

SECTION 1: Identification

1.1. Identification

Product form : Mixture
 Product name : Landfill/TCL Custom Mix
 Product code : AL0-130976

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Phenova
 6390 Joyce Dr. Suite 100
 Golden, CO 80403 - United States
 T 1-866-942-2978 - F 1-866-283-0269
info@phenova.com - www.phenova.com

1.4. Emergency telephone number

Emergency number : ChemTel Assistance (US/Canada) 1-800-255-3924
 ChemTel Assistance (International) +1 813-248-0585

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Flammable liquids Category 2	H225	Highly flammable liquid and vapour
Acute toxicity (oral) Category 3	H301	Toxic if swallowed
Acute toxicity (dermal) Category 3	H311	Toxic in contact with skin
Skin sensitization, Category 1	H317	May cause an allergic skin reaction
Carcinogenicity Category 1B	H350	May cause cancer
Specific target organ toxicity (single exposure) Category 1	H370	Causes damage to organs
Hazardous to the ozone layer Category 1	H420	Harms public health and the environment by destroying ozone in the upper atmosphere

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Danger

Hazard statements (GHS US) :

H225 - Highly flammable liquid and vapour
 H301+H311 - Toxic if swallowed or in contact with skin
 H317 - May cause an allergic skin reaction
 H350 - May cause cancer
 H370 - Causes damage to organs
 H420 - Harms public health and the environment by destroying ozone in the upper atmosphere

Precautionary statements (GHS US) :

P201 - Obtain special instructions before use.
 P202 - Do not handle until all safety precautions have been read and understood.
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P233 - Keep container tightly closed.
 P260 - Do not breathe dust/fume/gas/mist/vapors/spray.
 P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
 P264 - Wash hands, forearms and face thoroughly after handling.

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P270 - Do not eat, drink or smoke when using this product.
 P272 - Contaminated work clothing must not be allowed out of the workplace
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.
 P301+P310 - If swallowed: Immediately call a poison center or doctor
 P302+P352 - If on skin: Wash with plenty of water
 P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
 P307+P311 - If exposed: Call a poison center/doctor
 P308+P313 - If exposed or concerned: Get medical advice/attention.
 P312 - Call a poison center or doctor if you feel unwell
 P321 - Specific treatment (see supplemental first aid instruction on this label)
 P322 - Specific treatment (see supplemental first aid instruction on this label)
 P330 - Rinse mouth.
 P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
 P361+P364 - Take off immediately all contaminated clothing and wash it before reuse.
 P363 - Wash contaminated clothing before reuse.
 P370+P378 - In case of fire: Use media other than water to extinguish.
 P403+P235 - Store in a well-ventilated place. Keep cool.
 P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation
 P502 - Refer to manufacturer/supplier for information on recovery/recycling.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	Conc.
methanol (Component)	(CAS-No.) 67-56-1	94.8
tert-Butanol (Component)	(CAS-No.) 75-65-0	2
acrylonitrile, inhibited (Component)	(CAS-No.) 107-13-1	0.2
allyl chloride (Component)	(CAS-No.) 107-05-1	0.2
2-chloro-1,3-butadiene, inhibited (Component)	(CAS-No.) 126-99-8	0.2
ethyl methacrylate (Component)	(CAS-No.) 97-63-2	0.2
1,4-dichloro-2-butene, trans- (Component)	(CAS-No.) 110-57-6	0.2
1,4-dioxane (Component)	(CAS-No.) 123-91-1	0.2

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Allow affected person to breathe fresh air. Allow the victim to rest.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/effects : Not expected to present a significant hazard under anticipated conditions of normal use.

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4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

No additional information available

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Landfill/TCL Custom Mix		
ACGIH	Local name	Methanol
ACGIH	ACGIH TWA (ppm)	200 ppm
ACGIH	ACGIH STEL (ppm)	250 ppm
ACGIH	Remark (ACGIH)	Headache; eye dam; dizziness; nausea
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m ³)	260 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	200 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

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acrylonitrile, inhibited (107-13-1)		
ACGIH	Local name	Acrylonitrile
ACGIH	ACGIH TWA (ppm)	2 ppm
ACGIH	Remark (ACGIH)	CNS impair; LRT irr
ACGIH	Regulatory reference	ACGIH 2018
allyl chloride (107-05-1)		
ACGIH	Local name	Allyl chloride
ACGIH	ACGIH TWA (ppm)	1 ppm
ACGIH	ACGIH STEL (ppm)	2 ppm
ACGIH	Remark (ACGIH)	Eye & URT irr; liver & kidney dam
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m ³)	3 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	1 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA
tert-Butanol (75-65-0)		
ACGIH	Local name	tert-Butanol
ACGIH	ACGIH TWA (ppm)	100 ppm
ACGIH	Remark (ACGIH)	CNS impair
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m ³)	300 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	100 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA
2-chloro-1,3-butadiene, inhibited (126-99-8)		
ACGIH	Local name	β-Chloroprene
ACGIH	ACGIH TWA (ppm)	1 ppm
ACGIH	Remark (ACGIH)	Lung cancer; URT & eye irr; Skin; A2 (Suspected Human Carcinogen: Human data are accepted as adequate in quality but are conflicting or insufficient to classify the agent as a confirmed human carcinogen; OR, the agent is carcinogenic in experimental animals at dose(s), by route(s) of exposure, at site(s), of histologic type(s), or by mechanism(s) considered relevant to worker exposure. The A2 is used primarily when there is limited evidence or carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals with relevance to humans)
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m ³)	90 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	25 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA
1,4-dichloro-2-butene, trans- (110-57-6)		
ACGIH	ACGIH TWA (ppm)	0.005 ppm
1,4-dioxane (123-91-1)		
ACGIH	Local name	1,4-Dioxane
ACGIH	ACGIH TWA (ppm)	20 ppm
ACGIH	Remark (ACGIH)	Liver dam
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m ³)	360 mg/m ³

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1,4-dioxane (123-91-1)		
OSHA	OSHA PEL (TWA) (ppm)	100 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA
ethyl methacrylate (97-63-2)		
Not applicable		
methanol (67-56-1)		
ACGIH	Local name	Methanol
ACGIH	ACGIH TWA (ppm)	200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	ACGIH STEL (ppm)	250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)
ACGIH	Remark (ACGIH)	Headache; eye dam; dizziness; nausea
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m ³)	260 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	200 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

8.2. Appropriate engineering controls

No additional information available

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Hand protection:

Wear protective gloves.

Eye protection:

Chemical goggles or safety glasses

Respiratory protection:

Wear appropriate mask

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
	: Colorless
	: characteristic
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available

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Solubility	: No data available
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Landfill/TCL Custom Mix	
ATE US (oral)	105.412 mg/kg body weight
ATE US (dermal)	316.456 mg/kg body weight
acrylonitrile, inhibited (107-13-1)	
LD50 oral rat	95 mg/kg body weight (Rat, Female, Experimental value, Oral)
LD50 dermal rat	> 200 mg/kg body weight (4 h, Rat, Male / female, Experimental value, Dermal)
LC50 inhalation rat (mg/l)	2.05 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s))
ATE US (oral)	95 mg/kg body weight
ATE US (dermal)	300 mg/kg body weight
ATE US (gases)	700 ppmV/4h
ATE US (vapors)	2.05 mg/l/4h
ATE US (dust, mist)	2.05 mg/l/4h
allyl chloride (107-05-1)	
LD50 oral rat	275 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Female, Experimental value, Oral, 14 day(s))
LD50 dermal rabbit	398 mg/kg body weight (24 h, Rabbit, Male / female, Experimental value, Dermal, 14 day(s))
LC50 inhalation rat (mg/l)	5.6 mg/l (4 h, Rat, Experimental value, Inhalation (vapours), 28 day(s))
ATE US (oral)	275 mg/kg body weight
ATE US (dermal)	398 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	5.6 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

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tert-Butanol (75-65-0)	
LD50 oral rat	3046 mg/kg body weight (EPA OPPTS 870.1100: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rabbit	> 2000 mg/kg body weight (EU Method B.3: Acute toxicity (dermal), 24 h, Rabbit, Male / female, Experimental value, Dermal, 14 day(s))
LC50 inhalation rat (mg/l)	> 36 mg/l (EPA OPPTS 870.1300: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s))
ATE US (oral)	3046 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h
2-chloro-1,3-butadiene, inhibited (126-99-8)	
LD50 oral rat	251 mg/kg body weight (Rat, Experimental value, Oral)
LD50 dermal rabbit	> 200 mg/kg body weight (24 h, Rabbit, Male, Experimental value, Dermal, 2 day(s))
LC50 inhalation rat (mg/l)	>= 8.42 mg/l (4 h, Rat, Male, Experimental value, Inhalation (vapours), 14 day(s))
ATE US (oral)	251 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h
1,4-dichloro-2-butene, trans- (110-57-6)	
ATE US (oral)	100 mg/kg body weight
ATE US (dermal)	300 mg/kg body weight
ATE US (gases)	100 ppmV/4h
ATE US (vapors)	0.5 mg/l/4h
ATE US (dust, mist)	0.05 mg/l/4h
1,4-dioxane (123-91-1)	
LD50 oral rat	> 5000 mg/kg (Rat, Oral)
LD50 dermal rabbit	7600 mg/kg (Rabbit, Dermal)
LC50 inhalation rat (mg/l)	51 mg/l (4 h, Rat, Inhalation)
LC50 inhalation rat (ppm)	14250 ppm (4 h, Rat, Inhalation)
ATE US (dermal)	7600 mg/kg body weight
ATE US (vapors)	51 mg/l/4h
ATE US (dust, mist)	51 mg/l/4h
ethyl methacrylate (97-63-2)	
LD50 oral rat	13424 mg/kg body weight (Rat, Experimental value, Oral)
LD50 dermal rabbit	> 9100 mg/kg body weight (Rabbit, Experimental value, Dermal)
LC50 inhalation rat (mg/l)	55 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation, 14 day(s))
ATE US (oral)	13424 mg/kg body weight
ATE US (vapors)	55 mg/l/4h
ATE US (dust, mist)	55 mg/l/4h
methanol (67-56-1)	
LD50 oral rat	> 5000 mg/kg (Rat; BASF test; Literature study; 1187-2769 mg/kg bodyweight; Rat; Weight of evidence)
LD50 dermal rabbit	15800 mg/kg (Rabbit; Literature study)
LC50 inhalation rat (mg/l)	85 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	64000 ppm/4h (Rat; Literature study)
ATE US (oral)	100 mg/kg body weight
ATE US (dermal)	300 mg/kg body weight
ATE US (gases)	700 ppmV/4h
ATE US (vapors)	3 mg/l/4h
ATE US (dust, mist)	0.5 mg/l/4h
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: May cause an allergic skin reaction.

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Germ cell mutagenicity : Not classified
 Carcinogenicity : May cause cancer.

acrylonitrile, inhibited (107-13-1)	
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

2-chloro-1,3-butadiene, inhibited (126-99-8)	
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

1,4-dioxane (123-91-1)	
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

Reproductive toxicity : Not classified
 STOT-single exposure : Causes damage to organs.

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/effects : Not expected to present a significant hazard under anticipated conditions of normal use.

SECTION 12: Ecological information

12.1. Toxicity

acrylonitrile, inhibited (107-13-1)	
LC50 fish 1	8.6 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Cyprinodon variegatus, Semi-static system, Salt water, Experimental value, GLP)
EC50 Daphnia 1	7.6 - 22 mg/l (48 h, Daphnia magna, No reliable data available)
ErC50 (algae)	14.1 ppm (Other, 72 h, Skeletonema costatum, Static system, Salt water, Experimental value, GLP)

allyl chloride (107-05-1)	
LC50 fish 1	0.32 mg/l (96 h, Pimephales promelas, Static system, Literature study, Nominal concentration)

tert-Butanol (75-65-0)	
LC50 fish 1	> 961 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value, GLP)
EC50 Daphnia 1	933 mg/l (EU Method C.2, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)

2-chloro-1,3-butadiene, inhibited (126-99-8)	
LC50 fish 1	> 5.25 mg/l (EU Method C.1, 96 h, Danio rerio, Semi-static system, Fresh water, Experimental value, GLP)
EC50 Daphnia 1	11.31 mg/l (EU Method C.2, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
ErC50 (algae)	19.9 mg/l (EU Method C.3, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, GLP)

1,4-dioxane (123-91-1)	
LC50 fish 1	13000 mg/l (96 h, Pimephales promelas, GLP)
EC50 Daphnia 1	8450 mg/l (24 h, Daphnia magna)

ethyl methacrylate (97-63-2)	
LC50 fish 1	100 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Flow-through system, Experimental value, GLP)
EC50 Daphnia 1	> 66 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Flow-through system, Fresh water, Experimental value, Locomotor effect)
ErC50 (algae)	> 110 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Fresh water, Experimental value)

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methanol (67-56-1)	
LC50 fish 1	15400 mg/l (LC50; EPA 660/3 - 75/009; 96 h; Lepomis macrochirus; Flow-through system; Fresh water; Experimental value)
EC50 Daphnia 1	> 10000 mg/l (EC50; DIN 38412-11; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)
LC50 fish 2	10800 mg/l (LC50; 96 h; Salmo gairdneri)

12.2. Persistence and degradability

Landfill/TCL Custom Mix	
Persistence and degradability	Not established.

acrylonitrile, inhibited (107-13-1)	
Persistence and degradability	Biodegradable in the soil. Inherently biodegradable. Not readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.72 g O ₂ /g substance
Chemical oxygen demand (COD)	1.39 g O ₂ /g substance
ThOD	3.17 g O ₂ /g substance

allyl chloride (107-05-1)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.23 g O ₂ /g substance
Chemical oxygen demand (COD)	0.86 g O ₂ /g substance
ThOD	1.7 g O ₂ /g substance
BOD (% of ThOD)	0.14 (5 day(s), Calculated value)

tert-Butanol (75-65-0)	
Persistence and degradability	Not readily biodegradable in water.
Biochemical oxygen demand (BOD)	0 g O ₂ /g substance
Chemical oxygen demand (COD)	2.18 g O ₂ /g substance
ThOD	2.59 g O ₂ /g substance
BOD (% of ThOD)	0

2-chloro-1,3-butadiene, inhibited (126-99-8)	
Persistence and degradability	Not readily biodegradable in water.

1,4-dioxane (123-91-1)	
Persistence and degradability	Non degradable in the soil. Not readily biodegradable in water.
Biochemical oxygen demand (BOD)	0 g O ₂ /g substance
ThOD	1.8 g O ₂ /g substance
BOD (% of ThOD)	0

ethyl methacrylate (97-63-2)	
Persistence and degradability	Readily biodegradable in water.

methanol (67-56-1)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Highly mobile in soil.
Biochemical oxygen demand (BOD)	0.6 - 1.12 g O ₂ /g substance
Chemical oxygen demand (COD)	1.42 g O ₂ /g substance
ThOD	1.5 g O ₂ /g substance
BOD (% of ThOD)	0.8 (Literature study)

12.3. Bioaccumulative potential

Landfill/TCL Custom Mix	
Bioaccumulative potential	Not established.

acrylonitrile, inhibited (107-13-1)	
BCF fish 1	48 (672 h, Lepomis macrochirus, Fresh water, Literature study)
Log Pow	1.02 - 1.05 (Experimental value, EU Method A.8: Partition Coefficient, 21 °C)

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acrylonitrile, inhibited (107-13-1)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
allyl chloride (107-05-1)	
BCF fish 1	< 5.6 (OECD 305: Bioconcentration: Flow-Through Fish Test, 42 day(s), Cyprinus carpio, Flow-through system, Fresh water, Experimental value, Fresh weight)
Log Pow	2.1 (Experimental value, Equivalent or similar to OECD 117, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
tert-Butanol (75-65-0)	
Log Pow	0.317 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 22.5 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
2-chloro-1,3-butadiene, inhibited (126-99-8)	
BCF fish 1	21.54 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)
Log Pow	2.525 (QSAR, KOWWIN)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
1,4-dichloro-2-butene, trans- (110-57-6)	
Log Pow	2.11 - 2.6 (QSAR)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
1,4-dioxane (123-91-1)	
BCF fish 1	0.2 - 0.7 (Cyprinus carpio, Test duration: 6 weeks)
Log Pow	-0.27 (Experimental value)
Bioaccumulative potential	Not bioaccumulative.
ethyl methacrylate (97-63-2)	
BCF fish 1	8.851 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)
Log Pow	1.87 (Experimental value, Equivalent or similar to OECD 107, 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
methanol (67-56-1)	
BCF fish 1	< 10 (BCF; 72 h; Leuciscus idus)
Log Pow	-0.77 (Experimental value; Other)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

acrylonitrile, inhibited (107-13-1)	
Surface tension	26.6 mN/m (25 °C)
Ecology - soil	No (test)data on mobility of the substance available.
allyl chloride (107-05-1)	
Log Koc	1.67 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Highly mobile in soil.
tert-Butanol (75-65-0)	
Surface tension	69.8 mN/m (21 °C, 1.09 g/l, OECD 115: Surface Tension of Aqueous Solutions)
Log Koc	0.324 - 0.707 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Highly mobile in soil.
2-chloro-1,3-butadiene, inhibited (126-99-8)	
Log Koc	1.83 (log Koc, Calculated value)
Ecology - soil	Highly mobile in soil.
1,4-dichloro-2-butene, trans- (110-57-6)	
Surface tension	0.024 N/m (20 °C)
Log Koc	2.33 (log Koc, Experimental value, Other isomer)
1,4-dioxane (123-91-1)	
Surface tension	0.037 N/m (20 °C)
ethyl methacrylate (97-63-2)	
Log Koc	1.222 - 1.933 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Highly mobile in soil.

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methanol (67-56-1)	
Surface tension	0.023 N/m (20 °C)
Log Koc	Koc,PCKOCWIN v1.66; 1; Calculated value

12.5. Other adverse effects

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acrylonitrile, inhibited (107-13-1)	
allyl chloride (107-05-1)	
tert-Butanol (75-65-0)	
2-chloro-1,3-butadiene, inhibited (126-99-8)	
1,4-dichloro-2-butene, trans- (110-57-6)	
1,4-dioxane (123-91-1)	
ethyl methacrylate (97-63-2)	
methanol (67-56-1)	

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1230 Methanol (methanol ; acrylonitrile, inhibited ; 2-chloro-1,3-butadiene, inhibited ; ; 1,4-dichloro-2-butene, trans- ; 1,4-dioxane), 3 (6.1), II

UN-No.(DOT) : UN1230

Proper Shipping Name (DOT) : Methanol
methanol ; acrylonitrile, inhibited ; 2-chloro-1,3-butadiene, inhibited ; ; 1,4-dichloro-2-butene, trans- ; 1,4-dioxane

Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Packing group (DOT) : II - Medium Danger

Subsidiary risk (DOT) : 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132

Hazard labels (DOT) : 3 - Flammable liquid
6.1 - Poison



DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 242

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DOT Symbols	: + - Fixes (cannot be altered) proper shipping name, hazard class, and packing group, I - Proper shipping name appropriate for international and domestic transportation
DOT Special Provisions (49 CFR 172.102)	: IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3) TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: t_r is the maximum mean bulk temperature during transport, t_f is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (t_f) and the maximum mean bulk temperature during transportation (t_r) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d_{15} and d_{50} are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 150
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 1 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 60 L
DOT Vessel Stowage Location	: B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.
DOT Vessel Stowage Other	: 40 - Stow "clear of living quarters"
Emergency Response Guide (ERG) Number	: 131
Other information	: No supplementary information available.

Transportation of Dangerous Goods

Not applicable

Transport by sea

Transport document description (IMDG)	: UN 1230 METHANOL (methanol ; acrylonitrile, inhibited ; 2-chloro-1,3-butadiene, inhibited ; ethyl methacrylate ; 1,4-dichloro-2-butene, trans- ; 1,4-dioxane), 3 (6.1), II (12°C c.c.)
UN-No. (IMDG)	: 1230
Proper Shipping Name (IMDG)	: METHANOL
Class (IMDG)	: 3 - Flammable liquids
Packing group (IMDG)	: II - substances presenting medium danger
Subsidiary risks (IMDG)	: 6.1 - Toxic substances
Limited quantities (IMDG)	: 1 L

Air transport

Transport document description (IATA)	: UN 1230 Methanol (methanol ; acrylonitrile, inhibited ; 2-chloro-1,3-butadiene, inhibited ; ; 1,4-dichloro-2-butene, trans- ; 1,4-dioxane), 3 (6.1), II
UN-No. (IATA)	: 1230
Proper Shipping Name (IATA)	: Methanol
Class (IATA)	: 3 - Flammable Liquids
Packing group (IATA)	: II - Medium Danger
Subsidiary hazards (IATA)	: 6.1 - Toxic substances

SECTION 15: Regulatory information

15.1. US Federal regulations

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acrylonitrile, inhibited (107-13-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
EPA TSCA Regulatory Flag	TP - TP - indicates a substance that is the subject of a proposed TSCA section 4 test rule.
CERCLA RQ	100 lb
RQ (Reportable quantity, section 304 of EPA's List of Lists)	100 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	10000 lb
allyl chloride (107-05-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	1000 lb
tert-Butanol (75-65-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
2-chloro-1,3-butadiene, inhibited (126-99-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	100 lb
1,4-dichloro-2-butene, trans- (110-57-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	500 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb
1,4-dioxane (123-91-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	100 lb
ethyl methacrylate (97-63-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Not subject to reporting requirements of the United States SARA Section 313	
CERCLA RQ	1000 lb
methanol (67-56-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	5000 lb

15.2. International regulations

CANADA

acrylonitrile, inhibited (107-13-1)	
Listed on the Canadian DSL (Domestic Substances List)	
allyl chloride (107-05-1)	
Listed on the Canadian DSL (Domestic Substances List)	
tert-Butanol (75-65-0)	
Listed on the Canadian DSL (Domestic Substances List)	
2-chloro-1,3-butadiene, inhibited (126-99-8)	
Listed on the Canadian DSL (Domestic Substances List)	

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1,4-dichloro-2-butene, trans- (110-57-6)
Listed on the Canadian NDSL (Non-Domestic Substances List)
1,4-dioxane (123-91-1)
Listed on the Canadian DSL (Domestic Substances List)
ethyl methacrylate (97-63-2)
Listed on the Canadian DSL (Domestic Substances List)
methanol (67-56-1)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

acrylonitrile, inhibited (107-13-1)
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program) Listed on EPA Hazardous Air Pollutant (HAPS)
allyl chloride (107-05-1)
Listed on EPA Hazardous Air Pollutant (HAPS)
2-chloro-1,3-butadiene, inhibited (126-99-8)
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program) Listed on EPA Hazardous Air Pollutant (HAPS)
1,4-dioxane (123-91-1)
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program) Listed on EPA Hazardous Air Pollutant (HAPS)
methanol (67-56-1)
Listed on EPA Hazardous Air Pollutant (HAPS)

15.3. US State regulations

acrylonitrile, inhibited (107-13-1)					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No	0.7 µg/day	
2-chloro-1,3-butadiene, inhibited (126-99-8)					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		
1,4-dioxane (123-91-1)					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No	30 µg/day	

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methanol (67-56-1)					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
No	Yes	No	No		47000 µg/day (inhalation); 23,000 µg/day (oral)

SECTION 16: Other information

Revision date : 12/30/2019

Other information : None.

Full text of H-phrases:

H225	Highly flammable liquid and vapour
H301	Toxic if swallowed
H311	Toxic in contact with skin
H317	May cause an allergic skin reaction
H350	May cause cancer
H370	Causes damage to organs
H420	Harms public health and the environment by destroying ozone in the upper atmosphere

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