T4+

Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)
Issue date: 2/13/2025 Version: 1.0

SECTION 1 Identification

1.1. Product identifier

Product form : Mixture
Trade name : T4+

1.2. Other means of identification

No additional information available

1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture : Fuel
Restrictions on use : No additional information available

1.4. Supplier's details

Supplier
VP Racing Fuels, Inc.
7124 Richter Road
Elmendorf, TX 78112
USA
T +1 210-635-7744

1.5. Emergency phone number

Emergency number : 1-800-424-9300 (24-7)

SECTION 2 Hazard Identification

2.1. Classification of the substance or mixture

GHS US classification

Flammable liquid, Category 2	H225	Highly flammable liquid and vapor.
Skin corrosion/irritation, Category 2	H315	Causes skin irritation.
Serious eye damage/eye irritation, Category 2	H319	Causes serious eye irritation.
Germ cell mutagenicity, Category 1B	H340	May cause genetic defects.
Carcinogenicity, Category 1B	H350	May cause cancer.
Reproductive toxicity, Category 2	H361	Suspected of damaging fertility or the unborn child.
Specific target organ toxicity – Single exposure, Category 3, Narcosis	H336	May cause drowsiness or dizziness.
Specific target organ toxicity — Repeated exposure, Category 2	H373	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard, Category 1	H304	May be fatal if swallowed and enters airways.
Hazardous to the aquatic environment — Acute Hazard, Category 3	H402	Harmful to aquatic life.
Hazardous to the aquatic environment — Chronic Hazard, Category 3	H412	Harmful to aquatic life with long lasting effects.

Full text of H statements : see section 16

2.2. Label elements

GHS US labeling

Hazard pictograms (GHS US) :

Signal word (GHS US) : Danger

Hazard statements (GHS US)	:	H225 - Highly flammable liquid and vapor H304 - May be fatal if swallowed and enters airways H315 - Causes skin irritation H319 - Causes serious eye irritation H336 - May cause drowsiness or dizziness H340 - May cause genetic defects. H350 - May cause cancer. H361 - Suspected of damaging fertility or the unborn child H373 - May cause damage to organs through prolonged or repeated exposure H402 - Harmful to aquatic life H412 - Harmful to aquatic life with long lasting effects
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. P240 - Ground/Bond container and receiving equipment. P241 - Use explosion-proof electrical, ventilating, lighting equipment. P242 - Use non-sparking tools. P243 - Take action to prevent static discharges. P260 - Do not breathe vapors. P264 - Wash hands thoroughly after handling. P271 - Use only outdoors or in a well-ventilated area. P273 - Avoid release to the environment. P280 - Wear protective gloves, protective clothing, eye and face protection. P301+P310 - If swallowed: Immediately call a POISON CENTER, a doctor. P302+P352 - If on skin: Wash with plenty of soap and water. P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing. 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. P312 - Call a POISON CENTER, a doctor if you feel unwell. P314 - Get medical advice or attention if you feel unwell. P321 - Specific treatment (see supplemental first aid instruction on this label). P331 - Do NOT induce vomiting. P332+P313 - If skin irritation occurs: Get medical advice or attention. P337+P313 - If eye irritation persists: Get medical advice or attention. P362+P364 - Take off contaminated clothing and wash it before reuse. P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO2), extinguishing powder to extinguish. P403+P235 - Store in a well-ventilated place. Keep cool. P405 - Store locked up. P501 - Dispose of contents and container to a hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

2.4. Hazards not otherwise classified

No additional information available

2.5. Unknown acute toxicity

No additional information available

SECTION 3 Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Comments : The exact percentage (concentration) in the composition has been withheld as a trade secret in accordance with paragraph (i) of § 1910.1200

Name	Product identifier	%	GHS US classification
2-ethoxy-2-methylpropane	CAS-No.: 637-92-3	30 - 60	Flam. Liq. 2, H225 STOT SE 3, H336 Aquatic Acute 3, H402
Toluene	CAS-No.: 108-88-3	10 - 30	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Repr. 2, H361 STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 3, H412
Cyclopentane	CAS-No.: 287-92-3	7 - 13	Flam. Liq. 2, H225 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 3, H412
Naphtha (petroleum), full-range alkylate	CAS-No.: 64741-64-6	10 - 30	Muta. 1B, H340 Carc. 1B, H350 Asp. Tox. 1, H304
Isopentane	CAS-No.: 78-78-4	10 - 30	Flam. Liq. 1, H224 Eye Irrit. 2B, H320 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
2-methylbut-2-ene	CAS-No.: 513-35-9	5 - 10	Flam. Liq. 1, H224 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Muta. 2, H341 Carc. 2, H351 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
Ethanol	CAS-No.: 64-17-5	1 - 5	Flam. Liq. 2, H225 Eye Irrit. 2, H319
2-methylpropan-2-ol	CAS-No.: 75-65-0	1 - 5	Flam. Liq. 2, H225 Acute Tox. 4 (Inhalation), H332 Eye Irrit. 2A, H319 STOT SE 3, H335
2-methylbut-1-ene	CAS-No.: 563-46-2	1 - 5	Flam. Liq. 1, H224 Asp. Tox. 1, H304

Name	Product identifier	%	GHS US classification
2-butoxyethanol	CAS-No.: 111-76-2	0.1 - 1	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 3 (Inhalation), H331 Skin Irrit. 2, H315 Eye Irrit. 2A, H319
Acetone	CAS-No.: 67-64-1	0.1 - 1	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336 STOT SE 3, H335
2-methylpropene	CAS-No.: 115-11-7	0.1 - 1	Flam. Gas 1, H220 Press. Gas (Comp.), H280
Butanone	CAS-No.: 78-93-3	0.1 - 1	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336
Tert-butyl methyl ether	CAS-No.: 1634-04-4	0.1 - 1	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2B, H320 STOT SE 2, H371 STOT SE 3, H336
n-hexane	CAS-No.: 110-54-3	0.1 - 1	Flam. Liq. 2, H225 Asp. Tox. 1, H304 STOT RE 2, H373 Skin Irrit. 2, H315 STOT SE 3, H336 Aquatic Chronic 2, H411 Repr. 2, H361
N,N-diethylhydroxylamine	CAS-No.: 3710-84-7	< 0.1	Flam. Liq. 3, H226 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 STOT SE 3, H335 Aquatic Chronic 2, H411
Diethyl phthalate	CAS-No.: 84-66-2	< 0.1	Not classified
2,2',2"-nitrilotriethanol	CAS-No.: 102-71-6	< 0.1	Not classified
Butyl lactate	CAS-No.: 138-22-7	< 0.1	Skin Irrit. 2, H315 Eye Irrit. 2A, H319
1,2,4-trimethylbenzene	CAS-No.: 95-63-6	< 0.1	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Aquatic Chronic 2, H411

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

SECTION 4 First aid measures

4.1. Description of necessary first-aid measures

First-aid measures general : If medical advice is needed, have product container or label at hand.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention if you feel unwell. Give oxygen or artificial respiration if necessary.

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. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact : Immediately rinse with water for a prolonged period while holding the eyelids wide open. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : If swallowed, seek medical advice immediately and show this container or label. Do NOT induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms/effects, acute and delayed

Symptoms/effects after inhalation : May cause drowsiness or dizziness. At high concentrations, the vapors can be irritating to the respiratory system.

Symptoms/effects after skin contact : Causes skin irritation. Redness. Itching. Swelling.

Symptoms/effects after eye contact : Causes serious eye irritation. Redness. Itching. Lacrimation. Blurred vision.

Symptoms/effects after ingestion : May be fatal if swallowed and enters airways. Aspiration of the product into the lungs may cause very serious pneumonia. Ingestion may cause nausea, vomiting and diarrhea. Abdominal pain.

Chronic symptoms : May cause genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Other medical advice or treatment : Treat symptomatically. Symptoms may be delayed. Keep under medical supervision for at least 48 hours.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Dry chemical, CO2, dry sand, or alcohol-resistant foam. Use extinguishing agent suitable for surrounding fire.

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

5.2. Specific hazards arising from the chemical

Fire hazard : Highly flammable liquid and vapor. Vapors are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapors. Burning produces irritating, toxic and noxious fumes. In case of fire and/or explosion do not breathe fumes.

Explosion hazard : Vapors may form explosive mixture with air. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

Hazardous decomposition products in case of fire : Toxic fumes may be released. Carbon dioxide. Carbon monoxide. Nitrogen oxides.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Evacuate the danger area. Move containers from fire area if it can be done without personal risk. Fight fire from safe distance and protected location. Use water spray or fog for cooling exposed containers. Use extinguishing media appropriate for surrounding fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Do not enter fire area without proper protective equipment, including respiratory protection. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges.

For non-emergency personnel

Protective equipment	:	Wear recommended personal protective equipment.
Emergency procedures	:	Evacuate unnecessary personnel. Ventilate spillage area. Avoid breathing vapors. Do not get in eyes, on skin, or on clothing. Avoid contact with skin and eyes. Do not touch or walk on the spilled product. No action shall be taken without appropriate training or involving any personal risk.

For emergency responders

Protective equipment	:	Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	:	Evacuate unnecessary personnel.
Environmental precautions	:	Avoid release to the environment. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Notify authorities if product enters sewers or public waters.

6.2. Methods and materials for containment and cleaning up

For containment	:	Stop leak if safe to do so. Collect spillage. Do not touch or walk on the spilled product.
Methods for cleaning up	:	Caution : this product can cause the floor to be slippery. Move containers from spill area. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. For large spills, confine the spill in a dike and charge it with wet sand or earth for subsequent safe disposal. Do not absorb with saw-dust or any other combustible absorbent material. Place in a suitable container for disposal in accordance with the waste regulations (see Section 13). Clean contaminated surfaces with an excess of water. Prevent entry to sewers and public waters. Never return unused material to original container. Use non-sparking tools.
Other information	:	Dispose of via an authorised person/ licensed waste disposal contractor or by other suitable waste treatment techniques.

For further information refer to section 13,For further information refer to section 8: "Exposure controls/personal protection"

SECTION 7 Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Provide local exhaust or general room ventilation. Avoid breathing vapors. Wear personal protective equipment. Avoid contact with skin and eyes. Avoid contact during pregnancy and while nursing. Avoid release to the environment. Keep only in original container. Empty containers retain product residue and can be hazardous. Do not re-use container for any purpose. Eliminate all ignition sources if safe to do so. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Use approved electrical and mechanical equipment in accordance with respective zone.
Hygiene measures	:	Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Always wash hands after handling the product. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including incompatibilities

Storage conditions	:	Store in dry, cool, well-ventilated area. Keep away from food, drink and animal feed. Keep container closed when not in use. Containers which are opened should be properly resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Store in accordance with local, regional, national or international regulation. Keep away from ignition sources (including static discharges). Proper grounding procedures to avoid static electricity should be followed.

Storage area	:	Store in a well-ventilated place.
Incompatible products	:	Strong oxidizing agents.
Incompatible materials	:	Direct sunlight. Heat sources. Ignition sources.

SECTION 8 Exposure controls/personal protection

8.1. Control parameters

n-hexane (110-54-3)	
USA - ACGIH - Occupational Exposure Limits	
Local name	n-Hexane
ACGIH OEL TWA	50 ppm
Remark (ACGIH)	TLV® Basis: CNS impair; peripheral neuropathy; eye irr. Notations: Skin; BEI
Regulatory reference	ACGIH 2024
USA - ACGIH - Biological Exposure Indices	
Local name	n-Hexane
BEI (BLV)	0.5 mg/l Parameter: 2,5-Hexanedione (without hydrolysis) - Medium: urine - Sampling time: End of shift
Regulatory reference	ACGIH 2024
USA - OSHA - Occupational Exposure Limits	
Local name	n-Hexane
OSHA PEL TWA	1800 mg/m³
	500 ppm
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
USA - Cal/OSHA - Occupational Exposure Limits	
Local name	n-Hexane
Cal/OSHA PEL (OEL TWA)	180 mg/m³
	50 ppm
Remark (Cal/OSHA)	S - Skin notation and Protecting Clothing
Regulatory reference	California Division of Occupational Safety and Health (Cal/OSHA) - Permissible Exposure Limit for Chemical Contaminants (Table AC-1)
USA - NIOSH - Occupational Exposure Limits	
Local name	n-Hexane
NIOSH REL 10h TWA	50 ppm
Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-1 (NIOSH Pocket Guide to Chemical Hazards (NPG))

Isopentane (78-78-4)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Isopentane
ACGIH OEL TWA	1000 ppm
Remark (ACGIH)	TLV® Basis: Narcosis; resp tract irr
Regulatory reference	ACGIH 2024

Toluene (108-88-3)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Toluene
ACGIH OEL TWA	20 ppm
Remark (ACGIH)	TLV® Basis: CNS, visual & hearing impair; female repro system eff; pregnancy loss. Notations: OTO; A4 (Not classifiable as a Human Carcinogen); BEI
Regulatory reference	ACGIH 2024
USA - ACGIH - Biological Exposure Indices	
Local name	Toluene
BEI (BLV)	0.3 mg/g Kreatinin Parameter: o-Cresol (with hydrolysis) - Medium: urine - Sampling time: End of shift - Notations: B 0.03 mg/l Parameter: Toluene - Medium: urine - Sampling time: End of shift 0.02 mg/l Parameter: Toluene - Medium: blood - Sampling time: Prior to last shift of workweek
Regulatory reference	ACGIH 2024
USA - OSHA - Occupational Exposure Limits	
Local name	Toluene
OSHA PEL TWA	200 ppm
OSHA PEL (Ceiling)	300 ppm
Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift	500 ppm 10 mins.
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-2
USA - Cal/OSHA - Occupational Exposure Limits	
Local name	Toluene; toluol
Cal/OSHA PEL (OEL TWA)	37 mg/m³
	10 ppm
Cal/OSHA STEL	560 mg/m³
	150 ppm
Cal/OSHA C	500 ppm
Remark (Cal/OSHA)	S - Skin notation and Protecting Clothing
Regulatory reference	California Division of Occupational Safety and Health (Cal/OSHA) - Permissible Exposure Limit for Chemical Contaminants (Table AC-1)
USA - NIOSH - Occupational Exposure Limits	
Local name	Toluene
NIOSH REL 10h TWA	100 ppm
NIOSH REL (STEL)	150 ppm
Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-2 (NIOSH Pocket Guide to Chemical Hazards (NPG))

1,2,4-trimethylbenzene (95-63-6)	
USA - ACGIH - Occupational Exposure Limits	
Local name	1,2,4-Trimethyl benzene
ACGIH OEL TWA	10 ppm

1,2,4-trimethylbenzene (95-63-6)	
Remark (ACGIH)	TLV® Basis: CNS impair; hematologic eff. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2024

2,2',2''-nitrilotriethanol (102-71-6)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Triethanolamine
ACGIH OEL TWA	5 mg/m³
Remark (ACGIH)	TLV® Basis: Eye & skin irr
Regulatory reference	ACGIH 2024
USA - Cal/OSHA - Occupational Exposure Limits	
Local name	Triethanolamine
Cal/OSHA PEL (OEL TWA)	5 mg/m³
Regulatory reference	California Division of Occupational Safety and Health (Cal/OSHA) - Permissible Exposure Limit for Chemical Contaminants (Table AC-1)

N,N-diethylhydroxylamine (3710-84-7)	
USA - ACGIH - Occupational Exposure Limits	
Local name	N,N-Diethylhydroxylamine
ACGIH OEL TWA	2 ppm
Remark (ACGIH)	TLV® Basis: URT irr
Regulatory reference	ACGIH 2024

Diethyl phthalate (84-66-2)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Diethyl phthalate
ACGIH OEL TWA	5 mg/m³
Remark (ACGIH)	TLV® Basis: URT irr. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2024
USA - Cal/OSHA - Occupational Exposure Limits	
Local name	Diethyl phthalate
Cal/OSHA PEL (OEL TWA)	5 mg/m³
Regulatory reference	California Division of Occupational Safety and Health (Cal/OSHA) - Permissible Exposure Limit for Chemical Contaminants (Table AC-1)

Butyl lactate (138-22-7)	
USA - ACGIH - Occupational Exposure Limits	
Local name	n-Butyl lactate
ACGIH OEL TWA	5 ppm
Remark (ACGIH)	TLV® Basis: Headache; URT irr
Regulatory reference	ACGIH 2024

Butyl lactate (138-22-7)	
USA - Cal/OSHA - Occupational Exposure Limits	
Local name	n-Butyl lactate
Cal/OSHA PEL (OEL TWA)	25 mg/m³
	5 ppm
Regulatory reference	California Division of Occupational Safety and Health (Cal/OSHA) - Permissible Exposure Limit for Chemical Contaminants (Table AC-1)

Cyclopentane (287-92-3)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Cyclopentane
ACGIH OEL TWA	1000 ppm (EX - Explosion hazard)
Remark (ACGIH)	TLV® Basis: CNS impair
Regulatory reference	ACGIH 2024
USA - Cal/OSHA - Occupational Exposure Limits	
Local name	Cyclopentane
Cal/OSHA PEL (OEL TWA)	1720 mg/m³
	600 ppm
Regulatory reference	California Division of Occupational Safety and Health (Cal/OSHA) - Permissible Exposure Limit for Chemical Contaminants (Table AC-1)

2-methylbut-2-ene (513-35-9)	
USA - ACGIH - Occupational Exposure Limits	
Local name	2-Methyl-2-butene
ACGIH OEL TWA	10 ppm
Remark (ACGIH)	TLV® Basis: Clastogenic eff
Regulatory reference	ACGIH 2024

2-ethoxy-2-methylpropane (637-92-3)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Ethyl tert-butyl ether (ETBE)
ACGIH OEL TWA	25 ppm
Remark (ACGIH)	TLV® Basis: URT & LRT irr; CNS impair. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2024
USA - Cal/OSHA - Occupational Exposure Limits	
Local name	Ethyl tert-butyl ether
Cal/OSHA PEL (OEL TWA)	21 mg/m³
	5 ppm
Regulatory reference	California Division of Occupational Safety and Health (Cal/OSHA) - Permissible Exposure Limit for Chemical Contaminants (Table AC-1)

Ethanol (64-17-5)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Ethanol
ACGIH OEL STEL	1000 ppm
Remark (ACGIH)	TLV® Basis: URT irr. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
Regulatory reference	ACGIH 2024
USA - OSHA - Occupational Exposure Limits	
Local name	Ethyl alcohol (Ethanol)
OSHA PEL TWA	1900 mg/m³
	1000 ppm
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
USA - Cal/OSHA - Occupational Exposure Limits	
Local name	Ethyl alcohol; ethanol
Cal/OSHA PEL (OEL TWA)	1900 mg/m³
	1000 ppm
Regulatory reference	California Division of Occupational Safety and Health (Cal/OSHA) - Permissible Exposure Limit for Chemical Contaminants (Table AC-1)
USA - NIOSH - Occupational Exposure Limits	
Local name	Ethyl alcohol (Ethanol)
NIOSH REL 10h TWA	1000 ppm
Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-1 (NIOSH Pocket Guide to Chemical Hazards (NPG))

2-methylpropan-2-ol (75-65-0)	
USA - ACGIH - Occupational Exposure Limits	
Local name	tert-Butanol
ACGIH OEL TWA	100 ppm
Remark (ACGIH)	TLV® Basis: CNS impair. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2024
USA - OSHA - Occupational Exposure Limits	
Local name	tert-Butyl alcohol
OSHA PEL TWA	300 mg/m³
	100 ppm
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
USA - Cal/OSHA - Occupational Exposure Limits	
Local name	tert-Butyl alcohol
Cal/OSHA PEL (OEL TWA)	300 mg/m³
	100 ppm
Cal/OSHA STEL	450 mg/m³

2-methylpropan-2-ol (75-65-0)	
	150 ppm
Regulatory reference	California Division of Occupational Safety and Health (Cal/OSHA) - Permissible Exposure Limit for Chemical Contaminants (Table AC-1)
USA - NIOSH - Occupational Exposure Limits	
Local name	tert-Butyl alcohol
NIOSH REL 10h TWA	100 ppm
NIOSH REL (STEL)	150 ppm
Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-1 (NIOSH Pocket Guide to Chemical Hazards (NPG))

Acetone (67-64-1)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Acetone
ACGIH OEL TWA	250 ppm
ACGIH OEL STEL	500 ppm
Remark (ACGIH)	TLV® Basis: URT & eye irr; CNS impair. Notations: A4 (Not classifiable as a Human Carcinogen); BEI
Regulatory reference	ACGIH 2024
USA - ACGIH - Biological Exposure Indices	
Local name	Acetone
BEI (BLV)	25 mg/l Parameter: Acetone - Medium: urine - Sampling time: End of shift - Notations: Ns
Regulatory reference	ACGIH 2024
USA - OSHA - Occupational Exposure Limits	
Local name	Acetone
OSHA PEL TWA	2400 mg/m³
	1000 ppm
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
USA - Cal/OSHA - Occupational Exposure Limits	
Local name	Acetone [Dimethyl ketone]
Cal/OSHA PEL (OEL TWA)	1200 mg/m³
	500 ppm
Cal/OSHA STEL	1780 mg/m³
	750 ppm
Cal/OSHA C	3000 ppm
Regulatory reference	California Division of Occupational Safety and Health (Cal/OSHA) - Permissible Exposure Limit for Chemical Contaminants (Table AC-1)
USA - NIOSH - Occupational Exposure Limits	
Local name	Acetone
NIOSH REL 10h TWA	250 ppm
Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-1 (NIOSH Pocket Guide to Chemical Hazards (NPG))

2-methylpropene (115-11-7)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Isobutene
ACGIH OEL TWA	250 ppm
Remark (ACGIH)	TLV® Basis: URT irr; body weight eff. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2024

Butanone (78-93-3)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Methyl ethyl ketone (MEK)
ACGIH OEL TWA	75 ppm
ACGIH OEL STEL	150 ppm
Remark (ACGIH)	TLV® Basis: Embryo/fetal dam; URT irr; headache; dizziness. Notations: Skin; BEI
Regulatory reference	ACGIH 2024
USA - ACGIH - Biological Exposure Indices	
Local name	Methyl ethyl ketone
BEI (BLV)	2 mg/l Parameter: Methyl ethyl ketone - Medium: urine - Sampling time: End of shift - Notations: Ns
Regulatory reference	ACGIH 2024
USA - OSHA - Occupational Exposure Limits	
Local name	2-Butanone (Methyl ethyl ketone)
OSHA PEL TWA	590 mg/m³
	200 ppm
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
USA - Cal/OSHA - Occupational Exposure Limits	
Local name	Methyl ethyl ketone; MEK; 2-butanone; ethyl methyl ketone
Cal/OSHA PEL (OEL TWA)	590 mg/m³
	200 ppm
Cal/OSHA STEL	885 mg/m³
	300 ppm
Regulatory reference	California Division of Occupational Safety and Health (Cal/OSHA) - Permissible Exposure Limit for Chemical Contaminants (Table AC-1)
USA - NIOSH - Occupational Exposure Limits	
Local name	2-Butanone (Methyl ethyl ketone(MEK))
NIOSH REL 10h TWA	200 ppm
NIOSH REL (STEL)	300 ppm
Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-1 (NIOSH Pocket Guide to Chemical Hazards (NPG))

Tert-butyl methyl ether (1634-04-4)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Methyl tert-butyl ether
ACGIH OEL TWA	50 ppm
Remark (ACGIH)	TLV® Basis: URT irr; kidney dam. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
Regulatory reference	ACGIH 2024
USA - Cal/OSHA - Occupational Exposure Limits	
Local name	Methyl tert-butyl ether; MTBE
Cal/OSHA PEL (OEL TWA)	144 mg/m³
	40 ppm
Regulatory reference	California Division of Occupational Safety and Health (Cal/OSHA) - Permissible Exposure Limit for Chemical Contaminants (Table AC-1)

2-butoxyethanol (111-76-2)	
USA - ACGIH - Occupational Exposure Limits	
Local name	2-Butoxyethanol (EGBE)
ACGIH OEL TWA	20 ppm
Remark (ACGIH)	TLV® Basis: Eye & URT irr. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); BEI
Regulatory reference	ACGIH 2024
USA - ACGIH - Biological Exposure Indices	
Local name	2-Butoxyethanol
BEI (BLV)	200 mg/g Kreatinin Parameter: Butoxyacetic acid (BAA) (with hydrolysis) - Medium: urine - Sampling time: End of shift
Regulatory reference	ACGIH 2024
USA - OSHA - Occupational Exposure Limits	
Local name	2-Butoxyethanol
OSHA PEL TWA	240 mg/m³
	50 ppm
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
USA - Cal/OSHA - Occupational Exposure Limits	
Local name	2-Butoxyethanol (EGBE) [Glycol monobutyl ether]
Cal/OSHA PEL (OEL TWA)	97 mg/m³
	20 ppm
Remark (Cal/OSHA)	S - Skin notation and Protecting Clothing
Regulatory reference	California Division of Occupational Safety and Health (Cal/OSHA) - Permissible Exposure Limit for Chemical Contaminants (Table AC-1)
USA - NIOSH - Occupational Exposure Limits	
Local name	2-Butoxyethanol
NIOSH REL 10h TWA	5 ppm

2-butoxyethanol (111-76-2)	
Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-1 (NIOSH Pocket Guide to Chemical Hazards (NPG))
Monitoring methods	
Monitoring methods	Refer to all applicable national, international and local regulations or provisions.

8.2. Appropriate engineering controls

Appropriate engineering controls : Handle in accordance with good industrial hygiene and safety procedures. Provide local exhaust or general room ventilation. Avoid all unnecessary exposure. Ensure exposure is below occupational exposure limits (where available). Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Environmental exposure controls : Avoid release to the environment. Prevent entry to sewers and public waters. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil.

8.3. Individual protection measures, such as personal protective equipment

Personal protective equipment:
Wear recommended personal protective equipment. Personal protective equipment should be chosen according to the NIOSH standards and in discussion with the supplier of the protective equipment.

Hand protection:
Chemical resistant gloves (according to NIOSH standard). Please follow the instructions related to the permeability and the penetration time provided by the manufacturer. Since the product consists of several substances, the durability of the glove material cannot be estimated and needs to be tested before use

Eye protection:
Chemical goggles or safety glasses

Skin and body protection:
Skin protection appropriate to the conditions of use should be provided

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment. An approved organic vapor respirator/supplied air or self-contained breathing apparatus must be used when vapor concentration exceeds applicable exposure limits. All respirators must conform to specifications for efficiency and performance indicated by OSHA Standard 29 CFR 1910.134 and NIOSH Standards

SECTION 9 Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state	:	Liquid
Color	:	According to product specification
Odor	:	Hydrocarbon-like
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	:	< 23 °C (< 73 °F)
Flammability (solid, gas)	:	No data available
Vapor pressure	:	No data available
Relative vapor density at 20°C	:	No data available
Relative density	:	No data available
Solubility	:	No data available
Partition coefficient n-octanol/water (Log Pow)	:	No data available

Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	< 20.5 mm²/s
Explosion limits	:	No data available
Particle characteristics	:	No data available

9.2. Data relevant with regard to physical hazard classes (supplemental)

No additional information available

SECTION 10 Stability and reactivity

10.1. Reactivity

Highly flammable liquid and vapor. Vapours can form explosive mixtures with air. Heating may cause a fire or explosion.

10.2. Chemical stability

Stable under normal conditions of use.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Hazardous polymerization: Will not occur.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Protect from sunlight. Overheating. Heat and ignition sources. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5. Incompatible materials

Oxidizing agent.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11 Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Not classified
Acute toxicity (dermal)	:	Not classified
Acute toxicity (inhalation)	:	Not classified

Toluene (108-88-3)	
LD50 oral rat	2600 – 2750 mg/kg
LD50 dermal rabbit	≥ 12124 mg/kg
LC50 Inhalation - Rat [ppm]	8000 ppm/4h

1,2,4-trimethylbenzene (95-63-6)	
LD50 oral rat	5000 mg/kg
LD50 dermal rabbit	3160 mg/kg
LC50 Inhalation - Rat	18000 mg/m³ (4 h)
ATE US (oral)	5000 mg/kg body weight
ATE US (dermal)	3160 mg/kg body weight

1,2,4-trimethylbenzene (95-63-6)	
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	18 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

N,N-diethylhydroxylamine (3710-84-7)	
LD50 oral rat	2190 mg/kg
LD50 oral	2190 mg/kg
LD50 dermal rabbit	1300 mg/kg
LD50 dermal	1300 mg/kg
LC50 Inhalation - Rat	11.4 mg/l/4h
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

Diethyl phthalate (84-66-2)	
LD50 oral rat	9500 – 31000 mg/kg
LD50 dermal rat	> 22400 mg/kg
LC50 Inhalation - Rat	> 4.64 mg/l (6 h)

2-methylbut-2-ene (513-35-9)	
ATE US (oral)	500 mg/kg body weight

2-ethoxy-2-methylpropane (637-92-3)	
LD50 oral rat	> 2003 mg/kg (OECD 401)
LD50 dermal rabbit	> 2000 mg/kg
LC50 Inhalation - Rat	> 5.88 mg/l/4h

Ethanol (64-17-5)	
LD50 oral rat	> 7692 mg/kg
LD50 dermal rabbit	> 15800 mg/kg
LC50 Inhalation - Rat	124.7 mg/l/4h

2-methylpropan-2-ol (75-65-0)	
LD50 oral rat	3046 mg/kg
LD50 dermal rabbit	> 5000 mg/kg
LC50 Inhalation - Rat	36 mg/l/4h
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

Acetone (67-64-1)	
LD50 oral rat	5800 mg/kg

Acetone (67-64-1)	
LD50 dermal rabbit	> 7426 mg/kg (guinea pig)
LC50 Inhalation - Rat [ppm]	32000 ppm (4 h)

2-methylpropene (115-11-7)	
LC50 Inhalation - Rat [ppm]	270000 ppm

Tert-butyl methyl ether (1634-04-4)	
LD50 oral rat	4000 mg/kg
LD50 oral	2963 mg/kg
LD50 dermal	10000 mg/kg
LC50 Inhalation - Rat [ppm]	23576 ppm/4h
LC50 Inhalation - Rat (Vapors)	85 mg/l/4h

2-butoxyethanol (111-76-2)	
LD50 oral rat	1200 mg/kg
LC50 Inhalation - Rat (Vapors)	3 mg/l/4h
ATE US (oral)	500 mg/kg body weight
ATE US (dermal)	1100 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 : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : May cause genetic defects.
Carcinogenicity : May cause cancer.

Toluene (108-88-3)	
IARC group	3 - Not classifiable

2,2',2''-nitrilotriethanol (102-71-6)	
IARC group	3 - Not classifiable

Ethanol (64-17-5)	
IARC group	1 - Carcinogenic to humans

Tert-butyl methyl ether (1634-04-4)	
IARC group	3 - Not classifiable

2-butoxyethanol (111-76-2)	
IARC group	3 - Not classifiable

Reproductive toxicity : Suspected of damaging fertility or the unborn child.
STOT-single exposure : May cause drowsiness or dizziness.
STOT-repeated exposure : May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard : May be fatal if swallowed and enters airways.

T4+	
Viscosity, kinematic	< 20.5 mm²/s

Symptoms/effects after inhalation : May cause drowsiness or dizziness. At high concentrations, the vapors can be irritating to the respiratory system.

Symptoms/effects after skin contact : Causes skin irritation. Redness. Itching. Swelling.

Symptoms/effects after eye contact : Causes serious eye irritation. Redness. Itching. Lacrimation. Blurred vision.

Symptoms/effects after ingestion : May be fatal if swallowed and enters airways. Aspiration of the product into the lungs may cause very serious pneumonia. Ingestion may cause nausea, vomiting and diarrhea. Abdominal pain.

Chronic symptoms : May cause genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure.

Other information : No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation.

SECTION 12 Ecological information

12.1. Ecotoxicity

Hazardous to the aquatic environment, short–term (acute) : Harmful to aquatic life

Hazardous to the aquatic environment, long–term (chronic) : Harmful to aquatic life with long lasting effects

Toluene (108-88-3)	
LC50 - Fish [1]	8.48 mg/l (96 h)
EC50 - Crustacea [1]	9.83 mg/l (48 h)

N,N-diethylhydroxylamine (3710-84-7)	
LC50 - Fish [1]	> 196 mg/l (96 h, Poecilia reticulata)
EC50 - Crustacea [1]	110.56 mg/l
EC50 72h - Algae [1]	26 mg/l (72 h, Selenastrum capricornutum)

Diethyl phthalate (84-66-2)	
LC50 - Fish [1]	12 mg/l (96 h, Oncorhynchus mykiss)
EC50 - Crustacea [1]	86 mg/l (48 h, Daphnia magna)

2-ethoxy-2-methylpropane (637-92-3)	
LC50 - Fish [1]	> 974 mg/l (96 h, Poecilia reticulata)
EC50 - Crustacea [1]	110 mg/l (48 h, Daphnia magna)
LC50 - Fish [2]	574 (96 h, Menidia beryllina)
EC50 - Crustacea [2]	37 mg/l (96 h, Americamysis bahia)
EC50 72h - Algae [1]	1100 mg/l (72 h, Pseudokirchneriella subcapitata)
NOEC chronic fish	64 mg/l (5 d, Danio rerio)
NOEC chronic crustacea	51 mg/l (21 d, Daphnia magna)
NOEC chronic algae	7.5 mg/l (72 h, Pseudokirchneriella subcapitata)

Ethanol (64-17-5)	
LC50 - Fish [1]	11200 mg/l (24 h, Oncorhynchus mykiss)
EC50 - Crustacea [1]	5012 mg/l (48 h, Ceriodaphnia dubia):)

Ethanol (64-17-5)	
EC50 72h - Algae [1]	275 mg/l (72 h, Chlorella vulgaris)
NOEC chronic fish	250 mg/l (120 h, Danio rerio)
NOEC chronic crustacea	9.6 mg/l (10 d, Ceriodaphnia dubia)
NOEC chronic algae	6500 mg/l (16 h, Pseudomonas putida)

2-methylpropan-2-ol (75-65-0)	
LC50 - Fish [1]	> 961 mg/l (96 h, Pimephales promelas)
EC50 - Crustacea [1]	933 mg/l (48 h, Daphnia magna)
EC50 72h - Algae [1]	976 mg/l (72 h, Pseudokirchneriella subcapitata)
NOEC chronic fish	332 mg/l (4 d, Clarias gariepinus)
NOEC chronic crustacea	100 mg/l (21 d, Daphnia magna)
NOEC chronic algae	10000 mg/l (48 h, Pseudomonas putida)

Acetone (67-64-1)	
LC50 - Fish [1]	5540 mg/l (96 h, Oncorhynchus mykiss)
EC50 - Crustacea [1]	12600 – 12700 mg/l (48 h, Daphnia magna)
EC50 - Other aquatic organisms [1]	14500 mg/l (15 min., Photobacterium phosphoreum)
LC50 - Fish [2]	8300 mg/l (96 h, Lepomis macrochirus)
EC50 72h - Algae [1]	3020 mg/l (14 d, Chlorella pyrenoidosa)

Tert-butyl methyl ether (1634-04-4)	
LC50 - Fish [1]	672 mg/l (96 h)
NOEC chronic crustacea	11 mg/l

12.2. Persistence and degradability

T4+	
Persistence and degradability	Biodegradability in water: no data available.

N,N-diethylhydroxylamine (3710-84-7)	
Persistence and degradability	Not rapidly degradable
Biodegradation	11 % (28 d)

2-ethoxy-2-methylpropane (637-92-3)	
Persistence and degradability	Not rapidly degradable
Biodegradation	6.6 %

Ethanol (64-17-5)	
Persistence and degradability	Rapidly degradable
Biodegradation	74 %

2-methylpropan-2-ol (75-65-0)	
Persistence and degradability	Rapidly degradable
Biodegradation	66 %

Acetone (67-64-1)	
Persistence and degradability	Rapidly degradable
Biodegradation	78 % (OECD 301D)

12.3. Bioaccumulative potential

T4+	
Bioaccumulative potential	No data available concerning bioaccumulation.

Diethyl phthalate (84-66-2)	
Partition coefficient n-octanol/water (Log Kow)	≥ 2.47

2-ethoxy-2-methylpropane (637-92-3)	
Partition coefficient n-octanol/water (Log Pow)	1.48 (25 °C)

Ethanol (64-17-5)	
Partition coefficient n-octanol/water (Log Pow)	-0.35 (pH=7.4; 24 °C)

12.4. Mobility in soil

T4+	
Ecology - soil	No additional information available.

N,N-diethylhydroxylamine (3710-84-7)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	43.47

12.5. Other adverse effects

Ozone : Not classified
Other adverse effects : No other effects known.
Fluorinated greenhouse gases : No

SECTION 13 Disposal considerations

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Empty containers retain product residue and can be hazardous.
Additional information : Do not re-use empty containers. Flammable vapors may accumulate in the container. Do not puncture or incinerate, even when empty.
Ecological waste information : Avoid release to the environment.

SECTION 14 Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number

UN-No. (DOT) : UN1203
UN-No. (TDG) : UN1203
UN-No. (IMDG) : 1203
UN-No. (IATA) : 1203

14.2. UN Proper Shipping Name

Proper Shipping Name (DOT) : Gasoline
Proper Shipping Name (TDG) : GASOLINE
Proper Shipping Name (IMDG) : GASOLINE
Proper Shipping Name (IATA) : Gasoline

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : 3
Hazard labels (DOT) : 3

TDG

Transport hazard class(es) (TDG) : 3
Hazard labels (TDG) : 3

IMDG

Transport hazard class(es) (IMDG) : 3
Hazard labels (IMDG) : 3

IATA

Transport hazard class(es) (IATA) : 3
Hazard labels (IATA) : 3

14.4. Packing group

Packing group (DOT) : II
Packing group (TDG) : II
Packing group (IMDG) : II
Packing group (IATA) : II

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Transport in bulk

Not applicable

14.7. Special precautions for user

DOT

UN-No. (DOT)	:	UN1203
DOT Special Provisions (49 CFR 172.102)	:	144 - If transported as a residue in an underground storage tank (UST), as defined in 40 CFR 280.12, that has been cleaned and purged or rendered inert according to the American Petroleum Institute (API) Standard 1604 (IBR, see 171.7 of this subchapter), then the tank and this material are not subject to any other requirements of this subchapter. However, sediments remaining in the tank that meet the definition for a hazardous material are subject to the applicable regulations of this subchapter. 177 - Gasoline, or, ethanol and gasoline mixtures, for use in internal combustion engines (e.g, in automobiles, stationary engines and other engines) must be assigned to Packing Group II regardless of variations in volatility. B1 - If the material has a flash point at or above 38 C (100 F) and below 93 C (200 F), then the bulk packaging requirements of 173.241 of this subchapter are applicable. If the material has a flash point of less than 38 C (100 F), then the bulk packaging requirements of 173.242 of this subchapter are applicable. B33 - MC 300, MC 301, MC 302, MC 303, MC 305, MC 306, and DOT 406 cargo tanks equipped with a 1 psig normal vent used to transport gasoline must conform to Table I of this Special Provision. Based on the volatility class determined by using ASTM D 439 and the Reid vapor pressure (RVP) of the particular gasoline, the maximum lading pressure and maximum ambient temperature permitted during the loading of gasoline may not exceed that listed in Table I. 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. T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)
DOT Packaging Exceptions (49 CFR 173.xxx)	:	150
DOT Packaging Non Bulk (49 CFR 173.xxx)	:	202
DOT Packaging Bulk (49 CFR 173.xxx)	:	242
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	60 L
DOT Vessel Stowage Location	:	E - 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, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded.

TDG

UN-No. (TDG)	:	UN1203
TDG Special Provisions	:	17 - These dangerous goods may be handled, offered for transport or transported under the UN number and shipping name UN1268, PETROLEUM DISTILLATES, N.O.S, PETROLEUM PRODUCTS N.O.S, DISTILLATS DE PÉTROLE, N.S.A. or PRODUITS PÉTROLIERS, N.S.A,88 - Despite the quantity limits in column 9 of Schedule 1 for these dangerous goods, a road vehicle is not a passenger carrying road vehicle unless the passengers in it are transported for hire or reward,98 - If these dangerous goods are composed of more than 10% ethanol, they must be transported under UN3475, ETHANOL AND gASOLINE MIXTURE,150 - An approved ERAP is required for the dangerous goods referred to in paragraph 7.2(1)(f) of Part 7 (Emergency Response Assistance Plan).
Explosive Limit and Limited Quantity Index	:	30 L
Excepted quantities (TDG)	:	E2
Passenger Carrying Vessel Index	:	100 L
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index	:	5 L
Emergency Response Guide (ERG) Number	:	128

IMDG

Special provision (IMDG)	:	243
Limited quantities (IMDG)	:	1 L

Excepted quantities (IMDG)	:	E2
Packing instructions (IMDG)	:	P001
IBC packing instructions (IMDG)	:	IBC02
Tank instructions (IMDG)	:	T4
Tank special provisions (IMDG)	:	TP1
EmS-No. (Fire)	:	F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS
EmS-No. (Spillage)	:	S-E - SPILLAGE SCHEDULE Echo - FLAMMABLE LIQUIDS, FLOATING ON WATER
Stowage category (IMDG)	:	E
Properties and observations (IMDG)	:	Immiscible with water.

IATA

Special provision (IATA)	:	A100
PCA Excepted quantities (IATA)	:	E2
PCA Limited quantities (IATA)	:	Y341
PCA limited quantity max net quantity (IATA)	:	1L
PCA packing instructions (IATA)	:	353
PCA max net quantity (IATA)	:	5L
CAO packing instructions (IATA)	:	364
CAO max net quantity (IATA)	:	60L
ERG code (IATA)	:	3H

SECTION 15 Regulatory information

15.1. Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.		
n-hexane	CAS-No. 110-54-3	0.1 - 1%
Toluene	CAS-No. 108-88-3	10 - 30%
1,2,4-trimethylbenzene	CAS-No. 95-63-6	< 0.1%
2-methylpropan-2-ol	CAS-No. 75-65-0	1 - 5%
Tert-butyl methyl ether	CAS-No. 1634-04-4	0.1 - 1%

n-hexane (110-54-3)

Listed on EPA Hazardous Air Pollutant (HAPS)
Listed on EPA HAPs Acute Dose Response Assessment List – Exposure limits

CERCLA RQ	5000 lb

Toluene (108-88-3)

Listed on EPA Hazardous Air Pollutant (HAPS)
Listed on EPA HAPs Chronic Dose Response Assessment List - Carcinogens
Listed on EPA HAPs Acute Dose Response Assessment List – Exposure limits

CERCLA RQ	1000 lb

Diethyl phthalate (84-66-2)

CERCLA RQ	1000 lb

Acetone (67-64-1)	
CERCLA RQ	5000 lb

Butanone (78-93-3)	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	5000 lb

Tert-butyl methyl ether (1634-04-4)	
Listed on EPA Hazardous Air Pollutant (HAPS) Listed on EPA HAPs Chronic Dose Response Assessment List - Carcinogens Listed on EPA HAPs Acute Dose Response Assessment List – Exposure limits	
CERCLA RQ	1000 lb

15.2. International regulations

CANADA

n-hexane (110-54-3)
Listed on the Canadian DSL (Domestic Substances List)

Naphtha (petroleum), full-range alkylate (64741-64-6)
Listed on the Canadian DSL (Domestic Substances List)

Isopentane (78-78-4)
Listed on the Canadian DSL (Domestic Substances List)

Toluene (108-88-3)
Listed on the Canadian DSL (Domestic Substances List)

1,2,4-trimethylbenzene (95-63-6)
Listed on the Canadian DSL (Domestic Substances List)

2,2',2''-nitrilotriethanol (102-71-6)
Listed on the Canadian DSL (Domestic Substances List)

N,N-diethylhydroxylamine (3710-84-7)
Listed on the Canadian DSL (Domestic Substances List)

Diethyl phthalate (84-66-2)
Listed on the Canadian DSL (Domestic Substances List)

Butyl lactate (138-22-7)
Listed on the Canadian DSL (Domestic Substances List)

Cyclopentane (287-92-3)

Listed on the Canadian DSL (Domestic Substances List)

2-methylbut-2-ene (513-35-9)

Listed on the Canadian DSL (Domestic Substances List)

2-methylbut-1-ene (563-46-2)

Listed on the Canadian DSL (Domestic Substances List)

2-ethoxy-2-methylpropane (637-92-3)

Listed on the Canadian NDSL (Non-Domestic Substances List)

Ethanol (64-17-5)

Listed on the Canadian DSL (Domestic Substances List)

2-methylpropan-2-ol (75-65-0)

Listed on the Canadian DSL (Domestic Substances List)

Acetone (67-64-1)

Listed on the Canadian DSL (Domestic Substances List)

2-methylpropene (115-11-7)

Listed on the Canadian DSL (Domestic Substances List)

Butanone (78-93-3)

Listed on the Canadian DSL (Domestic Substances List)

Tert-butyl methyl ether (1634-04-4)

Listed on the Canadian DSL (Domestic Substances List)

2-butoxyethanol (111-76-2)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

n-hexane (110-54-3)

Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on EPA HAPs Acute Dose Response Assessment List – Exposure limits

Isopentane (78-78-4)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Toluene (108-88-3)

Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on EPA HAPs Chronic Dose Response Assessment List - Carcinogens
Listed on EPA HAPs Acute Dose Response Assessment List – Exposure limits

1,2,4-trimethylbenzene (95-63-6)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

2,2',2''-nitrilotriethanol (102-71-6)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

N,N-diethylhydroxylamine (3710-84-7)

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Diethyl phthalate (84-66-2)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Butyl lactate (138-22-7)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Cyclopentane (287-92-3)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

2-methylbut-2-ene (513-35-9)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

2-methylbut-1-ene (563-46-2)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Ethanol (64-17-5)

Listed on IARC (International Agency for Research on Cancer)
Listed on INSQ (Mexican National Inventory of Chemical Substances)

2-methylpropan-2-ol (75-65-0)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Acetone (67-64-1)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

2-methylpropene (115-11-7)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Butanone (78-93-3)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Tert-butyl methyl ether (1634-04-4)

Listed on EPA HAPs Chronic Dose Response Assessment List - Carcinogens
Listed on EPA HAPs Acute Dose Response Assessment List – Exposure limits
Listed on INSQ (Mexican National Inventory of Chemical Substances)

2-butoxyethanol (111-76-2)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. State regulations

WARNING: This product can expose you to n-Hexane, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

SECTION 16 Other information

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

Issue date : 2/13/2025
Data sources : Supplier's safety documents. ECHA (European Chemicals Agency).
Training advice : Training staff on good practice.

Full text of hazard classes and H-statements	
H220	Extremely flammable gas
H224	Extremely flammable liquid and vapor
H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
H227	Combustible liquid
H280	Contains gas under pressure; may explode if heated
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H312	Harmful in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H320	Causes eye irritation
H331	Toxic if inhaled
H332	Harmful if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H340	May cause genetic defects.
H341	Suspected of causing genetic defects.
H350	May cause cancer.

Full text of hazard classes and H-statements	
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child
H371	May cause damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure
H402	Harmful to aquatic life
H411	Toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

Abbreviations and acronyms	
ACGIH	American Conference of Government Industrial Hygienists
AIHA	American International Health Alliance
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CAS-No.	Chemical Abstract Service number
DOT	Department of Transport
DSL	Canada DSL
EC50	Median effective concentration
EC-No.	European Community number
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
N.O.S.	Not Otherwise Specified
NDSL	Canada NDSL
NIOSH	National Institute for Occupational Safety and Health
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OEL	Occupational Exposure Limit
OSHA	Occupational Safety Health Administration
PPE	Personal protection equipment
SDS	Safety Data Sheet

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.