SAFETY DATA SHEET

According to Safe Work Australia Code of Practice on Preparation of Safety Data Sheets for Hazardous Chemicals

ELF CORE 50

HAZARDOUS / DANGEROUS GOODS **SDS # :** A04775

Section 1. Identification

Product identifier : ELF CORE 50

Relevant identified uses of the substance or mixture and uses advised against

Identified uses
Racing fuel for use in Motorsports

Uses advised against	**Reason**
Not applicable.	

Supplier's details :

TotalEnergies Additives and Fuels Solutions
Place du Bassin
69700 Givors
Tel: +33 (0) 4 72 49 27 00
rm.acs-fds@totalenergies.com

TotalEnergies Marketing Asia-Pacific Middle East Pte. Ltd.
182 Cecil Street
#27-01 Frasers Tower
Singapore 069547
Tel: +65 6879 2200
ms.ap-sds@totalenergies.com

Emergency telephone number (with hours of operation) :

Australia: +61 2 8014 4558
Asia-Pacific: +65 3158 1074
The Poisons helpline number: 131126

Section 2. Hazard(s) identification

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 2
SKIN CORROSION/IRRITATION - Category 2
GERM CELL MUTAGENICITY - Category 1B
CARCINOGENICITY - Category 1B
TOXIC TO REPRODUCTION - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ASPIRATION HAZARD - Category 1

GHS label elements

Hazard pictograms :

Signal word : **DANGER**

Hazard statements : **H225 - Highly flammable liquid and vapor.**
H304 - May be fatal if swallowed and enters airways.
H315 - Causes skin 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.

Precautionary statements

General : If medical advice is needed, have product container or label at hand. Keep out of reach of children.

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Ground and bond container and receiving equipment. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Wash thoroughly after handling. Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection.

Response : IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice or attention.

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

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Section 3. Composition and ingredient information

Substance/mixture : Mixture

Product/substance	% (w/w)	Identifiers
toluene	≥30 - ≤60	CAS: 108-88-3 EC: 203-625-9
Naphtha (petroleum), full-range alkylate, butane-contg.	≥10 - ≤30	CAS: 68527-27-5 EC: 271-267-0
Hydrocarbons, C4-6, dependanizer lights, arom. hydrotreater	≥10 - ≤30	CAS: 68476-55-1 EC: 295-298-4
ethanol	<10	CAS: 64-17-5 EC: 200-578-6
2-ethoxy-2-methylpropane	≤10	CAS: 637-92-3 EC: 211-309-7
hex-1-ene	≤10	CAS: 592-41-6 EC: 209-753-1
hydrocarbons, C6, isoalkanes, <5% n-hexane	≤5	CAS: 64742-49-0 EC: 931-254-9

Reportable hazardous constituent(s) contained in UVCB and/or multi-constituent substance(s) complying with the classification criteria and/or with an exposure limit (OEL)

Product/substance	% (w/w)	CAS number
pentane	2.5 - 5	109-66-0
isopentane	2.5 - 5	78-78-4
2,4,4-trimethylpentene	1 - 2.5	25167-70-8
n-hexane	0.1 - 1	110-54-3
benzene	0.1 - 1	71-43-2
tert-butyl methyl ether	0.1 - 1	1634-04-4

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that vapors are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Aspiration hazard if swallowed. Can enter lungs and cause damage. 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. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact : Causes skin irritation.

Ingestion : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations
breathing difficulty or shortness of breath
chemical pneumonitis

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

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Highly flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

Hazardous thermal decomposition products : Carbon dioxide (CO_2).
carbon monoxide.

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : 3YE

Remark : Not considered explosive based on chemical structure and oxygen balance considerations

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Ground and bond container and receiving equipment. See Section 10 for incompatible materials before handling or use.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Ground and bond container and receiving equipment.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
toluene	**Safe Work Australia (Australia, 1/2024)** Absorbed through skin. STEL 15 minutes: 574 mg/m³. STEL 15 minutes: 150 ppm. TWA 8 hours: 191 mg/m³. TWA 8 hours: 50 ppm.
ethanol	**Safe Work Australia (Australia, 1/2024)** TWA 8 hours: 1880 mg/m³. TWA 8 hours: 1000 ppm.

2-ethoxy-2-methylpropane	**ACGIH TLV (United States, 1/2024)** A4. TWA 8 hours: 25 ppm.
hex-1-ene	**ACGIH TLV (United States, 1/2024)** TWA 8 hours: 50 ppm.
hydrocarbons, C6, isoalkanes, <5% n-hexane	**Safe Work Australia (Australia, 1/2024) [Hexane, other isomers]** STEL 15 minutes: 3500 mg/m³. STEL 15 minutes: 1000 ppm. TWA 8 hours: 1760 mg/m³. TWA 8 hours: 500 ppm.

Reportable hazardous constituent(s) contained in UVCB and/or multi-constituent substance(s) complying with the classification criteria and/or with an exposure limit (OEL)

Ingredient name	Exposure limits
pentane	**Safe Work Australia (Australia, 1/2024)** STEL 15 minutes: 2210 mg/m³. STEL 15 minutes: 750 ppm. TWA 8 hours: 1770 mg/m³. TWA 8 hours: 600 ppm.
isopentane	**ACGIH TLV (United States, 1/2024) [Pentane]** TWA 8 hours: 1000 ppm.
n-hexane	**Safe Work Australia (Australia, 1/2024)** TWA 8 hours: 72 mg/m³. TWA 8 hours: 20 ppm.
benzene	**Safe Work Australia (Australia, 1/2024)** Carc. 1A. TWA 8 hours: 3.2 mg/m³. TWA 8 hours: 1 ppm.
tert-butyl methyl ether	**Safe Work Australia (Australia, 1/2024)** TWA 8 hours: 25 ppm. TWA 8 hours: 92 mg/m³. STEL 15 minutes: 75 ppm. STEL 15 minutes: 275 mg/m³.

Biological exposure indices

No exposure indices known.

Advisory OEL : US (ACGIH) and France (ANSES): urinary 2,5-Hexanedione (without hydrolysis) = 0.5 mg/L at the end of the shift
Germany (TRGS 903): 2,5-Hexanedione + 4,5-Dihydroxy-2-hexanone urinary (after hydrolysis) = 5 mg/L at the end of the shift, after several shifts
Finland (FIOH): total urinary 2,5-Hexanedione (with acid hydrolysis) = 2 mmol / mol of creatinine (i.e. 2 mg/g of creatinine) at the end of the shift and at the end of the week

EU (SCOEL/RAC): S-Phenylmercapturic acid urinary = 2 µg/g creatinine at the end of the shift - Blood benzene = 28 µg/L immediately at the end of the shift - Urinary benzene = 0.7 µg/L at the end of the shift.
US (ACGIH): S-Phenylmercapturic acid urinary =25 µg/g creatinine at the end of the shift - Trans Acid, Trans Muconic urinary = 500 µg/g creatinine at the end of the shift
Finland (FIOH) S-Phénylmercapturic acid urinary = 4 µg/g creatinine at the end of the shift

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Hydrocarbon-proof gloves for aromatic hydrocarbons.
Repeated or prolonged exposure
Gloves made of PVA (polyvinyl alcohol) are not water-resistant, and are not suitable for emergency use
Glove material: Nitrile rubber; Glove thickness > 0.5 mm; Break through time > 480 min.
Glove material: Fluorinated rubber; any thickness; Break through time > 480 min.
Glove material: polyvinyl alcohol (PVA); any thickness; Break through time > 480 min.
In case of contact through splashing
Glove material: Nitrile rubber; Glove thickness > 0.3 mm; Break through time > 60 min.

Body protection : IF exposed: Chemical-resistant protective suit.
Antistatic non-skid safety shoes or boots.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
When using a mask or half mask : Respirator with a vapor filter (EN 14387), Type AX (Boiling point <65°C).
The use of breathing apparatus must comply strictly with the manufacturer's instructions and the regulations governing their choices and uses.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature (20°C / 68°F) and pressure (1013 hPa) unless otherwise indicated

Appearance

Physical state : Liquid.

Color : Colorless.

Odor : Petroleum distillates

Odor threshold : Not available.

pH : Not applicable.

Melting point/freezing point : Not applicable.

Boiling point : 37 to 140°C (98.6 to 284°F) [ISO 3405]

Flash point : Closed cup: <-30°C (<-22°F) [ISO 13736]

Flammability (solid, gas) : Flammable

Lower and upper explosion limit/flammability limit : Lower: 1% [ASTM E 681]
Upper: 19% [ASTM E 681]

Vapor pressure : <110 kPa (<825.07 mm Hg) [50°C]

Vapor pressure 37.8°C (100°F) : 560 hPa

Vapor density : >1 [Air = 1] [calculated.]

Relative density : 0.748 [ISO 12185]

Density : 0.748 g/cm³ [15°C] [ISO 12185]

Solubility(ies) :

Media	Result
water	Not soluble

Miscible with water : No.

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : >230°C (>446°F) [ASTM E 659]

Decomposition temperature : Not applicable.

Viscosity : Dynamic (room temperature): Not available.
Kinematic (room temperature): Not available.
Kinematic (40°C (104°F)): <1 mm^2/s (<1 cSt) [ISO 3104]

Flow time (ISO 2431) :

Particle characteristics

Median particle size : Not applicable.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : Stable under recommended storage and handling conditions (see Section 7).

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.

Incompatible materials : Reactive or incompatible with the following materials:
oxidizing materials
Strong oxidizing agents
Strong bases

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

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/substance	Result
toluene	**Rat - Male - Oral - LD50** >5000 mg/kg EU [Acute Toxicity (Oral)] **Rabbit - Male - Dermal - LD50** 12267 mg/kg **Rat - Male, Female - Inhalation - LC50 Vapor** 25.7 mg/l [4 hours] OECD [403]
Naphtha (petroleum), full-range alkylate, butane-contg.	**Rat - Oral - LD50** >5000 mg/kg OECD [401] **Rabbit - Dermal - LD50** >2000 mg/kg OECD [402] **Rat - Inhalation - LC50 Vapor** >5610 mg/m³ [4 hours] OECD [403]
Hydrocarbons, C4-6, dependanizer lights, arom. hydrotreater	**Rat - Oral - LD50** >5000 mg/kg OECD [401] **Rabbit - Dermal - LD50** >2000 mg/kg OECD [402] **Rat - Inhalation - LC50 Vapor** >5610 mg/m³ [4 hours] OECD [403]
ethanol	**Rat - Oral - LD50** 8200 mg/kg OECD [401] **Rabbit - Dermal - LD50** 17100 mg/kg **Rat - Inhalation - LC50 Vapor** 124700 mg/m³ [4 hours] OECD [403] **Mouse - Inhalation - LC50 Vapor** 114 mg/l [1 hours] OECD [403]
2-ethoxy-2-methylpropane	**Rat - Oral - LD50** >2003 mg/kg OECD [401] **Rabbit - Dermal - LD50** >2000 mg/kg OECD [402] **Rat - Inhalation - LC50 Vapor** >5.88 mg/l [4 hours] OECD [403]
hex-1-ene	**Rat - Oral - LD50** >5600 mg/kg OECD [420]

	Rabbit - Dermal - LD50 >2000 mg/kg OECD [402] **Rat - Inhalation - LC50 Gas.** 32000 ppm [4 hours] Toxic effects: Behavioral - General anesthetic Behavioral - Somnolence (general depressed activity) Lung, Thorax, or Respiration - Other changes **Rat - Inhalation - LC50 Vapor** 110 mg/l [4 hours] OECD [403] **Rat - Inhalation - LC50 Vapor** 32000 ppm [4 hours] OECD [403] **Rat - Male - Inhalation - LC50 Vapor** 8050 ppm [4 hours] OECD [403]
hydrocarbons, C6, isoalkanes, <5% n-hexane	**Rabbit - Dermal - LD50** >3350 mg/kg OECD [402] **Rat - Oral - LD50** >16751 mg/kg OECD [401] **Rat - Inhalation - LC50 Vapor** 259354 mg/m³ [4 hours] OECD [403]

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
ELF CORE 50					

Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Based on available data, the classification criteria are met.

Serious eye damage/eye irritation

Based on available data, the classification criteria are not met.

Respiratory corrosion/irritation

Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Skin

Based on available data, the classification criteria are not met.

Respiratory

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Based on available data, the classification criteria are met.

Carcinogenicity

Based on available data, the classification criteria are met.

Reproductive toxicity

Based on available data, the classification criteria are met.

Specific target organ toxicity (single exposure)

Product/substance	Result
toluene	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
Naphtha (petroleum), full-range alkylate, butane-contg.	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
Hydrocarbons, C4-6, depentanizer lights, arom. hydrotreater	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
2-ethoxy-2-methylpropane	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
hex-1-ene	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
hydrocarbons, C6, isoalkanes, <5% n-hexane	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

Based on available data, the classification criteria are met.

Specific target organ toxicity (repeated exposure)

Product/substance	Result
toluene	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

Based on available data, the classification criteria are met.

Aspiration hazard

Based on available data, the classification criteria are met.

Information on the likely routes of exposure

Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact : Causes skin irritation.

Ingestion : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Chemical pneumonitis.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations
breathing difficulty or shortness of breath

Delayed and immediate effects and also chronic effects from short and long term exposure

Potential chronic health effects

General : May cause damage to organs through prolonged or repeated exposure.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : May cause genetic defects.

Reproductive toxicity : Suspected of damaging fertility or the unborn child.

Section 12. Ecological information

Toxicity

Product/substance	Result
toluene	**Acute - LC50 - Fresh water** Fish - Coho salmon,silver salmon - *Oncorhynchus kisutch* - Fry Weight: 1 g 5500 µg/l [96 hours] Effect: Mortality **Acute - EC50** Daphnia - *Daphnia magna* 3.78 mg/l [48 hours] **Acute - EC50** Algae - *Chlorella vulgaris* 134 mg/l [3 hours] **Acute - NOEC** Algae - *Skeletonema costatum* 10 mg/l [72 hours] **Chronic - NOEC** Fish - *Oncorhynchus kisutch* 1.39 mg/l [40 days] **Chronic - LOEL** Fish - *Oncorhynchus kisutch* 2.77 mg/l [40 days] **Chronic - NOEC** Daphnia - *Ceriodaphnia dubia* 0.74 mg/l [7 days] **Acute - EC50** Micro-organism 84 mg/l [24 hours] **Acute - EC50 - Fresh water** Algae - Green algae - *Raphidocelis subcapitata* 12.5 mg/l [72 hours] Effect: Growth
Naphtha (petroleum), full-range alkylate, butane-contg.	**Acute - EL50** OECD [201]

	Algae - *Pseudokirchneriella subcapitata* 3.1 mg/l [72 hours] Effect: (growth rate) **Acute - EL50** OECD [202] Crustaceans - *Daphnia magna* 4.5 mg/l [48 hours] Effect: Mobility **Chronic - NOEC** OECD 201 Algae - *Pseudokirchnerella subcapitata* 0.5 mg/l [72 hours] Effect: (growth rate) **Chronic - NOELR** OECD 201 Algae - *Pseudokirchnerella subcapitata* 0.5 mg/l [72 hours] Effect: (growth rate)
Hydrocarbons, C4-6, depentanizer lights, arom. hydrotreater	**Acute - EC50** OECD 201 Algae - *Pseudokirchneriella subcapitata* 3.1 mg/l [72 hours] Effect: (growth rate) **Acute - LC50** Fish - *Pimephales promelas* 8.2 mg/l [96 hours] **Acute - EC50** OECD 202 Crustaceans - *Daphnia magna* 4.5 mg/l [48 hours] Effect: Mobility **Acute - EL50** OECD 201 [201] Algae - *Pseudokirchneriella subcapitata* 3.1 mg/l [72 hours] Effect: (growth rate)
ethanol	**Acute - LC50 - Fresh water** Fish - Rainbow trout,donaldson trout - *Oncorhynchus mykiss* 42 mg/l [4 days] Effect: Mortality **Chronic - NOEC - Marine water** Algae - Green algae - *Ulva pertusa* 4.995 mg/l [96 hours] Effect: Reproduction **Acute - EC50** OECD [201] Algae - *Chlorella vugaris* 275 mg/l [72 hours] **Acute - LC50** Fish 14200 mg/l [96 hours] **Acute - EC50** STDMETH, ASTM and USEPA E729-80 Daphnia - *Ceriodaphnia dubia* 5012 mg/l [48 hours] **Chronic - NOEC** Fish

	245 mg/l [30 days] **Chronic - NOEC** Daphnia - *Ceriodaphnia dubia* 9.6 mg/l [10 days] **Acute - EC50** Micro-organism 34634 mg/l [30 minutes] **Acute - EC50** Micro-organism 35470 mg/l [5 minutes] **Acute - EC50 - Fresh water** Daphnia - Water flea - *Daphnia magna* 2 mg/l [48 hours] Effect: Intoxication
2-ethoxy-2-methylpropane	**Acute - LC50** EPA Fish - *Menidia beryllina* 574 mg/l [96 hours] **Acute - EC50** EPA Crustaceans - *Mysidopsis bahia* 37 mg/l [48 hours] Effect: Mobility **Acute - EC50** OECD 201 Algae - *Pseudokirchneriella subcapitata* 1100 mg/l [72 hours] Effect: (growth rate) **Chronic - NOEC** OECD 201 Algae - *Pseudokirchneriella subcapitata* 7.5 mg/l [72 hours] Effect: (growth rate) **Chronic - NOEC** EPA Crustaceans - *Americamysis bahia* 1.7 mg/l [28 days] Effect: Reproduction **Acute - NOEC** Micro-organism - *Pseudomonas putida* 12.5 mg/l [18 hours] Effect: (growth rate)
hex-1-ene	**Acute - EC50 - Fresh water** OECD [201] Algae - *Raphidocelis subcapitata* 1 to 1.8 mg/l [72 hours] Effect: (growth rate) **Acute - LC50 - Fresh water** OECD [203] Fish - *Oncorhynchus mykiss* 5.6 mg/l [96 hours] Effect: Mortality **Acute - NOEC - Fresh water** OECD [202] Daphnia 0.56 mg/l [48 hours] Effect: Mobility

hydrocarbons, C6, isoalkanes, <5% n-hexane	**Acute - EC50 - Fresh water** OECD [202] Daphnia 0.56 to 1 mg/l [48 hours] Effect: Mobility **Acute - NOELR - Fresh water** Algae - *Pseudokirchnerella subcapitata* 3.034 mg/l [72 hours] Effect: (growth rate) **Acute - LL50 - Fresh water** Fish - *Oncorhynchus mykiss* 18.27 mg/l [96 hours] Effect: Mortality **Acute - EL50 - Fresh water** Daphnia - *Daphnia Magna* 31.89 mg/l [48 hours] Effect: Mobility **Chronic - NOELR - Fresh water** Fish - *Oncorhynchus mykiss* 4.089 mg/l [28 days] Effect: (growth rate) **Chronic - NOELR - Fresh water** Daphnia - *Daphnia Magna* 7.138 mg/l [21 days] Effect: Reproduction **Acute - NOEL - Fresh water** Micro-organism 15.81 mg/l [48 hours]

Based on available data, the classification criteria are not met.

Persistence and degradability

Product/substance	Result
2-ethoxy-2-methylpropane	OECD 301D 6.6% [28 days] - Not readily

Product/substance	Aquatic half-life	Photolysis	Biodegradability
toluene	-	-	Readily
ethanol	-	-	Readily
2-ethoxy-2-methylpropane	-	-	Not readily
hex-1-ene	-	-	Readily
hydrocarbons, C6, isoalkanes, <5% n-hexane	-	-	Readily

Bioaccumulative potential

Product/substance	$LogK_{ow}$	BCF	Potential
toluene	2.73	90	Low
Naphtha (petroleum), full-range alkylate, butane-contg.	-	10 to 2500	High
Hydrocarbons, C4-6, depentanizer lights, arom. hydrotreater	-	10 to 2500	High
ethanol	-0.35	-	Low
2-ethoxy-2-methylpropane	1.48	-	Low
hex-1-ene	3.87	2.59	Low

hydrocarbons, C6, isoalkanes, <5% n-hexane	3.6	-	Low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Mobility in soil : Given its physical and chemical characteristics, the product is generally mobile in the ground It may contaminate ground water. The product spreads on the surface of the water. The product evaporates in the air and dissipates more or less depending on local conditions. However, it may stagnate in pools in low-lying areas, in an undisturbed or confined atmosphere.

Other adverse effects

No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	ADG	ADR/RID	IMDG	ICAO/IATA
UN/ID No	UN1203	UN1203	UN1203	UN1203
UN proper shipping name	GASOLINE	GASOLINE	GASOLINE	Gasoline
Transport hazard class(es)	3 	3 	3 	3 
Packing group	II	II	II	II
Environmental hazards	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.

Additional information

ADG : **Hazchem code** 3YE
Special provisions 243

ADR/RID : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Hazard identification number 33
Limited quantity 1 L
Special provisions 243, 534, 664
Tunnel code (D/E)

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Emergency schedules F-E, S-E
Special provisions 243

ICAO/IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.
Quantity limitation Passenger and Cargo Aircraft: 5 L. Packaging instructions: 353. Cargo Aircraft Only: 60 L. Packaging instructions: 364. Limited Quantities - Passenger Aircraft: 1 L. Packaging instructions: Y341.
Special provisions A100

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia inventory (AIIC) : All components are listed or exempted.

Canada inventory (DSL/NDSL) : **Canada (CEPA DSL):** At least one component is not listed.
Canada (CEPA NDSL): Not determined.

China inventory (IECSC) : All components are listed or exempted.

Europe inventory (EC) : All components are listed or exempted.

Japan inventory	:	**Japan inventory (CSCL)**: All components are listed or exempted. **Japan inventory (ISHL)**: All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC)	:	At least one component is not listed.
Philippines inventory (PICCS)	:	At least one component is not listed.
Korea inventory (KECI)	:	At least one component is not listed.
Taiwan Chemical Substances Inventory (TCSI)	:	Not determined.
Thailand inventory	:	Not determined.
Turkey inventory	:	Not determined.
United States inventory (TSCA 8b)	:	All components are listed or exempted.
Vietnam inventory	:	Not determined.

The information stated in this section relates solely to the conformity of the chemical product with the countries Inventories. The information used to confirm the inventory status of this product may be based on additional data to the chemical composition shown in Section 3. Other regulations may apply for importation or marketing authorizations.

Section 16. Any other relevant information

Revision comments : Not available.

History

Date of printing	:	6/27/2025
Date of revision	:	6/27/2025
Date of previous issue	:	1/31/2025
Version	:	7

Key to abbreviations :

ACGIH = American Conference of Governmental Industrial Hygienists
ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
EC50 = Half maximal effective concentration
EL50 = median Effective Loading
IATA = International Air Transport Association
IC50 = Half maximal inhibitory concentration
IDHL = Immediately dangerous to life or health
IMDG = International Maritime Dangerous Goods
LC50 = Median lethal concentration
LD50 = Median lethal dose
LL50 = median Lethal Loading
LogKow = logarithm of the octanol/water partition coefficient
N/A = Not available
NIOSH = National Institute of Occupational Safety and Health
NOAEL = No Observed Adverse Effect Level
NOEC No Observed Effect Concentration
NOEL = No Observed Effect Level
NOELR = No observed Effect Loading Rate
OECD = Organisation for Economic Co-operation and Development
OEL = Occupational Exposure Limit
POP = Persistent Organic Pollutants
QSAR = Quantitative Structure–Activity Relationship
REL = Recommanded Exposure Limit
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail

Section 16. Any other relevant information

STEL = Short Term Exposure Limit
TLV = Threshold Limit Value
TWA = Time Weight Average
VOC = Volatile Organic Compound
UVCB Substance of unknown or Variable composition, Complex reaction products or Biological material

Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 2	On basis of test data
SKIN CORROSION/IRRITATION - Category 2	Calculation method
GERM CELL MUTAGENICITY - Category 1B	Calculation method
CARCINOGENICITY - Category 1B	Calculation method
TOXIC TO REPRODUCTION - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method
ASPIRATION HAZARD - Category 1	Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

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