SAFETY DATA SHEET

Classified in accordance with 29 CFR 1910.1200

1. Identification

Product identifier: **ACRIFIX® 1S 0117**

Other means of identification None.

Recommended use: Adhesive

Recommended restrictions: Not known.

Manufacturer/Importer/Distributor Information

Company Name	:	POLYVANTIS Sanford LLC 1796 Main St Sanford, ME 04073 USA
Telephone	:	+1-207-490-4230
E-mail	:	AP-sds-info@polyvantis.com

Emergency telephone number:

24-Hour Health Emergency	:	+1-800-255-3924 (24 h)

2. Hazard(s) identification

Hazard Classification

Physical Hazards

Flammable liquids	Category 2

Health Hazards

Acute toxicity (Oral)	Category 4
Acute toxicity (Inhalation - vapor)	Category 4
Serious Eye Damage/Eye Irritation	Category 1
Specific Target Organ Toxicity - Single Exposure	Category 3 (Respiratory tract irritation.)

Environmental Hazards

Acute hazards to the aquatic environment	Category 3

Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement:

Highly flammable liquid and vapor.
Harmful if swallowed or if inhaled.
Causes serious eye damage.
May cause respiratory irritation.
Harmful to aquatic life.

Precautionary Statements

Prevention: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion proof electric equipment. Use non-sparking tools. Take action to prevent static discharges. Wear protective gloves/ protective clothing/ eye protection/ face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment.

Response: IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage: Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.

Disposal: Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.

Hazard(s) not otherwise classified (HNOC): None.

3. Composition/information on ingredients

Mixtures

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
ethyl formate	Formic acid, ethyl ester	109-94-4	30 - 60%
nitroethane	No data available.	79-24-3	30 - 60%

2-phenoxyethanol	Ethanol, 2-phenoxy-	122-99-6	3 - 7%
Ethyl acetate	ethyl ethanoate	141-78-6	3 - 7%
butan-1-ol	n-butanol	71-36-3	1 - <3%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

The exact concentration has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

General information: First aider needs to protect himself. Medical treatment is necessary if symptoms occur which are obviously caused by skin or eye contact with the product or by inhalation of its vapours. Take off all contaminated clothing immediately.

Inhalation: If inhaled, remove to fresh air. Give artificial respiration if breathing has stopped. If breathing is difficult, give oxygen. Get immediate medical advice/attention.

Skin Contact: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Obtain medical attention if irritation develops or persists. Wash clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical advice/attention.

Ingestion: If swallowed, DO NOT induce vomiting unless directed to do so by medical personnel. Get immediate medical advice/attention. Never give anything by mouth to an unconscious person.

Personal Protection for First-aid Responders: No data available.

Most important symptoms and effects, both acute and delayed

Symptoms: Skin irritation. cough, sneezing. confusion Acute eye irritation/corrosion

Hazards: Harmful by inhalation. Harmful if swallowed. May be harmful if absorbed through skin. Risk of serious damage to eyes. Vapours in higher concentrations may cause narcotic effects. May cause central nervous system effects. Liver and kidney injuries may occur.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards:	Flammable liquid. Vapors can travel to a source of ignition and flash back. Explosive mixtures may occur at temperatures at or above the flashpoint.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	Extinguish with alcohol-resistant foam, carbon dioxide or dry powder.
Unsuitable extinguishing media:	Water. dry chemicals on a bicarbonate basis
Special hazards arising from the substance or mixture:	May be released in case of fire: carbon monoxide, carbon dioxide, organic products of decomposition and nitric oxides. Closed container may rupture if strongly heated.

Special protective equipment and precautions for fire-fighters

Special fire-fighting procedures:	Keep away from sources of ignition - No smoking. Take action to prevent static discharges. In the event of fire, cool the endangered containers with water. Vapours can form an explosive mixture with air. Use only explosion-proof equipment.
Special protective equipment for fire-fighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Containers can build up pressure if exposed to heat (fire). Cool with water spray.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Wear personal protective equipment; see section 8. Handle in accordance with good industrial hygiene and safety practice. Assure sufficient ventilation. Avoid contact with eyes, skin, and clothing. Keep away from sources of ignition - No smoking. Avoid breathing dust/mist/vapors. Use breathing appatus if exposed to vapors/dust/mist/aerosol.
Accidental release measures:	Evacuate area and do not approach spilled product. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). For personal protection see section 8.
Methods and material for containment and cleaning up:	Larger quantities: Remove mechanically (by pumping). Use explosion-proof equipment! Smaller quantities and/or residues: Contain with absorbent material (e.g. sand, diatomaceous earth, acid absorbent, universal absorbent or sawdust). Dispose of in accordance with regulations.
Environmental Precautions:	Prevent product from getting into drains/surface water/groundwater. Contain spilled product and prevent any contamination of soil, the sewer system or water bodies. If the product contaminates rivers and lakes or drains inform respective authorities.

7. Handling and storage

Handling

Technical measures:

Install appropriate equipment and wear appropriate personal protective equipment (see "8. Exposure control/personal protection").

Local/Total ventilation:

Use explosion-proof electrical, ventilating and lighting equipment.

Safe handling advice:

Keep away from heat. Keep away from sparks, flames and other sources of ignition. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Wash thoroughly after handling. Do not inhale exhaust fumes, vapors, sprays or aerosols. Use only with adequate ventilation. The need for grounding and bonding of containers in accordance with OSHA 29 CFR 1910.106 and NFPA 77 should be assessed for all product transfers. Container hazardous when empty. Follow all SDS/label precautions even after the container is emptied because it may retain product residues. DO NOT CUT OR WELD ON OR NEAR THIS CONTAINER. Residual vapors might explode on ignition; do not apply heat, cut, drill, grind or weld on or near this container.To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before using this product. A safety shower and eye wash fountain should be readily available.

Contact avoidance measures:

see section 8. see section 10.

Storage

Safe storage conditions:

Improper disposal or re-use of this container may be dangerous and illegal.Keep in the original container at a temperature not exceeding 30 °C (86 °F). Keep container tightly closed and in a well-ventilated place.Avoid impurities. see also section 10. Observe prohibition against storing together!

Safe packaging materials:

No data available.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Components	Type	Exposure Limit Values		Source
ethyl formate	REL	100 ppm	300 mg/m3	NIOSH
	STEL	100 ppm		ACGIH
	PEL	100 ppm	300 mg/m3	OSHA Z1
	IDLH	1,500 ppm		NIOSH IDLH
	TWA	100 ppm	300 mg/m3	OSHA Z1A
	TWA	100 ppm	300 mg/m3	TN OEL
	AN ESL		300 µg/m3	TX ESL

	ST ESL		3,000 µg/m3	TX ESL
	ST ESL		1,000 ppb	TX ESL
	AN ESL		100 ppb	TX ESL
	TWA PEL	100 ppm	300 mg/m3	US CA OEL
nitroethane	TWA	100 ppm		ACGIH
	PEL	100 ppm	310 mg/m3	OSHA Z1
	IDLH	1,000 ppm		NIOSH IDLH
	TWA	100 ppm	310 mg/m3	OSHA Z1A
	TWA	100 ppm	310 mg/m3	TN OEL
	ST ESL		3,100 µg/m3	TX ESL
	AN ESL		310 µg/m3	TX ESL
	ST ESL		1,000 ppb	TX ESL
	AN ESL		100 ppb	TX ESL
	TWA PEL	100 ppm	310 mg/m3	US CA OEL
Ethyl acetate	REL	400 ppm	1,400 mg/m3	NIOSH
	TWA	400 ppm		ACGIH
	PEL	400 ppm	1,400 mg/m3	OSHA Z1
	LEL		2.0 %	NIOSH IDLH
	IDLH	2,000 ppm		NIOSH IDLH
	TWA	400 ppm	1,400 mg/m3	OSHA Z1A
	TWA	400 ppm	1,400 mg/m3	TN OEL
	ST ESL		3,100 µg/m3	TX ESL
	ST ESL		870 ppb	TX ESL
	AN ESL		400 ppb	TX ESL
	AN ESL		1,440 µg/m3	TX ESL
	TWA PEL	400 ppm	1,400 mg/m3	US CA OEL
butan-1-ol	Ceil_Time	50 ppm	150 mg/m3	NIOSH
	TWA	20 ppm		ACGIH
	PEL	100 ppm	300 mg/m3	OSHA Z1
	IDLH	1,400 ppm		NIOSH IDLH
	LEL		1.4 %	NIOSH IDLH
	Ceiling	50 ppm	150 mg/m3	OSHA Z1A
	Ceiling	50 ppm	150 mg/m3	TN OEL
	AN ESL		20 ppb	TX ESL
	ST ESL		200 ppb	TX ESL
	AN ESL		61 µg/m3	TX ESL
	ST ESL		610 µg/m3	TX ESL
	Ceiling	50 ppm	150 mg/m3	US CA OEL

Please refer to the latest edition of the appropriate source text and consult an industrial hygienist or similar professional, or local agencies, for further information.

Biological Limit Values

No biological exposure limits noted for the ingredient(s).

Appropriate Engineering Controls

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection: Use safety glasses (ANSI Z87.1 or approved equivalent).

Skin Protection

Hand Protection: Material: butyl rubber gloves (minimal thickness 0.3 mm)
Break-through time: 60 min
Guideline: EN 374
Additional Information: Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time., As the product is a mixture of several substances, the durability of the glove materials cannot be calculated in advance and has to be tested before use., Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin and Body Protection: Use chemically resistant apron or other impervious clothing to avoid prolonged or repeated skin contact.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.

Hygiene measures: Follow the usual good standards of occupational hygiene. Store work clothing separately. Take off all contaminated clothing immediately. Clean skin thoroughly after work; apply skin cream. Wash hands before breaks and at the end of workday. Take off clothing and shoes contaminated with product. Clean before reuse. Contaminated work clothing should not be allowed out of the workplace. Smoking, eating and drinking should be prohibited in the application area.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	Violet
Odor:	like fruit
Odor Threshold:	No data available.

Freezing point:	approx. -112.00 °F/ -80.00 °C Method: estimated
Boiling Point:	129 °F/ 54 °C (1,013 hPa)
Flammability:	Highly flammable liquid and vapor.
Upper/lower limit on flammability or explosive limits	
Explosive limit - upper:	13.5 %(V) (ethyl formate)
Explosive limit - lower:	2.7 %(V) (ethyl formate) 3.4 %(V) (nitroethane)
Flash Point:	< 27 °F/< -3 °C
Auto-ignition temperature:	No data available.
Decomposition Temperature:	The following applies to the component nitroethane: May explode if heated. Shock and heat sensitive.
pH:	3.5 - 4 Concentration: 100 %
Viscosity	
Dynamic viscosity:	approx. 0.8 mPa.s (68 °F/20 °C)
Kinematic viscosity:	0.816 mm2/s (68 °F/20 °C), Method: calculated
Flow Time:	No data available.
Solubility(ies)	
Solubility in Water:	partly soluble 118 g/l (68 °F/20 °C) (ethyl formate)
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	Not applicable Mixture
Vapor pressure:	approx. 260 hPa (ethyl formate)
Relative density:	No data available.
Density:	0.98 g/cm3 (68 °F/20 °C)
Bulk density:	Not applicable
Relative vapor density:	> 1 (68 °F/20 °C)
Other information	
Explosive properties:	Not explosive see item 10 Vapours may form explosive mixtures with air
Impact sensitivity:	No data available.
Evaporation Rate:	No data available.

10. Stability and reactivity

Reactivity:	see section "Possibility of hazardous reactions"
Chemical Stability:	The following applies to the component nitroethane: May explode if heated. Shock and heat sensitive.
Possibility of hazardous reactions:	Reactions with strong oxidizing agents. Reactions with lead, copper and their alloys. Forms shock sensitive compounds with strond alcalis, acids or mixtures of amines and heavy metal oxides.
Conditions to avoid:	Avoid high temperatures and sources of ignition.
Incompatible Materials:	Reactions with strong oxidizing agents. Reactions with lead, copper and their alloys. Forms shock sensitive compounds with strond alcalis, acids or mixtures of amines and heavy metal oxides.
Hazardous Decomposition Products:	None when used as directed.

11. Toxicological information

Information on likely routes of exposure

Inhalation:	Harmful if inhaled.
Skin Contact:	May be harmful in contact with skin. Causes mild skin irritation.
Eye contact:	Causes serious eye damage.
Ingestion:	Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation:	Drowsiness, dizziness, disorientation, vertigo.
Skin Contact:	Skin irritation. Repeated exposure may cause skin dryness or cracking.
Eye contact:	Eye may become red, tear, and become painful.
Ingestion:	If handled correctly, not a relevant route of exposure. Information on effects are given below.

Acute toxicity (list all possible routes of exposure)

Oral

Product:	ATEmix, > 1,000 mg/kg, Calculation method
Components:	
ethyl formate	LD 50, Rat, 1,850 mg/kg, literature
nitroethane	LD 50, Rat, female, 1,083 mg/kg
2-phenoxyethanol	LD 50, Rat, 1,850 mg/kg
Ethyl acetate	LD 50, Rabbit, 4,934 mg/kg, OECD 401
butan-1-ol	LD 50, Rat, female, 2,292 mg/kg, OECD Test Guideline 401

Dermal

Product:	ATEmix, > 3,000 mg/kg, Calculation method
Components:	
ethyl formate	LD 50, Rabbit, 20,000 mg/kg, literature
nitroethane	LD 50, Rabbit, male and female, > 2,000 mg/kg, OECD Guide-line 402, No deaths observed., (limit test), Acute dermal toxicity category 5 (UN-GHS)
2-phenoxyethanol	LD 50, Rabbit, > 2,214 mg/kg, Not toxic after single exposure
Ethyl acetate	LD 50, Rabbit, male, > 20,000 mg/kg, Draize-test
butan-1-ol	LD 50, Rabbit, 3,430 mg/kg, OECD Test Guideline 402

Inhalation

Product:	ATEmix, > 10 mg/l, Vapour, Calculation method, Acute inhalation toxicity category 4 (UN-GHS)
Components:	
ethyl formate	ATE, 11 mg/l, moderately toxic after single exposure, Vapour, Harmful by inhalation., Derived from labelling in accordance with Annex VI of EC Directive 1272/2009 (CLP) and its amendments. Not toxic after single exposure, Dust and mist
nitroethane	LC 50, Rat, 4 h, >= 19.8 mg/l, Vapour Harmful if inhaled., Acute inhalation toxicity category 4 (UN-GHS) Not toxic after single exposure, Dust and mist
2-phenoxyethanol	Not toxic after single exposure, Vapour Not toxic after single exposure, Dust and mist
Ethyl acetate	LCLo, Rat, male and female, 6 h, 22.5 mg/l, Not toxic after single exposure, Vapour Not toxic after single exposure, Dust and mist, Not classified for acute toxicity based on available data.
butan-1-ol	LC 50, Rat, male/female, 4 h, > 17.76 mg/l, Not toxic after single exposure, Vapour Not toxic after single exposure, Dust and mist, Not classified for acute toxicity based on available data.

Repeated dose toxicity

Product:	No data available.
Components:	
ethyl formate	No data available.
nitroethane	LOAEC, Rat, male and female, Inhalation - vapor, 100 ppm NOAEC, Mouse, male and female, Inhalation - vapor, 100 ppm
2-phenoxyethanol	NOAEL Rat, Oral, 1,000 mg/kg
Ethyl acetate	NOAEL Rat, male and female, Oral, 900 mg/kg, LOAEL Rat, male and female, Oral, 3,600 mg/kg
butan-1-ol	No data available.

Skin Corrosion/Irritation

Product:	No data available.
Components:	
ethyl formate	Slightly irritating., no OECD method., Rabbit, Slightly irritating., literature
nitroethane	Non-Irritating, OECD Guide-line 404, Rabbit, 24 h, Not irritating
2-phenoxyethanol	Non-Irritating, OECD 404, Rabbit, Not irritating
Ethyl acetate	Non-Irritating, in vivo, Rabbit, Not irritating
butan-1-ol	Irritating., Draize Test, Rabbit, Irritating.

Serious Eye Damage/Eye Irritation

Product:	No data available.
Components:	
ethyl formate	Irritating., in vivo, Rabbit, literature
nitroethane	Non-Irritating, 16 CFR 1500.42, Rabbit
2-phenoxyethanol	Risk of serious damage to eyes., OECD 405, Rabbit

Ethyl acetate	OECD 405, Rabbit, Slightly irritating.
butan-1-ol	Risk of serious damage to eyes., OECD Test Guideline 405, Rabbit

Respiratory or Skin Sensitization

Product:	No data available.
Components:	
ethyl formate	in vivo, Human, Not a skin sensitizer. Not classified for respiratory sensitization
nitroethane	in vivo, Guinea Pig, Not a skin sensitizer. Not classified for respiratory sensitization
2-phenoxyethanol	in vivo, OECD 406, Guinea Pig, Not a skin sensitizer. Not classified for respiratory sensitization
Ethyl acetate	in vivo, OECD 406, Guinea Pig, Not a skin sensitizer. Not classified for respiratory sensitization
butan-1-ol	Local Lymph Node Assay (LLNA), OECD TG 429, Mouse, Not a skin sensitizer. Not classified for respiratory sensitization

Carcinogenicity

Product:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.
Components:	
ethyl formate	Not classified
nitroethane	Not classified
2-phenoxyethanol	Not classified
Ethyl acetate	Not classified
butan-1-ol	Not classified

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogens present or none present in regulated quantities

ACGIH: US.ACGIH Threshold Limit Values:
No carcinogens present or none present in regulated quantities

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogens present or none present in regulated quantities

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053), as amended:
No carcinogens present or none present in regulated quantities

Germ Cell Mutagenicity
In vitro

Product:	No data available.
Components:	
ethyl formate	Microbial mutagenesis assay (Ames test): , negative Chromosome aberration test in vitro: , negative
nitroethane	Ames test, OECD 471: , negative gene mutation (HGPRT-Test), OECD 476: , negative, , CHO-cells
2-phenoxyethanol	OECD 473, negative, Not classified OECD 471, negative, Not classified
Ethyl acetate	Ames test, OECD 471: , negative

butan-1-ol	OECD Test Guideline 476, negative Chromosome aberration test in vitro: , negative Ames test: , negative

In vivo

Product:	No data available.
Components:	
ethyl formate	No data available.
nitroethane	Micronucleus test, Oral, Mouse, male and female, negative
2-phenoxyethanol	OECD 474, Mouse, negative, Not classified
Ethyl acetate	Micronucleus test, OECD 474, Chinese hamster, negative
butan-1-ol	OECD TG 474, Mouse, negative

Reproductive toxicity

Product:	No data available.
Components:	
ethyl formate	Not classified
nitroethane	Not classified
2-phenoxyethanol	Not classifiedRACB-Protocol
Ethyl acetate	Not classifiedOECD 416 Two-generation study
butan-1-ol	Not classified

Specific Target Organ Toxicity - Single Exposure

Product:	No data available.
Components:	
ethyl formate	Category 3 with respiratory tract irritation.
nitroethane	Not classified
2-phenoxyethanol	Respiratory organs, Category 3 with respiratory tract irritation., May cause respiratory irritation.
Ethyl acetate	Category 3 with narcotic effects.
butan-1-ol	Category 3 with narcotic effects. Category 3 with respiratory tract irritation.

Specific Target Organ Toxicity - Repeated Exposure

Product:	No data available.
Components:	
ethyl formate	Not classified
nitroethane	Not classified
2-phenoxyethanol	Not classified
Ethyl acetate	Not classified
butan-1-ol	Not classified

Aspiration Hazard

Product:	No data available.

Components:

ethyl formate	Not classified
nitroethane	Not classified
2-phenoxyethanol	Not classified
Ethyl acetate	Not classified
butan-1-ol	Not classified

Information on health hazards

Other hazards

Product: High solvent concentrations will cause irritations of the eyes and respiratory system and may cause headache, dizziness and disorder of the central nervous system.
Inhalation of high concentrations of solvent vapors may have narcotic effects.
On chronic overexposition damages to the liver and kidneys cannot be excluded.
Methämoglobin formation cannot be ruled out.
Carefully avoid contact with skin and eyes as well as inhalation of product vapours.
Frequent and prolonged contact can lead to skin irritationNo tests were performed with this mixture.
The properties of this product which are hazardous to health have been calculated as per regulation (EC) No. 1272/2008. See section 2 "Hazards Identification".

12. Ecological information

General information: Harmful to aquatic life.

Ecotoxicity:

Toxicity to Aquatic Plants

Product: No data available.

Components:

ethyl formate	EC 50, Green Algae, 96 h, 131.702 mg/l, QSAR EC 50, Green algae (Scenedesmus quadricauda), 72 h, 219.547 mg/l, literature
nitroethane	EC 50, Pseudokirchneriella subcapitata (green algae), 96 h, 12.3 mg/l EC 50, Pseudokirchneriella subcapitata (green algae), 72 h, 17.4 mg/l, OECD 201, literature NOEC, Pseudokirchneriella subcapitata (green algae), 72 h, 7.11 mg/l
2-phenoxyethanol	EC 50, Desmodesmus subspicatus (green algae), 72 h, > 500 mg/l
Ethyl acetate	NOEC, Desmodesmus subspicatus (green algae), 72 h, > 100 mg/l, OECD 201
butan-1-ol	EC 50, Pseudokirchneriella subcapitata (green algae), 96 h, 225 mg/l, OECD Test Guideline 201, growth rate

Toxicity to microorganisms

Product: No data available.

Components:

ethyl formate	No data available.
nitroethane	EC 50, Bacteria, 0.5 h, 310 mg/l NOEC, Bacteria, 0.5 h, 61 mg/l
2-phenoxyethanol	No data available.
Ethyl acetate	No data available.
butan-1-ol	EC10, Pseudomonas putida, 17 h, 2,476 mg/l, DIN 38412 part 8 EC 50, Pseudomonas putida, 17 h, 4,390 mg/l, DIN 38412 part 8 EC10, Pseudomonas putida, 17 h, 2,500 mg/l

	EC 50, Pseudomonas putida, 17 h, 4,390 mg/l, DIN 38412 part 8

Acute hazards to the aquatic environment:

Fish

Product:	No data available.
Components:	
ethyl formate	LC 50, Danio rerio (zebra fish), 96 h, > 100 mg/lOECD Test Guideline 203, literature
nitroethane	LC 50, Danio rerio, 48 h, 880 mg/l LC 50, Pimephales promelas (fathead minnow), 96 h, 569 mg/l
2-phenoxyethanol	LC 50, Pimephales promelas (fathead minnow), 96 h, 460 mg/l
Ethyl acetate	LC 50, Pimephales promelas (fathead minnow), 96 h, 230 mg/lUS-EPA
butan-1-ol	LC 50, Pimephales promelas (fathead minnow), 96 h, 1,376 mg/lOECD TG 203

Aquatic Invertebrates

Product:	No data available.
Components:	
ethyl formate	EC 50, Daphnia magna (Water flea), 48 h, 212.5 mg/lOECD 202
nitroethane	EC 50, Daphnia magna (Water flea), 48 h, > 21.9 mg/l
2-phenoxyethanol	EC 50, Daphnia magna (Water flea), 48 h, > 500 mg/l
Ethyl acetate	No data available.
butan-1-ol	EC 50, Daphnia magna (Water flea), 48 h, 1,328 mg/lOECD 202 part 1

Chronic hazards to the aquatic environment:

Fish

Product:	No data available.
Components:	
ethyl formate	No data available.
nitroethane	No data available.
2-phenoxyethanol	No data available.
Ethyl acetate	No data available.
butan-1-ol	No data available.

Aquatic Invertebrates

Product:	No data available.
Components:	
ethyl formate	No data available.
nitroethane	NOEC, Daphnia magna (Water flea), 21 d, 2.44 mg/l
2-phenoxyethanol	No data available.
Ethyl acetate	NOEC, Daphnia magna (Water flea), 21 d, 2.4 mg/l, OECD 211
butan-1-ol	NOEC, Daphnia magna (Water flea), 21 d, 4.1 mg/l, OECD 211 EC50, Daphnia magna (Water flea), 21 d, 18 mg/l, OECD 211

Persistence and Degradability

Biodegradation

Product:	No data available.
Components:	
ethyl formate	77.48 %, 28 d, OECD 301 D, Readily biodegradable
nitroethane	< 0.1 %, 28 d, OECD 301 D, Not readily degradable.
2-phenoxyethanol	60 %, 10 d, Readily biodegradable
Ethyl acetate	The 10 day time window criterion is not fulfilled., rapidly biodegradable
butan-1-ol	92 %, 20 d, Readily biodegradable 96 %, 15 d, Readily biodegradable

BOD/COD Ratio

Product:	No data available.
Components:	
ethyl formate	No data available.
nitroethane	No data available.
2-phenoxyethanol	No data available.
Ethyl acetate	No data available.
butan-1-ol	No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product:	No data available.
Components:	
ethyl formate	0.88
nitroethane	Fish, 1, Measured
2-phenoxyethanol	No data available.
Ethyl acetate	No data available.
butan-1-ol	Significant bioaccumulation need not be expected. This substance is not considered to be persistent, bioaccumulating and toxic (PBT). Accumulation in organisms is not expected due to the coefficient of distribution of n-octanol in water (log Pow).

Partition Coefficient n-octanol / water (log Kow)

Product:	, Not applicable Mixture
Components:	
ethyl formate	1.504, 25 °C, OECD Test Guideline 107, literature
nitroethane	0.162, OECD TG 107
2-phenoxyethanol	1.2, 23 °C
Ethyl acetate	0.68, 25 °C, OPPTS 830.7560, No
butan-1-ol	0.88

Mobility in soil:

Product:	No data available.
Components:	
ethyl formate	No data available.
nitroethane	No data available.
2-phenoxyethanol	No data available.
Ethyl acetate	No data available.
butan-1-ol	Not expected to adsorb on soil.

Results of PBT and vPvB assessment:

Product:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Components:	
ethyl formate	Non-classified vPvB substance, Non-classified PBT substance
nitroethane	Non-classified vPvB substance Non-classified PBT substance
2-phenoxyethanol	Non-classified vPvB substance Non-classified PBT substance
Ethyl acetate	Non-classified vPvB substance Non-classified PBT substance

butan-1-ol	Non-classified vPvB substance, Non-classified PBT substance

Other adverse effects:

Other hazards

Product: Prevent substance from entering soil, natural bodies of water and sewer systems. The properties of this product which are characteristics posing a threat to the environment have been calculated as per regulation (EC) No. 1272/2008. See section 2 "Hazards Identification". No ecotoxicological studies with the product available.

13. Disposal considerations

General information: Dispose of waste and residues in accordance with local authority requirements.

Disposal methods: Waste must be disposed of in accordance with federal, state and local regulations. Incineration is the preferred method. Roehm encourages the recycle, recovery and reuse of materials, where permitted, as an alternate to disposal as a waste.

Contaminated Packaging: Contaminated packaging should ideally be emptied; it can then be recycled after having been decontaminated. Packaging that cannot be cleaned should be disposed of professionally. Uncontaminated packaging may be taken for recycling. Empty containers must be handled with care due to product residue. DO NOT HEAT OR CUT THE EMPTY CONTAINER WITH ELECTRIC OR GAS TORCH.

14. Transport information

Domestic regulation

49 CFR

UN/ID/NA number	:	UN 1133
Proper shipping name	:	Adhesives
Class	:	3
Packing group	:	II
Labels	:	3
ERG Code	:	128
Marine pollutant	:	no

International Regulations

IATA-DGR

UN/ID No.	:	UN 1133
Proper shipping name	:	Adhesives
Class	:	3
Packing group	:	II
Labels	:	3
Packing instruction (cargo aircraft)	:	364
Packing instruction (passenger aircraft)	:	353

IMDG-Code

UN number	:	UN 1133
Proper shipping name	:	ADHESIVES
Class	:	3
Packing group	:	II
Labels	:	3
EmS Code	:	F-E, S-D
Marine pollutant	:	no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053), as amended

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Chemical Identity
ACETIC ACID, ETHYL ESTER
GLYCOL ETHERS
1-BUTANOL

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Flammable (gases, aerosols, liquids, or solids), Acute toxicity (any route of exposure), Serious eye damage or eye irritation, Specific target organ toxicity (single or repeated exposure)

US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances

None present or none present in regulated quantities.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

Chemical Identity	% by weight
Ethanol, 2-phenoxy-	1.0%
n-Butyl alcohol (1-Butanol)	1.0%

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65
No ingredient requiring a warning under CA Prop 65.

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity
ethyl formate
nitroethane
Ethyl acetate
butan-1-ol

US. Massachusetts RTK - Substance List
No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity
ethyl formate
nitroethane
Ethyl acetate
butan-1-ol

US. Rhode Island RTK
No ingredient regulated by RI Right-to-Know Law present.

International regulations

Montreal protocol
Not applicable

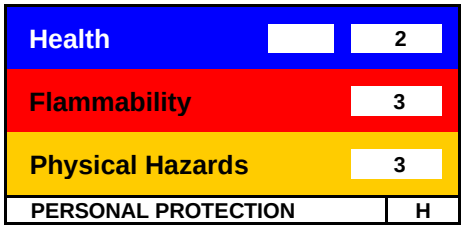
Stockholm convention
Not applicable

Rotterdam convention
Not applicable

Kyoto protocol
Not applicable

16.Other information, including date of preparation or last revision

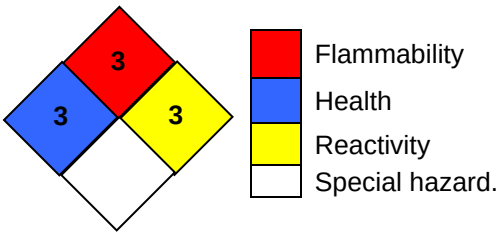
HMIS Hazard ID



H - Goggles, Gloves, Apron & Vapor Respirator

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Version #: 5.0

Generation date: 11/11/2024

Date of first report version: 04/10/2019

Abbreviations and acronyms:

ACGIH:	US. ACGIH Threshold Limit Values, as amended
NIOSH IDLH:	US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended
NIOSH/GUIDE:	US. NIOSH: Pocket Guide to Chemical Hazards, as amended
OSHA_TRANS:	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
TN OEL:	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
TX ESL:	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
US CA OEL:	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
Z1A:	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
ACGIH / STEL:	Short Term Exposure Limit (STEL)
ACGIH / TWA:	Time Weighted Average (TWA)
NIOSH IDLH / LEL:	Lower Explosive Limit (LEL)
NIOSH IDLH / IDLH:	Immediately dangerous to life or health (IDLH) concentration
NIOSH/GUIDE / Ceil_Time:	Ceiling Limit Value and Time Period (if specified)
NIOSH/GUIDE / REL:	Recommended exposure limit (REL)
OSHA_TRANS / PEL:	Permissible exposure limit
TN OEL / Ceiling:	Ceiling Limit Value
TN OEL / TWA:	Time Weighted Average (TWA)
TX ESL / ST ESL:	Short-Term ESL

TX ESL / AN ESL:	Annual ESL
US CA OEL / Ceiling:	Ceiling Limit Value
US CA OEL / TWA PEL:	Time Weighted Average (TWA) Permissible Exposure Limit (PEL)
Z1A / Ceiling:	Ceiling Limit Value
Z1A / TWA:	Time Weighted Average (TWA)

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further Information: none

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