Elevated VOA Mix

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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SECTION 1: Identification

1.1. Identification

Product form : Mixture

Product name : Elevated VOA Mix

Product code : AL0-180003

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
Serious eye damage/eye irritation Category 2	H319	Causes serious eye irritation
Carcinogenicity Category 1B	H350	May cause cancer
Specific target organ toxicity (single exposure) Category 1	H370	Causes damage to organs
Specific target organ toxicity (repeated exposure) Category 1	H372	Causes damage to organs through prolonged or repeated exposure

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
H319 - Causes serious eye irritation
H350 - May cause cancer
H370 - Causes damage to organs
H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary statements (GHS US) : 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.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 - If swallowed: Immediately call a poison center or doctor

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.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P361+P364 - Take off immediately all contaminated clothing and wash it 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. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	Conc.
methanol (Component)	(CAS-No.) 67-56-1	75
acetone (Component)	(CAS-No.) 67-64-1	1
acetonitrile (Component)	(CAS-No.) 75-05-8	1
2-methyl-2-butanol (Component)	(CAS-No.) 75-85-4	1
tert-Butanol (Component)	(CAS-No.) 75-65-0	1
methacrylonitrile (Component)	(CAS-No.) 126-98-7	1
2-Butanone (Component)	(CAS-No.) 78-93-3	1
2-hexanone (Component)	(CAS-No.) 591-78-6	1
Isobutanol (Component)	(CAS-No.) 78-83-1	1
cyclohexanone (Component)	(CAS-No.) 108-94-1	1
ethyl acetate (Component)	(CAS-No.) 141-78-6	1
ethanol (Component)	(CAS-No.) 64-17-5	1
1,4-dioxane (Component)	(CAS-No.) 123-91-1	1
propionitrile (Component)	(CAS-No.) 107-12-0	1
4-Methyl-2-Pentanone (Component)	(CAS-No.) 108-10-1	1
tetrahydrofuran (Component)	(CAS-No.) 109-99-9	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 exposed or concerned: Get medical advice/attention.

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.

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 : Use extinguishing media appropriate for surrounding fire.

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 : Take up in absorbent material. Collect spillage.

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.

Hygiene measures : Gently wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container closed when not in use. Keep container tightly closed and in a well-ventilated place. Keep away from any flames or sparking source.

Incompatible materials : Direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Elevated VOA 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

Elevated VOA Mix		
OSHA	OSHA PEL (TWA) (mg/m³)	260 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	200 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

acetone (67-64-1)		
ACGIH	Local name	Acetone
ACGIH	ACGIH TWA (ppm)	250 ppm
ACGIH	ACGIH STEL (ppm)	500 ppm
ACGIH	Remark (ACGIH)	eye irr; CNS impair; BEI
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	2400 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

acetonitrile (75-05-8)		
ACGIH	Local name	Acetonitrile
ACGIH	ACGIH TWA (ppm)	20 ppm
ACGIH	Remark (ACGIH)	LRT irr
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	70 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	40 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

2-methyl-2-butanol (75-85-4)
Not applicable

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/m³)	300 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	100 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

2-Butanone (78-93-3)		
ACGIH	Local name	Methyl ethyl ketone (MEK)
ACGIH	ACGIH TWA (ppm)	200 ppm (Methyl ethyl ketone (MEK); USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	ACGIH STEL (ppm)	300 ppm (Methyl ethyl ketone (MEK); USA; Short time value; TLV - Adopted Value)
ACGIH	Remark (ACGIH)	URT irr; CNS & PNS impair
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	590 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	200 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

cyclohexanone (108-94-1)		
ACGIH	Local name	Cyclohexanone
ACGIH	ACGIH TWA (ppm)	20 ppm

cyclohexanone (108-94-1)		
ACGIH	ACGIH STEL (ppm)	50 ppm
ACGIH	Remark (ACGIH)	Eye & URT irr
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	200 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	50 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

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/m³)	360 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	100 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

ethanol (64-17-5)		
ACGIH	Local name	Ethanol
ACGIH	ACGIH STEL (ppm)	1000 ppm
ACGIH	Remark (ACGIH)	URT irr
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	1900 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

ethyl acetate (141-78-6)		
ACGIH	Local name	Ethyl acetate
ACGIH	ACGIH TWA (ppm)	400 ppm
ACGIH	Remark (ACGIH)	URT & eye irr
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	1400 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	400 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

Isobutanol (78-83-1)		
ACGIH	Local name	Isobutanol
ACGIH	ACGIH TWA (ppm)	50 ppm
ACGIH	Remark (ACGIH)	Skin & eye irr
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	300 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	100 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

2-hexanone (591-78-6)		
ACGIH	Local name	Methyl n-butyl ketone
ACGIH	ACGIH TWA (ppm)	5 ppm
ACGIH	ACGIH STEL (ppm)	10 ppm
ACGIH	Remark (ACGIH)	Peripheral neuropathy; testicular dam

2-hexanone (591-78-6)		
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	410 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	100 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

methacrylonitrile (126-98-7)		
ACGIH	Local name	Methylacrylonitrile
ACGIH	ACGIH TWA (ppm)	1 ppm
ACGIH	Remark (ACGIH)	CNS impair; eye & skin irr
ACGIH	Regulatory reference	ACGIH 2018

4-Methyl-2-Pentanone (108-10-1)		
ACGIH	Local name	Methyl isobutyl ketone
ACGIH	ACGIH TWA (ppm)	20 ppm (Methyl isobutyl ketone; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	ACGIH STEL (ppm)	75 ppm (Methyl isobutyl ketone; USA; Short time value; TLV - Adopted Value)
ACGIH	Remark (ACGIH)	URT irr; dizziness; headache
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	410 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	100 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

propionitrile (107-12-0)
Not applicable

tetrahydrofuran (109-99-9)		
ACGIH	Local name	Tetrahydrofuran
ACGIH	ACGIH TWA (ppm)	50 ppm (Tetrahydrofuran; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	ACGIH STEL (ppm)	100 ppm (Tetrahydrofuran; USA; Short time value; TLV - Adopted Value)
ACGIH	Remark (ACGIH)	URT irr; CNS impair; kidney dam
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m³)	590 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	200 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

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/m³)	260 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	200 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA

8.2. Appropriate engineering controls

Appropriate engineering controls : Either local exhaust or general room ventilation is usually required.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure. Gloves. Protective clothing. Protective goggles. Safety glasses.

Hand protection:

Wear chemically resistant protective gloves. Wear suitable gloves resistant to chemical penetration

Eye protection:

Chemical goggles or safety glasses. Safety glasses

Skin and body protection:

Wear chemically protective gloves, lab coat or apron to prevent prolonged or repeated skin contact

Respiratory protection:

Wear appropriate mask

Personal protective equipment symbol(s):

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
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

No additional information available

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Elevated VOA Mix	
ATE US (oral)	125.692 mg/kg body weight
ATE US (dermal)	383.456 mg/kg body weight

acetone (67-64-1)	
LD50 oral rat	5800 mg/kg (Equivalent or similar to OECD 401, Rat, Female, Experimental value, Oral)
LD50 dermal rabbit	20000 mg/kg (Equivalent or similar to OECD 402, Rabbit, Male, Experimental value, Dermal)
LC50 inhalation rat (mg/l)	76 mg/l (Other, 4 h, Rat, Female, Experimental value, Inhalation (vapours))
ATE US (oral)	5800 mg/kg body weight
ATE US (dermal)	20000 mg/kg body weight
ATE US (vapors)	76 mg/l/4h
ATE US (dust, mist)	76 mg/l/4h

acetonitrile (75-05-8)	
LD50 dermal rabbit	> 2000 mg/kg body weight (Equivalent or similar to OECD 402, 24 h, Rabbit, Male / female, Experimental value, Dermal, 14 day(s))
ATE US (oral)	500 mg/kg body weight
ATE US (dermal)	1100 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-methyl-2-butanol (75-85-4)	
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

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

cyclohexanone (108-94-1)	
LD50 oral rat	1890 mg/kg body weight (BASF test, Rat, Experimental value, Oral, 7 day(s))

cyclohexanone (108-94-1)	
LC50 inhalation rat (mg/l)	> 6.2 mg/l air (BASF test, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours))
ATE US (oral)	1890 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-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

ethanol (64-17-5)	
LD50 oral rat	10740 mg/kg body weight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral)
LD50 dermal rabbit	> 16000 mg/kg (Rabbit, Literature study, Dermal)
LC50 inhalation rat (mg/l)	117 - 125 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation)
ATE US (oral)	10740 mg/kg body weight

ethyl acetate (141-78-6)	
LD50 oral rat	10200 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Female, Experimental value, Oral)
LD50 dermal rabbit	> 20000 mg/kg body weight (24 hour cuff method, 24 h, Rabbit, Male, Experimental value, Dermal)
ATE US (oral)	10200 mg/kg body weight

Isobutanol (78-83-1)	
LD50 oral rat	> 2830 mg/kg body weight (OECD 401: Acute Oral Toxicity, Rat, Male, Experimental value, Oral)
LD50 dermal rabbit	> 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rabbit, Male, Experimental value, Dermal)
LC50 inhalation rat (mg/l)	24.6 mg/l air (Other, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours))

2-hexanone (591-78-6)	
LD50 oral rat	2590 mg/kg (Rat, Oral)
LD50 dermal rabbit	4800 mg/kg (Rabbit, Dermal)
LC50 inhalation rat (mg/l)	33 mg/l (4 h, Rat, Inhalation)
LC50 inhalation rat (ppm)	8000 ppm (4 h, Rat, Inhalation)
ATE US (oral)	2590 mg/kg body weight
ATE US (dermal)	4800 mg/kg body weight
ATE US (vapors)	33 mg/l/4h
ATE US (dust, mist)	33 mg/l/4h

methacrylonitrile (126-98-7)	
LD50 oral rat	64 - 73 mg/kg (Rat)
LD50 dermal rabbit	280 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	0.66 mg/l/4h (Rat)
LC50 inhalation rat (ppm)	328 ppm/4h (Rat)
ATE US (oral)	64 mg/kg body weight
ATE US (dermal)	280 mg/kg body weight
ATE US (gases)	328 ppmV/4h
ATE US (vapors)	0.66 mg/l/4h
ATE US (dust, mist)	0.66 mg/l/4h

4-Methyl-2-Pentanone (108-10-1)	
LD50 oral rat	2080 mg/kg (Rat; Equivalent or similar to OECD 401; Experimental value)
LD50 dermal rat	>= 2000 mg/kg body weight (Rat; Experimental value; OECD 402: Acute Dermal Toxicity)

4-Methyl-2-Pentanone (108-10-1)	
LD50 dermal rabbit	> 16000 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	8.2- 16.4,Rat; Experimental value
LC50 inhalation rat (ppm)	2000 - 4000 ppm/4h (Rat; Experimental value)
ATE US (oral)	2080 mg/kg body weight
ATE US (gases)	2000 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

propionitrile (107-12-0)	
LD50 oral rat	39 mg/kg (Rat)
LD50 dermal rabbit	164 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	1.6 mg/l/4h (Rat)
LC50 inhalation rat (ppm)	730 ppm/4h (Rat)
ATE US (oral)	39 mg/kg body weight
ATE US (dermal)	164 mg/kg body weight
ATE US (gases)	730 ppmV/4h
ATE US (vapors)	1.6 mg/l/4h
ATE US (dust, mist)	1.6 mg/l/4h

tetrahydrofuran (109-99-9)	
LD50 oral rat	1650 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value; 1650 mg/kg bodyweight; Rat; OECD 401: Acute Oral Toxicity; Experimental value)
LD50 dermal rat	> 2000 mg/kg body weight (Rat; Experimental value; OECD 402: Acute Dermal Toxicity)
LC50 inhalation rat (mg/l)	54 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	18200 ppm/4h (Rat; Literature study)
ATE US (oral)	1650 mg/kg body weight
ATE US (gases)	18200 ppmV/4h
ATE US (vapors)	54 mg/l/4h
ATE US (dust, mist)	54 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 : Not classified

Germ cell mutagenicity : Not classified

Based on available data, the classification criteria are not met

Carcinogenicity : May cause cancer.

cyclohexanone (108-94-1)	
IARC group	3 - Not classifiable

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

4-Methyl-2-Pentanone (108-10-1)	
IARC group	2B - Possibly carcinogenic to humans

tetrahydrofuran (109-99-9)	
IARC group	2B - Possibly carcinogenic to humans

Reproductive toxicity : Not classified
Based on available data, the classification criteria are not met

STOT-single exposure : Causes damage to organs.

STOT-repeated exposure : Causes damage to organs through prolonged or repeated exposure.

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

acetone (67-64-1)	
LC50 fish 1	5540 mg/l (EU Method C.1, 96 h, Salmo gairdneri, Static system, Fresh water, Experimental value, Nominal concentration)

acetonitrile (75-05-8)	
LC50 fish 1	1640 mg/l (Other, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value, Soft water)
EC50 Daphnia 1	> 1000 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Semi-static system, Fresh water, Experimental value, GLP)
ErC50 (algae)	9696 mg/l (ISO 10253, 72 h, Phaeodactylum, Static system, Salt water, Experimental value, GLP)

2-methyl-2-butanol (75-85-4)	
LC50 fish 1	2430 mg/l (Leuciscus idus)
EC50 Daphnia 1	3185 mg/l (24 h, Daphnia magna)

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-Butanone (78-93-3)	
EC50 Daphnia 1	308 mg/l (EC50; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)
LC50 fish 2	2993 mg/l (LC50; OECD 203: Fish, Acute Toxicity Test; 96 h; Pimephales promelas; Static system; Fresh water; Experimental value)

cyclohexanone (108-94-1)	
LC50 fish 1	527 - 732 mg/l (US EPA, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)
EC50 Daphnia 1	> 100 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Read-across, GLP)
ErC50 (algae)	> 100 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Read-across, 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)

ethanol (64-17-5)	
LC50 fish 1	14200 mg/l (US EPA, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)

ethyl acetate (141-78-6)	
LC50 fish 1	230 mg/l (US EPA, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)
EC50 Daphnia 1	154 mg/l (48 h, Daphnia magna, Literature)

Isobutanol (78-83-1)	
LC50 fish 1	1430 mg/l (Other, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)
EC50 Daphnia 1	1100 mg/l (ASTM, 48 h, Daphnia pulex, Static system, Fresh water, Experimental value, Nominal concentration)
ErC50 (algae)	1799 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)

2-hexanone (591-78-6)	
LC50 fish 1	428 mg/l (96 h, Pimephales promelas, Flow-through system)

methacrylonitrile (126-98-7)	
LC50 fish 1	100 - 1000 mg/l (LC50; 96 h)

4-Methyl-2-Pentanone (108-10-1)	
LC50 fish 1	600 mg/l (96 h, Salmo gairdneri, Fresh water, Literature study)
EC50 Daphnia 1	> 200 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
LC50 fish 2	> 179 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Static system, Fresh water, Experimental value, GLP)

propionitrile (107-12-0)	
LC50 fish 1	1520 mg/l (LC50; 96 h; Pimephales promelas)

tetrahydrofuran (109-99-9)	
LC50 fish 1	2160 mg/l (LC50; Equivalent or similar to OECD 203; 96 h; Pimephales promelas; Flow-through system; Fresh water; Experimental value)
Threshold limit algae 2	3700 mg/l (EC0; Other; 8 days; Scenedesmus quadricauda; Static system; Fresh water; Experimental value)

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

Elevated VOA Mix	
Persistence and degradability	Not established.

acetone (67-64-1)	
Persistence and degradability	Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	1.43 g O_2/g substance
Chemical oxygen demand (COD)	1.92 g O_2/g substance
ThOD	2.2 g O_2/g substance
BOD (% of ThOD)	0.872 (20 day(s), Literature study)

acetonitrile (75-05-8)	
Persistence and degradability	Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.17 g O_2/g substance
ThOD	3.12 g O_2/g substance

2-methyl-2-butanol (75-85-4)	
Persistence and degradability	Not readily biodegradable in water.

2-methyl-2-butanol (75-85-4)	
ThOD	2.72 g O_2/g substance

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-Butanone (78-93-3)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions.
Biochemical oxygen demand (BOD)	2.03 g O_2/g substance
Chemical oxygen demand (COD)	2.31 g O_2/g substance
ThOD	2.44 g O_2/g substance
BOD (% of ThOD)	> 0.5 (5 days; Literature study)

cyclohexanone (108-94-1)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	1.232 g O_2/g substance
Chemical oxygen demand (COD)	2.605 g O_2/g substance
ThOD	2.605 g O_2/g substance

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

ethanol (64-17-5)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.8 - 0.967 g O_2/g substance
Chemical oxygen demand (COD)	1.7 g O_2/g substance
ThOD	2.1 g O_2/g substance
BOD (% of ThOD)	0.43

ethyl acetate (141-78-6)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.293 g O_2/g substance
Chemical oxygen demand (COD)	1.69 g O_2/g substance
ThOD	1.82 g O_2/g substance

Isobutanol (78-83-1)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.

2-hexanone (591-78-6)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
ThOD	2.72 g O_2/g substance

methacrylonitrile (126-98-7)	
Persistence and degradability	Biodegradable in the soil.

4-Methyl-2-Pentanone (108-10-1)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions. Low potential for adsorption in soil. Photolysis in the air.

4-Methyl-2-Pentanone (108-10-1)	
Biochemical oxygen demand (BOD)	2.06 g O_2/g substance
Chemical oxygen demand (COD)	2.16 g O_2/g substance
ThOD	2.72 g O_2/g substance
BOD (% of ThOD)	0.76

propionitrile (107-12-0)	
Persistence and degradability	Biodegradability in water: no data available.

tetrahydrofuran (109-99-9)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Highly mobile in soil.
Chemical oxygen demand (COD)	1.855 g O_2/g substance
ThOD	2.44 g O_2/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 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

Elevated VOA Mix	
Bioaccumulative potential	Not established.

acetone (67-64-1)	
BCF fish 1	0.69 (Pisces)
BCF other aquatic organisms 1	3 (BCFWIN, Calculated value)
Log Pow	-0.24 (Test data)
Bioaccumulative potential	Not bioaccumulative.

acetonitrile (75-05-8)	
BCF other aquatic organisms 1	3.162 (BCFWIN, Weight of evidence)
Log Pow	-0.54 (Weight of evidence approach, Equivalent or similar to OECD 107, 25 °C)
Bioaccumulative potential	Not bioaccumulative.

2-methyl-2-butanol (75-85-4)	
BCF fish 1	3 (528 h, Estimated value)
Log Pow	0.89 (Experimental value)
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-Butanone (78-93-3)	
Log Pow	0.3 (Experimental value; OECD 117: Partition Coefficient (n-octanol/water), HPLC method; 40 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

cyclohexanone (108-94-1)	
BCF other aquatic organisms 1	2.4 (QSAR)
Log Pow	0.86 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)
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.

ethanol (64-17-5)	
BCF fish 1	1 (Other, 72 h, Cyprinus carpio, Static system, Fresh water, Read-across)
Log Pow	-0.31 (Experimental value)
Bioaccumulative potential	Not bioaccumulative.

ethyl acetate (141-78-6)	
BCF fish 1	30 (3 day(s), Leuciscus idus, Static system, Experimental value)
Log Pow	0.68 (Experimental value, EPA OPPTS 830.7560, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

Isobutanol (78-83-1)	
Log Pow	1 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

2-hexanone (591-78-6)	
Log Pow	1.38

methacrylonitrile (126-98-7)	
Bioaccumulative potential	Not bioaccumulative.

4-Methyl-2-Pentanone (108-10-1)	
BCF fish 1	2 - 5 (BCF)
Log Pow	1.9 (Experimental value; OECD 117: Partition Coefficient (n-octanol/water), HPLC method)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

propionitrile (107-12-0)	
Log Pow	0.16
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

tetrahydrofuran (109-99-9)	
Log Pow	0.45 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 25 °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

acetone (67-64-1)	
Surface tension	0.0237 N/m
Ecology - soil	No (test)data on mobility of the substance available.

acetonitrile (75-05-8)	
Surface tension	0.029 N/m (20 °C)
Log Koc	0.65 (log Koc, Calculated value)
Ecology - soil	Highly mobile in soil.

2-methyl-2-butanol (75-85-4)	
Surface tension	0.023 N/m (20 °C)

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-Butanone (78-93-3)	
Surface tension	0.024 N/m (20 °C)
Log Koc	Koc,34; Calculated value
Ecology - soil	Slightly harmful to plants.

cyclohexanone (108-94-1)	
Surface tension	0.034 N/m (20 °C)
Log Koc	1.18 (log Koc, SRC PCKOCWIN v1.66, Calculated value)

cyclohexanone (108-94-1)	
Ecology - soil	Highly mobile in soil.

1,4-dioxane (123-91-1)	
Surface tension	0.037 N/m (20 °C)

ethanol (64-17-5)	
Surface tension	0.022 N/m (20 °C)
Ecology - soil	Highly mobile in soil.

ethyl acetate (141-78-6)	
Surface tension	0.024 N/m (20 °C)
Ecology - soil	Low potential for adsorption in soil.

Isobutanol (78-83-1)	
Surface tension	0.0697 N/m (20 °C, 1 g/l, OECD 115: Surface Tension of Aqueous Solutions)
Log Koc	0.31 (log Koc, SRC PCKOCWIN v1.66, Calculated value)
Ecology - soil	Highly mobile in soil.

2-hexanone (591-78-6)	
Surface tension	0.025 N/m (20 °C)

methacrylonitrile (126-98-7)	
Surface tension	0.024 N/m (20 °C)

4-Methyl-2-Pentanone (108-10-1)	
Surface tension	0.024 N/m (20 °C)
Log Koc	Koc,101.85; Weight of evidence; Calculated value; log Koc; 2.008; Weight of evidence; Calculated value
Ecology - soil	Low potential for adsorption in soil.

propionitrile (107-12-0)	
Surface tension	0.027 N/m (25 °C)

tetrahydrofuran (109-99-9)	
Surface tension	0.028 N/m
Log Koc	log Koc,1.26 - 1.37; Experimental value
Ecology - soil	Highly mobile in soil.

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

Elevated VOA Mix	

acetone (67-64-1)	

acetonitrile (75-05-8)	

2-methyl-2-butanol (75-85-4)	

tert-Butanol (75-65-0)	

2-Butanone (78-93-3)	

cyclohexanone (108-94-1)	

1,4-dioxane (123-91-1)	

ethanol (64-17-5)	

ethyl acetate (141-78-6)	

Isobutanol (78-83-1)	

2-hexanone (591-78-6)	

methacrylonitrile (126-98-7)	

4-Methyl-2-Pentanone (108-10-1)	

propionitrile (107-12-0)	

tetrahydrofuran (109-99-9)	

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 : UN1992 Flammable liquids, toxic, n.o.s. (methanol ; acetonitrile ; ; 2-hexanone ; cyclohexanone ; 1,4-dioxane ; propionitrile ; tetrahydrofuran), 3 (6.1), II

UN-No.(DOT) : UN1992

Proper Shipping Name (DOT) : Flammable liquids, toxic, n.o.s.

methanol ; acetonitrile ; ; 2-hexanone ; cyclohexanone ; 1,4-dioxane ; propionitrile ; tetrahydrofuran

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) : 243

DOT Symbols : G - Identifies PSN requiring a technical name

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: tr is the maximum mean bulk temperature during transport, tf 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 (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively. TP13 - Self-contained breathing apparatus must be provided when this hazardous material is transported by sea.
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 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (methanol ; acetonitrile ; methacrylonitrile ; 2-hexanone ; cyclohexanone ; 1,4-dioxane ; propionitrile ; tetrahydrofuran), 3 (6.1), II
UN-No. (IMDG)	:	1992
Proper Shipping Name (IMDG)	:	FLAMMABLE LIQUID, TOXIC, N.O.S.
Class (IMDG)	:	3 - Flammable liquids
Packing group (IMDG)	:	II - substances presenting medium danger
Subsidiary risks (IMDG)	:	6.1 - Toxic substances

Air transport

Transport document description (IATA)	:	UN 1992 Flammable liquid, toxic, n.o.s. (methanol ; acetonitrile ; ; 2-hexanone ; cyclohexanone ; 1,4-dioxane ; propionitrile ; tetrahydrofuran), 3 (6.1), II
UN-No. (IATA)	:	1992
Proper Shipping Name (IATA)	:	Flammable liquid, toxic, n.o.s.
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

acetone (67-64-1)	
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	5000 lb

acetonitrile (75-05-8)	
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	5000 lb

2-methyl-2-butanol (75-85-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

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-Butanone (78-93-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Not subject to reporting requirements of the United States SARA Section 313	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	5000 lb

cyclohexanone (108-94-1)	
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	5000 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

ethanol (64-17-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

ethyl acetate (141-78-6)	
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	5000 lb

Isobutanol (78-83-1)	
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	5000 lb

2-hexanone (591-78-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
EPA TSCA Regulatory Flag	S - S - indicates a substance that is identified in a final Significant New Use Rule.

methacrylonitrile (126-98-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	1000 lb
RQ (Reportable quantity, section 304 of EPA's List of Lists)	1000 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb

4-Methyl-2-Pentanone (108-10-1)	
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

propionitrile (107-12-0)	
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	10 lb
RQ (Reportable quantity, section 304 of EPA's List of Lists)	10 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb

tetrahydrofuran (109-99-9)	
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

acetone (67-64-1)
Listed on the Canadian DSL (Domestic Substances List)

acetonitrile (75-05-8)
Listed on the Canadian DSL (Domestic Substances List)

2-methyl-2-butanol (75-85-4)
Listed on the Canadian DSL (Domestic Substances List)

tert-Butanol (75-65-0)
Listed on the Canadian DSL (Domestic Substances List)

2-Butanone (78-93-3)
Listed on the Canadian DSL (Domestic Substances List)

cyclohexanone (108-94-1)
Listed on the Canadian DSL (Domestic Substances List)

1,4-dioxane (123-91-1)
Listed on the Canadian DSL (Domestic Substances List)

ethanol (64-17-5)
Listed on the Canadian DSL (Domestic Substances List)

ethyl acetate (141-78-6)
Listed on the Canadian DSL (Domestic Substances List)

Isobutanol (78-83-1)
Listed on the Canadian DSL (Domestic Substances List)

2-hexanone (591-78-6)
Listed on the Canadian DSL (Domestic Substances List)

methacrylonitrile (126-98-7)
Listed on the Canadian NDSL (Non-Domestic Substances List)

4-Methyl-2-Pentanone (108-10-1)
Listed on the Canadian DSL (Domestic Substances List)

propionitrile (107-12-0)
Listed on the Canadian DSL (Domestic Substances List)

tetrahydrofuran (109-99-9)
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

acetonitrile (75-05-8)
Listed on EPA Hazardous Air Pollutant (HAPS)

2-Butanone (78-93-3)
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)

ethanol (64-17-5)
Listed on IARC (International Agency for Research on Cancer)

4-Methyl-2-Pentanone (108-10-1)
Listed on IARC (International Agency for Research on Cancer) Listed on EPA Hazardous Air Pollutant (HAPS)

tetrahydrofuran (109-99-9)
Listed on IARC (International Agency for Research on Cancer)

methanol (67-56-1)
Listed on EPA Hazardous Air Pollutant (HAPS)

15.3. US State regulations

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	

2-hexanone (591-78-6)					
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	Yes		

4-Methyl-2-Pentanone (108-10-1)					
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	Yes	No	No		

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 : 04/06/2020

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

Full text of H-phrases:

H225	Highly flammable liquid and vapour
H301	Toxic if swallowed
H311	Toxic in contact with skin
H319	Causes serious eye irritation
H350	May cause cancer
H370	Causes damage to organs
H372	Causes damage to organs through prolonged or repeated exposure

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