



Vertellus™

MATERIAL SAFETY DATA SHEET Citroflex® A-4

VERTELLUS PERFORMANCE MATERIALS INC.

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME	Citroflex® A-4	CAS #	77-90-7
CHEMICAL NAME	Acetyltri-n-butyl Citrate	CHEMICAL FAMILY	Ester
MOLECULAR WEIGHT	402.5	MOLECULAR FORMULA	C ₂₀ H ₃₄ O ₈
EFFECTIVE DATE	October 2002	SUPERSEDES	December 1999

EMERGENCY NUMBER: CHEMTREC 1-800-424-9300

2. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS	CAS #	% by wt	EXPOSURE LIMITS
Acetyltri-n-butyl Citrate	77-90-7	100	Not established

3. HAZARDOUS IDENTIFICATION

***** EMERGENCY OVERVIEW *****

A clear, oily liquid with essentially no odor. This product does not present an immediate concern for emergency personnel.

POTENTIAL HEALTH EFFECTS

EYES	May cause slight irritation.	SKIN	May cause slight irritation.
INGESTION	May be harmful if ingested in sufficient quantities.		
INHALATION	High gas, vapor, or mist concentrations may be harmful if inhaled.		
CHRONIC (CARCINOGEN)	This material is not listed by IARC, NTP or OSHA as a carcinogen.		
TERATOGENICITY	No data available.		
MUTAGENICITY	Negative for mutagenic activity in Ames testing and mouse lymphoma assay, both with and without metabolic activation.		

4. FIRST AID MEASURES

EYES	Immediately flush the eyes with plenty of water for at least 15 minutes. Call a physician.
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SKIN	Wash thoroughly after skin contact.
INGESTION	If swallowed, do not induce vomiting. Get prompt medical attention.
INHALATION	Remove from exposure. If not breathing, give artificial respiration and call a physician.

5. FIREFIGHTING MEASURES

FLAMMABLE PROPERTIES	FLASHPOINT	400°F (204°C)	METHOD: COC	
FLAMMABLE LIMITS	LEL	Not available	UEL	Not available
AUTOIGNITION	Not available			
COMBUSTION PRODUCTS	As with other organic materials, combustion will produce carbon monoxide and carbon dioxide.			
EXTINGUISHING MEDIA	Foam, dry chemical, carbon dioxide (CO ₂), water spray.			
FIREFIGHTING INSTRUCTIONS	Wear self-contained breathing apparatus and protective clothing. Normal firefighting procedures may be used.			

6. ACCIDENTAL RELEASE MEASURES

Contain spilled liquid with sand or vermiculite and place in chemical waste container. Prevent runoff from entering drains, sewers, and streams.

7. HANDLING AND STORAGE

HANDLING	Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Wash thoroughly after handling.
STORAGE	This product should be stored at ambient temperature in a dry, well-ventilated location. Keep container tightly closed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS	Use with adequate ventilation. The use of local mechanical ventilation is recommended whenever this product is used in a confined space or heated above ambient temperature.
PERSONAL PROTECTIVE EQUIPMENT (PPE)	
EYES / FACE	Goggles or glasses with side shields.
SKIN	Clothing should be sufficient to minimize physical contact. Impermeable gloves recommended (i.e., neoprene).
RESPIRATORY	The use of a NIOSH-approved organic vapor respirator is recommended whenever this product is used in a confined space or heated above ambient temperature. Air-purifying respirators must not be used in oxygen-deficient atmospheres.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Clear, oily liquid	ODOR	Essentially odorless
pH	Not available	PHYSICAL STATE	Liquid
VAPOR PRESSURE	0.8 mm Hg @ 170°C	VAPOR DENSITY	14.1
BOILING POINT	327°C (621°F)	FREEZING/MELTING POINT	-59°C (-75°F) (Pour point)
SOLUBILITY (WATER)	< 0.1%	SPECIFIC GRAVITY	1.048 @ 25/25°C
EVAPORATION RATE	< 1 (Butyl Acetate = 1)	OTHER	

10. STABILITY AND REACTIVITY

STABILITY	Stable
INCOMPATIBILITY	Incompatible with oxidizing materials.
HAZARDOUS DECOMPOSITION PRODUCTS	As with other organic materials, combustion will produce carbon dioxide and carbon monoxide.
POLYMERIZATION	Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxic effects	
oral – rat	LD ₅₀ : 31,400 mg/kg
oral – cat	LD ₅₀ : > 50 mL/kg
intraperitoneal – mouse	LD ₅₀ : > 4000 mg/kg
Other multiple dose toxicity	
intraperitoneal – mouse	TDL ₀ : 12,600 mg/kg/14D-I

12. ECOLOGICAL INFORMATION

No data available.

13. DISPOSAL CONSIDERATIONS

Disposal must be in accordance with Federal, State, and Local regulations.

14. TRANSPORT INFORMATION

DOT SHIPPING CLASSIFICATION	Synthetic Plastic Plasticizer
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DOT HAZARD CLASS	Non-Hazardous
UN NUMBER	Not applicable
DOT HAZARD LABEL	Not applicable
IMO	Not listed

15. REGULATORY INFORMATION

OSHA STATUS	Non-Hazardous	SARA TITLE III	Not applicable	CERCLA	Not applicable
INVENTORIES					
TSCA	Yes	CANADA	Yes (DSL)	EINECS	201-067-0
JAPAN	2-1327X	AUSTRALIA	Yes	KOREA	KE-00158
CHINA	Yes (Part III)	PHILIPPINES	Yes	SWITZERLAND	G-3300

16. OTHER INFORMATION

	HEALTH	FLAMMABILITY	REACTIVITY	PERSONAL PROTECTION
HMIS RATING	0	1	0	B
NFPA RATING	0	1	0	

DATE GENERATED: October 30, 2002

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