

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Date of issue: 12/12/2019 Revision date: 12/12/2019 Version: 1.0

SECTION 1: Identification	
1.1. Identification	
Product form	: Mixture
Product name	: Reactives Mix
Product code	: AL0-180007
1.2. Recommended use and restriction	ns 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) identificatio	n
2.1. Classification of the substance or	mixture
GHS US classification	

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
Serious eye damage/eye irritation Category 2	H319	Causes serious eye irritation
Skin sensitization, Category	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
Full text of H statements : see	e section 16	

GHS Label elements, including precautionary statements 2.2.

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 H319 - Causes serious eye irritation H350 - May cause cancer H370 - Causes damage to organs 	
Precautionary statements (GHS US)	 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. N 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. P270 - Do not eat, drink or smoke when using this product. P272 - Contaminated work clothing must not be allowed out of the workplace 	Ю
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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
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact
lenses, if present and easy to do. Continue rinsing
P308+P313 - If exposed or concerned: Get medical advice/attention.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: 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

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. Substa

Not applicable

3.2. Mixtures

Name	Product identifier	Conc.
methanol (Component)	(CAS-No.) 67-56-1	97
2-chloroethylvinyl ether (Component)	(CAS-No.) 110-75-8	1
methyl acetate (Component)	(CAS-No.) 79-20-9	1
acrylonitrile, inhibited (Component)	(CAS-No.) 107-13-1	1

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 effect	cts (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.

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 odditional information ovailable			

No additional information available

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5.3. Special pro	tective equinment and pr	ecautions for fire-fighters			
Firefighting instruction			cooling exposed containers. Exercise caution when fighting any		
0 0		chemical fire. Prevent fire-fi	ghting water from entering environment.		
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.					
	idental release meas				
6.1. Personal pr	ecautions, protective equ	uipment and emergency proc	edures		
	ergency personnel	– .			
Emergency procedure	S	: Evacuate unnecessary pers	sonnel.		
	ncy responders				
Protective equipment	_	Equip cleanup crew with proper protection.			
Emergency procedure		: Ventilate area.			
	ntal precautions	authorities if liquid enters sewe	ara ar public wetara		
-		•			
5.3. Methods an Methods for cleaning u	id material for containme In		ids, such as clay or diatomaceous earth as soon as possible. Collec		
notious for orearing t	۰ ۲	spillage. Store away from of			
6.4. Reference t	o other sections				
See Heading 8. Expos	sure controls and personal	protection.			
SECTION 7: Han	dling and storage				
	s for safe handling				
Precautions for safe h	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, includin	ng any incompatibilities			
7.2. Conditions Storage conditions	for safe storage, includin	· · ·	ntainer in a cool, well ventilated place away from : Keep container		
		: Keep only in the original co			
Storage conditions		: Keep only in the original con closed when not in use.			
Storage conditions ncompatible products ncompatible materials	5	 Keep only in the original col closed when not in use. Strong bases. Strong acids. Sources of ignition. Direct s 			
Storage conditions ncompatible products ncompatible materials SECTION 8: Expo	osure controls/perso	 Keep only in the original col closed when not in use. Strong bases. Strong acids. Sources of ignition. Direct s 			
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Storage conditions ncompatible products ncompatible materials SECTION 8: Expl 3.1. Control par Reactives Mix ACGIH ACGIH ACGIH	osure controls/perso ameters Local name ACGIH TWA (p ACGIH STEL (p	 Keep only in the original collicities of the original collicities of the original collicities of the original collicities. Strong bases. Strong acids. Sources of ignition. Direct significant protection 	Methanol 200 ppm 250 ppm		
Storage conditions ncompatible products ncompatible materials SECTION 8: Expo 3.1. Control par Reactives Mix ACGIH ACGIH ACGIH	Sosure controls/perso ameters Local name ACGIH TWA (p ACGIH STEL (p Remark (ACGIH	 Keep only in the original conclosed when not in use. Strong bases. Strong acids. Sources of ignition. Direct s 	Methanol 200 ppm 250 ppm Headache; eye dam; dizziness; nausea		
Storage conditions ncompatible products ncompatible materials SECTION 8: Exp 3.1. Control par Reactives Mix ACGIH ACGIH ACGIH ACGIH	Sosure controls/perso ameters Local name ACGIH TWA (p ACGIH STEL (p Remark (ACGII Regulatory refe	 Keep only in the original conclosed when not in use. Strong bases. Strong acids. Sources of ignition. Direct s Donal protection appm) bppm) H)	Methanol 200 ppm 250 ppm Headache; eye dam; dizziness; nausea ACGIH 2018		
Storage conditions ncompatible products ncompatible materials SECTION 8: Expo 3.1. Control par Reactives Mix ACGIH ACGIH ACGIH ACGIH ACGIH ACGIH ACGIH	osure controls/perso ameters Local name ACGIH TWA (p ACGIH STEL (p Remark (ACGII Regulatory refe OSHA PEL (TW	 Keep only in the original conclosed when not in use. Strong bases. Strong acids. Sources of ignition. Direct sonal protection 	Methanol 200 ppm 250 ppm Headache; eye dam; dizziness; nausea ACGIH 2018 260 mg/m³		
Storage conditions ncompatible products ncompatible materials SECTION 8: Expt 3.1. Control par Reactives Mix ACGIH ACGIH ACGIH ACGIH ACGIH OSHA	OSURE CONTROIS/PERSO ameters Local name ACGIH TWA (p ACGIH STEL (p Remark (ACGII Regulatory refe OSHA PEL (TW OSHA PEL (TW	 Keep only in the original conclosed when not in use. Strong bases. Strong acids. Sources of ignition. Direct s pm) ppm) H) rence VA) (mg/m³) VA) (ppm)	Methanol 200 ppm 250 ppm Headache; eye dam; dizziness; nausea ACGIH 2018 260 mg/m³ 200 ppm		
Storage conditions ncompatible products ncompatible materials SECTION 8: Expo 3.1. Control par Reactives Mix ACGIH ACGIH ACGIH ACGIH ACGIH ACGIH	OSURE CONTROIS/PERSO ameters Local name ACGIH TWA (p ACGIH STEL (p Remark (ACGII Regulatory refe OSHA PEL (TW OSHA PEL (TW	 Keep only in the original conclosed when not in use. Strong bases. Strong acids. Sources of ignition. Direct s 	Methanol 200 ppm 250 ppm Headache; eye dam; dizziness; nausea ACGIH 2018 260 mg/m³		
Storage conditions ncompatible products ncompatible materials SECTION 8: Exp 3.1. Control par Reactives Mix ACGIH ACGIH ACGIH ACGIH ACGIH ACGIH OSHA OSHA OSHA OSHA	Social sectors of the sector o	 Keep only in the original conclosed when not in use. Strong bases. Strong acids. Sources of ignition. Direct s pm) ppm) H) rence VA) (mg/m³) VA) (ppm)	Methanol 200 ppm 250 ppm Headache; eye dam; dizziness; nausea ACGIH 2018 260 mg/m³ 200 ppm		
Storage conditions ncompatible products ncompatible materials SECTION 8: Exp 3.1. Control par Reactives Mix ACGIH ACGIH ACGIH ACGIH ACGIH OSHA OSHA OSHA OSHA 2-chloroethylvinyl e Not applicable	Society Controls/perso ameters Local name ACGIH TWA (p ACGIH STEL (p Remark (ACGII Regulatory refe OSHA PEL (TW OSHA PEL (TW Regulatory refe Sther (110-75-8)	 Keep only in the original conclosed when not in use. Strong bases. Strong acids. Sources of ignition. Direct s pm) ppm) H) rence VA) (mg/m³) VA) (ppm)	Methanol 200 ppm 250 ppm Headache; eye dam; dizziness; nausea ACGIH 2018 260 mg/m³ 200 ppm		
Storage conditions ncompatible products ncompatible materials SECTION 8: Expo 3.1. Control par Reactives Mix ACGIH ACGIH ACGIH ACGIH ACGIH ACGIH OSHA OSHA OSHA OSHA OSHA OSHA OSHA OSHA Cosha	Soure controls/perso ameters Local name ACGIH TWA (p ACGIH STEL (p Remark (ACGII Regulatory refe OSHA PEL (TW OSHA PEL (TW Regulatory refe ether (110-75-8)	 Keep only in the original conclosed when not in use. Strong bases. Strong acids. Sources of ignition. Direct s pm) ppm) H) rence VA) (mg/m³) VA) (ppm)	Methanol 200 ppm 250 ppm 4Eeadache; eye dam; dizziness; nausea ACGIH 2018 260 mg/m ³ 200 ppm OSHA		
Storage conditions ncompatible products ncompatible materials SECTION 8: Expl 3.1. Control par Reactives Mix ACGIH ACGIH ACGIH ACGIH ACGIH ACGIH OSHA OSHA OSHA OSHA OSHA OSHA OSHA OSHA Cosha	Social controls/perso ameters Local name ACGIH TWA (p ACGIH STEL (p Remark (ACGIH Regulatory refe OSHA PEL (TW OSHA PEL (TW Regulatory refe Ather (110-75-8) Cocal name	 Keep only in the original conclosed when not in use. Strong bases. Strong acids. Sources of ignition. Direct s conal protection appm) bpm) H) erence VA) (mg/m³) VA) (ppm) brence (US-OSHA)	Methanol 200 ppm 250 ppm 250 ppm Headache; eye dam; dizziness; nausea ACGIH 2018 260 mg/m ³ 200 ppm OSHA		
Storage conditions ncompatible products ncompatible materials SECTION 8: Expo 3.1. Control par Reactives Mix ACGIH ACGIH ACGIH ACGIH ACGIH ACGIH OSHA OSHA OSHA OSHA OSHA OSHA OSHA COSHA	Soure controls/perso ameters Local name ACGIH TWA (p ACGIH STEL (p Remark (ACGII Regulatory refe OSHA PEL (TW OSHA PEL (TW Regulatory refe ether (110-75-8)	 Keep only in the original conclosed when not in use. Strong bases. Strong acids. Sources of ignition. Direct s conal protection appm) bpm) H) erence VA) (mg/m³) VA) (ppm) brence (US-OSHA)	Methanol 200 ppm 250 ppm 464 2018 260 mg/m ³ 200 ppm 200 ppm 0SHA 200 ppm 0SHA 200 ppm 0SHA		
Storage conditions ncompatible products ncompatible materials SECTION 8: Exp 3.1. Control par Reactives Mix ACGIH ACGIH ACGIH ACGIH ACGIH ACGIH OSHA OSHA OSHA OSHA OSHA OSHA OSHA OSH	Social controls/perso ameters Local name ACGIH TWA (p ACGIH STEL (p Remark (ACGIH Regulatory refe OSHA PEL (TW OSHA PEL (TW Regulatory refe Ather (110-75-8) Cocal name	: Keep only in the original con- closed when not in use. : Strong bases. Strong acids. : Sources of ignition. Direct s onal protection opm) opm) H) erence VA) (mg/m³) VA) (ppm) erence (US-OSHA)	Methanol 200 ppm 250 ppm 464 AcGiH 2018 260 mg/m ³ 200 ppm OSHA Methyl acetate 200 ppm (Methyl acetate; USA; Time-weighted		
Storage conditions ncompatible products ncompatible materials SECTION 8: Expt 3.1. Control par Reactives Mix ACGIH ACGIH ACGIH ACGIH ACGIH OSHA OSHA OSHA OSHA OSHA OSHA OSHA COSHA OSHA OSHA OSHA	ACGIH TWA (p ACGIH TUO ACGIH STEL (p ACGIH STEL (p Remark (ACGIH Regulatory refe OSHA PEL (TW OSHA PEL (TW Regulatory refe Sther (110-75-8) 20-9) Local name ACGIH TWA (p	 Keep only in the original conclosed when not in use. Strong bases. Strong acids. Sources of ignition. Direct s conal protection appm) bpm) H) rence VA) (mg/m³) VA) (ppm) brence (US-OSHA) appm) bpm) bpm)	Methanol 200 ppm 250 ppm 464 2018 260 mg/m ³ 200 ppm 0SHA 200 ppm 0SHA 200 ppm 0SHA 200 ppm 0SHA		

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methyl acetate (79-20-9)				
OSHA	OSHA PEL (TWA) (mg/m ³)	610 mg/m ³		
OSHA	OSHA PEL (TWA) (ppm)	200 ppm		
OSHA	Regulatory reference (US-OSHA)	OSHA		
acrylonitrile, inhibited (10	7-13-1)			
ACGIH	Local name	Acrylonitrile		
ACGIH	ACGIH TWA (ppm)	2 ppm		
ACGIH	Remark (ACGIH)	CNS impair; LRT irr		
ACGIH	Regulatory reference	ACGIH 2018		
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	d chemical properties	
9.1. Information on basic	physical and chemical properties	
Physical state	: Liquid	
	: Colorless	
	: characteristic	
Odor threshold	: No data available	
pН	: No data available	
Melting point	: No data available	
Freezing point	: No data available	
Boiling point	: No data available	
Flash point	: No data available	

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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
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
10.0.	1 033101111	<u> </u>	1142414043	Icactions

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	1
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11.1. Information on toxicological effects

: Not classified

Reactives Mix		
ATE US (oral)	101.572 mg/kg body weight	
ATE US (dermal)	305.843 mg/kg body weight	
2-chloroethylvinyl ether (110-75-8)		
LD50 oral rat	250 mg/kg (Rat, Oral)	
LD50 dermal rabbit	3354 mg/kg (Rabbit, Dermal)	
ATE US (oral)	250 mg/kg body weight	
ATE US (dermal)	3354 mg/kg body weight	
methyl acetate (79-20-9)		
LD50 oral rat	6970 mg/kg (Rat; Equivalent or similar to OECD 401; Literature study; 6482 mg/kg bodyweight; Rat; Experimental value)	
LD50 dermal rat	> 2000 mg/kg (Rat; Literature study; OECD 402: Acute Dermal Toxicity; >2000 mg/kg bodyweight; Rat; Experimental value)	
LD50 dermal rabbit	> 5000 mg/kg (Rabbit; Literature study)	
LC50 inhalation rat (mg/l)	> 20 mg/l/4h (Rat; Literature study)	
ATE US (oral)	6970 mg/kg body weight	
acrylonitrile, inhibited (107-13-1)		
LD50 oral rat	95 mg/kg body weight (Rat, Female, Experimental value, Oral)	

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acrylonitrile, inhibited (107-13-1)		
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	
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	: Causes serious eye irritation.	
Respiratory or skin sensitization	: May cause an allergic skin reaction.	
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
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	: Based on available data, the classification criteria are not met.
symptoms	
Symptoms/effects	: Not expected to present a significant hazard under anticipated conditions of normal use.

SECTION 12: Ecological information

12.1. Toxicity

methyl acetate (79-20-9)	
LC50 fish 1	250 - 350 mg/l (LC50; OECD 203: Fish, Acute Toxicity Test; 96 h; Brachydanio rerio; Static system; Fresh water; Experimental value)
EC50 Daphnia 2	1026.7 mg/l (EC50; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)
Threshold limit algae 2	> 120 mg/l (EC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Scenedesmus subspicatus; Static system; Fresh water; Experimental value)
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)

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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)
2.2. Persistence and degradability	
Reactives Mix	
Persistence and degradability	Not established.
2-chloroethylvinyl ether (110-75-8)	
Persistence and degradability	Biodegradability in soil: no data available.
methyl acetate (79-20-9)	
Persistence and degradability	Readily biodegradable in water. Inherently biodegradable. Highly mobile in soil.
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 O₂/g substance
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 O₂/g substance
Chemical oxygen demand (COD)	1.42 g O₂/g substance
ThOD	1.5 g O₂/g substance
BOD (% of ThOD)	0.8 (Literature study)
2.3. Bioaccumulative potential	
Reactives Mix	
Bioaccumulative potential	Not established.
2-chloroethylvinyl ether (110-75-8)	
Log Pow	0.70 - 1.28 (Calculated)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
methyl acetate (79-20-9)	
BCF fish 1	< 1 (BCF)
Log Pow	0.37 (Calculated; KOWWIN; 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
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)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
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).
2.4. Mobility in soil	
methyl acetate (79-20-9)	
Surface tension	0.024 N/m (20 °C)
Log Koc	log Koc,OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC); 0.18; Experimental value;

	Sludge using High Performance Liquid Chromatography (HPLC); 0.18; Experimental value; GLP	
acrylonitrile, inhibited (107-13-1)		
Surface tension	26.6 mN/m (25 °C)	
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acrylonitrile, inhibited (107-13-1)	
Ecology - soil	No (test)data on mobility of the substance available.
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

Reactives Mix	
2-chloroethylvinyl ether (110-75-8)	
methyl acetate (79-20-9)	
acrylonitrile, inhibited (107-13-1)	
methanol (67-56-1)	

Other information

: Avoid release to the environment.

SECTION 13: Disposal consideration	IS
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 ; 2-chloroethylvinyl ether ; acrylonitrile, inhibited), 3 (6.1), II
UN-No.(DOT)	: UN1230
Proper Shipping Name (DOT)	: Methanol
	methanol ; 2-chloroethylvinyl ether ; acrylonitrile, inhibited

Class (DOT) Packing group (DOT) Subsidiary risk (DOT) Hazard labels (DOT)

DOT Packaging Non Bulk (49 CFR 173.xxx) DOT Packaging Bulk (49 CFR 173.xxx) DOT Symbols

- : 3 Class 3 Flammable and combustible liquid 49 CFR 173.120
- : II Medium Danger
- : 6.1 Class 6.1 Poisonous materials 49 CFR 173.132
- : 3 Flammable liquid 6.1 - Poison
- rammane Legendo
- : 202 : 242
- : + Fixes (cannot be altered) proper shipping name, hazard class, and packing group,I Proper shipping name appropriate for international and domestic transportation

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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
DOT Packaging Exceptions (49 CFR 173.xxx)	: 150
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 1L
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 ; 2-chloroethylvinyl ether ; acrylonitrile, inhibited), 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)	: 1L
Air transport	
Transport document description (IATA)	: UN 1230 Methanol (methanol ; 2-chloroethylvinyl ether ; acrylonitrile, inhibited), 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	
2-chloroethylvinyl ether (110-75-8)	
Listed on the United States TSCA (Toxic Substa Not subject to reporting requirements of the Uni	
CERCLA RQ	1000 lb

methyl acetate (79-20-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

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acrylonitrile, inhibited (107-13-1)	
Listed on the United States TSCA (Toxic Substan Subject to reporting requirements of United State	
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
methanol (67-56-1)	
Listed on the United States TSCA (Toxic Substan Subject to reporting requirements of United State	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	5000 lb

15.2. International regulations

CANADA

2-chloroethylvinyl ether (110-75-8)	
Listed on the Canadian NDSL (Non-Domestic Substances List)	
methyl acetate (79-20-9)	
Listed on the Canadian DSL (Domestic Substances List)	
acrylonitrile, inhibited (107-13-1)	
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)	
methanol (67-56-1)	
Listed on EPA Hazardous Air Pollutant (HAPS)	

15.3. US State regulations

acrylonitrile, inf	nibited (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	
methanol (67-56	5-1)				
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)

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SECTION 16: Other information	
Revision date	: 12/12/2019
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
H319	Causes serious eye irritation
H350	May cause cancer
H370	Causes damage to organs

Phenova US SDS REV

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