ODOR THRESHOLD	No data						
SPECIAL FIRE FIGHTING PROCEDURES		BULK DENSITY (G/ML)							
None required		PARTITION COEFFICIENT (n-octanol/water)	No data						
INCOMPATIBILITY (materials to avoid)		AUTOIGNITION TEMPERATURE	No data						
Strong oxidizing agents, acids, halogens peroxides, vinyl chloride, and iodine pentafluoride.		EXPLOSIVE PROPERTIES	Not applicable						
HAZARDOUS DECOMPOSITION PRODUCTS		OXIDIZING PROPERTIES	Not applicable						
Incomplete combustion can result in the production of CO.									
SECTION 8 STABILITY AND REACTIVITY DATA									
STABILITY		Stable							
HAZARDOUS POLYMERIZATION		None known							
CONDITIONS TO AVOID		None known							
MATERIALS TO AVOID		Strong oxidizing agents, acids, halogens, peroxides, vinyl chloride and iodine pentafluoride.							
CONTAMINANTS THAT CONTRIBUTE TO INSTABILITY		None known							
INCOMPATIBILITY		None known							
HAZARDOUS DECOMPOSITION PRODUCTS		Incomplete combustion can result in the production of CO.							
SENSITIVITY TO MECHANICAL IMPACT		None known							
SENSITIVITY TO STATIC DISCHARGE		None known							
SECTION 9 TOXICOLOGICAL INFORMATION									
EYE CONTACT		Irritant							
SKIN CONTACT		No data available							
SKIN ABSORPTION		No data available							
INHALATION		No data available							
INGESTION		No data available							
ACUTE EFFECTS FROM OVEREXPOSURE		May cause irritation of the eyes.							
CHRONIC EFFECTS FROM OVEREXPOSURE		None identified							
(effects considered include: sensitivities, carcinogenicity, teratogenicity, mutagenicity, synergistic products, and any medical conditions generally recognized as being aggravated by exposure)									
SECTION 10 ECOLOGICAL INFORMATION									
ENVIRONMENTAL FATE		100% Biodegradable							
ENVIRONMENTAL EFFECTS		No adverse effects known or suspected. Not listed as a toxic chemical under SARA Title III 302, 304 or 313.							
SECTION 11 HANDLING AND STORAGE									
HANDLING		Keep container tightly closed. Minimize exposure to air. Store in a cool, dry, well-ventilated, liquid storage area.							
VENTILATION		Use adequate general or local exhaust ventilation to keep vapor and mist levels as low as possible.							
STORAGE		Store in a cool dry area, away from oxidizers and acids.							
SECTION 12 EXPOSURE CONTROL / PERSONAL PROTECTION									
RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT		None required where adequate ventilation conditions exist.							
RESPIRATORY									
VENTILATION		Recommended							
Local Exhaust		In most cases adequate ventilation can be achieved by use of an industrial floor or pedestal fan, combined with sizable inlet and outlet openings to the workspace, such as doors and/or windows.							
Mechanical (general)		Use chemical goggles.							
EYE PROTECTION		Use impervious gloves to prevent skin contact.							
GLOVES		Aprons recommended. If clothing becomes contaminated, remove and launder before reuse.							
SPECIAL CLOTHING AND EQUIPMENT		None identified							
OTHER PROTECTIVE EQUIPMENT		Industrial safety shoes are recommended in all industrial settings.							
FOOT PROTECTION		None identified							
OTHER ENGINEERING CONTROLS		Do not smoke in areas of storage or use. Avoid all contact with skin and eyes.							
WORK PRACTICES		Minimize eye and skin contact by using appropriate protective equipment. Use local or general room ventilation to control vapors or mist that may be generated into the work environment.							
CONTROL MEASURES									

SECTION 13 SPECIAL PRECAUTIONS DATA**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**

Avoid all contact with eyes or skin. Wear the appropriate protective equipment. Protect containers from physical damage.

MAINTENANCE PERSONNEL

Wash down vessels. Check the oxygen and combustible vapor content of the vessel atmosphere. Use the appropriate protective equipment.

SECTION 14 DISPOSAL PROCEDURES**WASTE DISPOSAL METHOD**

Take up with sand or other non-combustible absorbent material and place into container for later disposal. Wash area with soap and water. Dispose in accordance with all applicable Federal, State, and local environmental regulations. Spent product may be offered for fuel blending incineration.

SECTION 15 TRANSPORT INFORMATION**DOT PROPER SHIPPING NAME**

VertecBio Citrus #1 (under 119 gallons)

IATA

UN1993, Flammable liquids, n.o.s. (d-Limonene), 3, PG III

IMDG

UN1993, Flammable liquids, n.o.s. (d-Limonene), 3, PG III

DOT CLASSIFICATION

Combustible liquid

DOT LABELS

None required, under 119 gallons.

DOT MARKING

Not applicable

DOT PLACARD

Bulk: Combustible Liquid, 1993

IDENTIFICATION NUMBER

NA 1993

PACKAGING GROUP

III

HAZARDOUS SUBSTANCE/RQ

None

49 STCC NUMBER

Not applicable

PRECAUTIONS TO BE TAKEN IN TRANSPORTATION

None needed

OTHER SHIPPING INFORMATION

None

SECTION 16 REGULATORY INFORMATION**OSHA EXPOSURE LIMITS SUBSTANCE(S)**

d-Limonene, Ethyl Lactate

OSHA PEL-TWA

None established

STEL

None established

CEILING

None established

SKIN DESIGNATION

None established

ACGIH TLV-TWA

None established

STEL

None established

CEILING

None established

SKIN DESIGNATION

None established

TARGET ORGAN EFFECTS

Eye

CARCINOGENIC POTENTIAL

None

REGULATED BY OSHA

No

LISTED ON NTP REPORT

No

IARC GROUP 1, 2A, 2D

No

US EPA REQUIREMENTS RELEASE REPORTING CERCLA**(40 CFR 302)****LISTED SUBSTANCE(S)**

Not listed

RQ

Not applicable

Category

Not applicable

RCRA waste number

Not applicable

UNLISTED SUBSTANCE(S)

d-limonene, Ethyl Lactate

RQ

None

Characteristic

Ignitability

RCRA waste number

D001

SARA TITLE III SEC 313 (40 CFR 372)**LISTED TOXIC CHEMICAL**

Not listed

INVENTORY REPORTING SARA TITLE III SEC 311/312**(40 CFR 370)****Substance(s)**

Not listed

Hazard category

Not applicable

Planning threshold

Not applicable

Emergency planning

Not applicable

SARA TITLE III SEC 302-303 (40 CFR 355)**Listed substance(s)**

Not listed

RQ

Not applicable

Planning threshold

Not applicable

US TSCA STATUS

Listed

CANADA INGREDIENT DISCLOSURE LIST SUBSTANCE(S)**CONTROLLED PRODUCT**

d-Limonene

HAZARD SYMBOLS**CLASS AND DIVISION**

Class B, Division 3

PRODUCT IDENTIFICATION NO.**DOMESTIC SUBSTANCE LIST**

Listed

CEPA PRIORITY LIST

Not listed

SECTION 16 REGULATORY INFORMATION (CONTINUED)			
CARCINOGENICITY ACGIH APPENDIX A A1 - CONFIRMED HUMAN A1 - SUSPECTED HUMAN	Not listed in either OSHA, ACGIH, NTP, or IARC Not listed Not listed Not listed		
IARC GROUP 1 OR 2	No		
LABEL LANGUAGE (US/CANADA) HEALTH	Not applicable		
PHYSICAL HANDLING AND STORAGE	Keep container tightly closed. Minimize exposure to air. Store in a cool, dry, well-ventilated liquid storage area.		
FIRST AID	In case of contact, immediately flush eyes with water for at least 15 minutes. If irritation persists, obtain medical attention. Flush skin with water. Wash affected area with soap and water.		
STATE REGULATIONS			
SECTION 17 ADDITIONAL INFORMATION			
OSHA permissible exposure limit or ACGIH threshold limit value has not been established.			
SECTION 18 HMIS LABEL			
HEALTH 1	FLAMMABILITY 2	REACTIVITY 0	PERSONAL PROTECTION B

DEPARTMENT OF TRANSPORTATION

Hazardous Materials Regulations, 49 CFR

Non-hazardous in the ground transportaion system

Proper Shipping Name: VertecBio Citrus #1 (under 119 gallons)
Hazard Class: Combustible liquid
Packaging Group: III
Reportable Quantity: None
Label Required (Drums): None
Placard Required (Bulk): Combustible liquid, 1993
Max. Quantity Pass. Aircraft: 60L/container
Max. Quantity Cargo Aircraft: 220L/container
Stowage on Vessels: Above or Below Deck

The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.