CET, LLC.

MATERIAL SAFETY DATA SHEET
TrainSaf®-H-s (H-Agent Simulant)

MSDS Ref. # 000105 Version: US/Canada

Date Approved: Revision No.: 00001

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: TrainSaf®-H-s Simulant (H series Chemical Agent Simulant),
SYNONYM(s): Triacetin (TA) for first component
Ethyl Lactate (EL) for second component
TA:EL 95:5

MANUFACTURER: **CET, LLC.**
13695 Rider Trail North
Earth City, Missouri 63045

Emergency Phone: 314-222-4640 (7:00am-4:30pm, CST)

2. COMPOSITION AND HAZARDOUS INGREDIENTS:

Chemical Name	CAS #	Range; Wt %	Exposure Limits
Triacetin	102-76-1	94-96%	NA
Ethyl Lactate	687-47-8	4-6%	
Curcumin	458-37-7	0.005 - 0.010%	

3. PHYSICAL DATA:

PHYSICAL FORM:	Liquid
ODOR:	Pleasant, mild balmy
APPEARANCE:	Yellow with yellow-green tinge
pH @ 20°C:	7.0
SOLUBILITY:	6.7% in water
SPECIFIC GRAVITY:	1.159 g/ml, 9.66 lb/gal
PERCENT VOLATILES:	>99%
VISCOSITY	16.75 cps
VAPOR PRESSURE	0.12 mm Hg @ 24 ˚C

4. HANDLING AND STORAGE

HANDLING: Store drums in upright position only. Empty drums as thoroughly as possible. Triple rinse before disposal. Avoid contamination; impurities accelerate decomposition. Never return product to original container.

STORAGE: Do not store near oxidizing agents, fuels, or other non-compatible materials. Store in a cool, dry, well-ventilated area. For quality purposes, avoid temperatures above 86 °F. Higher temperatures will accelerate decomposition resulting in loss of assay. Do not store in direct sunlight, or near sources of ignition or heat. Use first in, first out storage management.

VENTILATION: Provide mechanical local exhaust ventilation to prevent release of mist into the work area. If ventilation is inadequate or not available, use acid/gas cartridge or canister with full face protection.

5. SPILL AND LEAK PROCEDURES

Always approach spills from upwind. Ventilate the space involved. Small spills maybe flushed to an approved sewer line with generous amounts of water. Consult a regulatory specialist to determine appropriate state and local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

6. HAZARDS IDENTIFICATION

a) FIRST AID:

Yellow liquid with pleasant bland odor

EYES: Immediately flush with water for at least 15 minutes, lifting upper and lower eyelids intermittently. Seek medical attention if sensitivity occurs.

SKIN: Remove contaminated clothing and thoroughly wash with soap and water. If irritation occurs and persists, contact a physician.

INHALATION: Remove to fresh air. If breathing discomfort occurs and persists, see a medical doctor. If breathing has stopped, give artificial respiration. See medical doctor immediately.

INGESTION: Rinse mouth with water. Dilute by giving 1 or 2 glasses of water. DO NOT induce vomiting. See medical doctor if further assistance is required.

FIRST AID NOTES: This product can be mildly irritating to skin, eyes, and mucous membranes with extended contact. Remove materials from eyes using standard eye wash procedures.

b) PERSONAL PROTECTIVE EQUIPMENT:

EYES AND FACE: It is always good industrial hygiene practice to minimize unnecessary eye contact by wearing chemical safety glasses.

RESPIRATORY None should be needed.

PROTECTIVE CLOTHING: It is good industrial hygiene practice to minimize skin contact by wearing appropriate chemical resistant gloves and aprons.

7. FIRE FIGHTING MEASURES

FLAMMABLE LIMITS: Not available Material is a combustible liquid.

EXTINGUISHING MEDIA: Use water to keep fire exposed containers cool.

FIRE FIGHTING PROCEDURES: Use flooding quantities of water only. Use water spray to keep fire exposed containers cool. Fight fire from protected location or maximum distance. Use personal protective equipment and positive pressure self-contained breathing apparatus.

FIRE POINT: Not available. This material is a combustible liquid.

SENSITIVITY TO STATIC DISCHARGE: Not available.

SENSITIVITY TO IMPACT: Not available.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide and carbon dioxide.

8. TOXICOLOGICAL INFORMATION

EYE EFFECTS: Mild irritant

SKIN EFFECTS: Non Irritant

ORAL LD_{50}: 3200-6400 mg/kg (rats) for Triacetin

INHALATION LC_{50}: .5400 mg / cubic meter for EL component

TARGET ORGANS: Eyes, skin, nose, throat, lungs.

CARCINOGENICITY:

Chemical Name	NTP Status	IARC Status	OSHA Status	Other
Triacetin	Not listed	Not Listed		
Ethyl Lactate			ACGIH	

9. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: No data available for this product.

CHEMICAL FATE INFORMATION: Components of the above mixture, triacetin and ethyl lactate are esters that are generally recognized as safe (GRAS). These compounds are readily hydrolyzed in presence of acidic or basic solutions into biodegradable compounds of acetic acid, lactic acid and glycerol.

10. TRANSPORT INFORMATION

DOT Name	Triacetin/Ethyl Lactate mixture
UN Number	UN 1192
Dangerous Goods Class	3
Sub Risk Class	Flammable liquid
Packing Group	3
Transport Label(s) Required	Flammable liquid

11. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

SARA TITLE III SECTION 302: Not listed

SECTION 313 REPORTABLE INGREDIENTS (40 CFR 372):

CERCLA (COMPHREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT)

CERCLA REGULATORY (40 CFR 302.4):

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA STATUS (40 CFR 710): Listed

RCRA STATUS: Waste No.: NA

CANADA

WHMIS (WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM):

Hazard Classification: NA.
Ingredient Disclosure List: Listed

12. RATINGS:

HMIS® (Hazardous Materials Identification System)		**NFPA® RATING**	
HEALTH:	1	HEALTH	1
FLAMMABILITY	1	FLAMMABILITY	1
PHYSICAL HAZARD	0	REACTIVITY	0
PERSONAL PROTECTION	H		

Key
4= Severe
3= Serious
2= Moderate
1= Slight
0= Minimal

HMIS® RATINGS NOTES: Protection = H (Safety goggles, gloves, apron and a vapor respirator).

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The contents and format of this MSDS are in accordance with OSHA Hazard Communication Standard and Canada's Workplace Hazardous Materials Information System (WHMIS).

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