SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Supersedes Date	Revision date	Revision Number
17/04/2023	25/01/2024	1

Country-Language: FIN-EN

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Name Motor gasoline 95 E10, 98 E5, sulphur free, summer grade, winter grade; Neste Futura 95 E10, 98 E5 (BE95 E10, BE98 E5), BE95E5

Product Code(s) 13866

Safety data sheet number 13866

Unique Formula Identifier (UFI) 91VR-SXX3-381W-TTC1

Pure substance/mixture Mixture

Contains Gasoline, Ethyl tert-butyl ether (ETBE), 2-methoxy-2-methylbutane (TAME), 2-ethoxy-2-methylbutane (TAEE)

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

Recommended use Use as a fuel (ES 12a, ES 12b, ES 12c)

1.3. Details of the supplier of the safety data sheet

Supplier
Neste Oyj
Keilaranta 21, Espoo, P.O.B. 95, FIN-00095 NESTE, FINLAND
Tel. +358 10 45811
SDS@neste.com (chemical safety)

1.4. Emergency telephone number

Emergency Telephone :

Emergency Telephone - §45 - (EC)1272/2008	
Europe	**112**
Estonia	Poison information telephone number: 16662, calling from abroad: (+372) 7943 794
Finland	+358 800 147 111, +358 9 471 977, Poison Information Centre
Latvia	Valsts toksikoloģijas centrs: (+371) 6704 2473
Lithuania	Neatidėliotina informacija apsinuodijus: +370 5 236 20 52.
Sweden	När det är akut: 112, begär giftinformation. I mindre akuta fall 010-456 6700, Giftinformationscentralens direktnummer

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

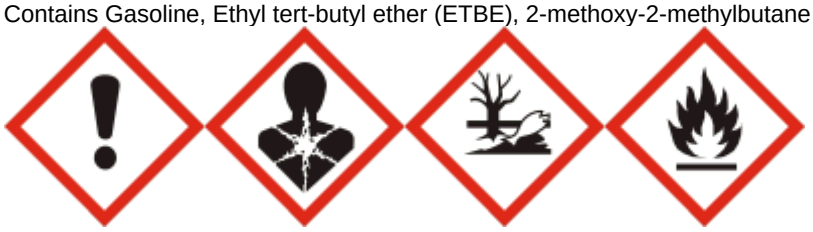
Regulation (EC) No 1272/2008

Flammable liquids	Category 1 - (H224)
Skin corrosion/irritation	Category 2 - (H315)

Germ cell mutagenicity	Category 1B - (H340)
Carcinogenicity	Category 1B - (H350)
Reproductive toxicity	Category 2 - (H361)
Specific target organ toxicity — single exposure	Category 3 - (H336)
Category 3 Narcotic effects	
Aspiration hazard	Category 1 - (H304)
Chronic aquatic toxicity	Category 2 - (H411)

2.2. Label elements

Contains Gasoline, Ethyl tert-butyl ether (ETBE), 2-methoxy-2-methylbutane (TAME), 2-ethoxy-2-methylbutane (TAEE)



Signal word

Danger

Hazard statements

H224 - Extremely flammable liquid and vapour
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
H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements - EU (§28, 1272/2008)

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P273 - Avoid release to the environment
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor
P331 - Do NOT induce vomiting
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P261 - Avoid breathing vapours

2.3. Other hazards

Volatile. Vapours may form explosive mixture with air. Risk of soil and ground water contamination.

This mixture contains no substance considered to be persistent, bioaccumulating or toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

This product does not contain substances considered to have endocrine disrupting properties at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Gasoline 86290-81-5	>= 78	01-2119471335-39	289-220-8	Aquatic Chronic 2 (H411) Asp. Tox. 1 (H304) Repr. 2 (H361fd) Muta. 1B (H340) Skin Irrit. 2 (H315) Flam. Liq. 1 (H224) Carc. 1B (H350) STOT SE 3 (H336)	-	-	-
Methyl tert-butyl ether (MTBE) 1634-04-4	<= 22	01-2119452786-27	216-653-1	Skin Irrit. 2 (H315) Flam. Liq. 2 (H225)	-	-	-
Ethyl tert-butyl ether (ETBE) 637-92-3	<= 22	01-2119452785-29	211-309-7	STOT SE 3 (H336) Flam. Liq. 2 (H225)	-	-	-
2-methoxy-2-methyl butane (TAME) 994-05-8	<= 22	01-2119453236-41	213-611-4	Acute Tox. 4 (H302) STOT SE 3 (H336) Flam. Liq. 2 (H225)	-	-	-
Ethanol 64-17-5	<= 10	01-2119457610-43	200-578-6	Eye Irrit. 2 (H319) Flam. Liq. 2 (H225)	Eye Irrit. 2 :: 50%<C<=100%	-	-
2-ethoxy-2-methylbutane (TAEE) 919-94-8	< 10	01-2119489926-16	618-804-0	Eye Irrit. 2 (H319) Skin Irrit. 2 (H315) STOT SE 3 (H336) Flam. Liq. 2 (H225)	-	-	-
methanol 67-56-1	< 3	01-2119433307-44	200-659-6	Acute Tox. 3 (H311) STOT SE 1 (H370) Acute Tox. 3 (H301) Flam. Liq. 2 (H225) Acute Tox. 3 (H331)	STOT SE 1 :: C>=10% STOT SE 2 :: 3%<=C<10%	-	-

Full text of H- and EUH-phrases: see section 16

This product does not contain candidate substances of very high concern at a concentration >=0.1% (Regulation (EC) No. 1907/2006 (REACH), Article 59)

Additional information
Mixture of a petroleum product, oxygenates and additives. Total aromatics at maximum: 35 %.
The gasoline component (86290-81-5) of the product contains: Benzene (CAS 71-43-2) ≤ 1 %, Toluene (CAS 108-88-3) ~ 5 - 15 %, N-Hexane (CAS 110-54-3) < 5 %. In the 95 E10 grade total ethers max. 22 vol-%. The 98 E5 grade contains max. 5 vol-% ethanol. In the 98 E5 grade MTBE, ETBE and TAME max. 15 vol-%. Total ethers max. 15 vol-%.

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.

Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. If breathing is difficult, (trained personnel should) give oxygen.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.
Ingestion	ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. Do NOT induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical attention. Delayed pulmonary edema may occur.
Self-protection of the first aider	Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid contact with skin, eyes or clothing.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms	Irritating to skin. May irritate eyes. Vapours in high concentrations are narcotic. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.

4.3. Indication of any immediate medical attention and special treatment needed

Note to doctors	Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media	Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	Extremely flammable liquid and vapour. Risk of ignition. Explosion risk. Vapours may accumulate on the floor and in low-lying areas. Containers may explode when heated. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Prevent fire extinguishing water from contaminating surface water or the ground water system.
Hazardous combustion products	Carbon dioxide (CO2). Carbon monoxide.

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions

Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid breathing vapours. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.

For emergency responders

Prevent unauthorized access. Vapours are heavier than air, spread along floors and form explosive mixtures with air. Flash back possible over considerable distance. Vapours may accumulate in confined areas (basement, tanks, hopper/tank cars, etc.). Eliminate all ignition sources if safe to do so. Take precautionary measures against static discharges.

6.2. Environmental precautions

Environmental precautions

Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Keep out of drains, sewers, ditches and waterways. Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air). Risk of soil and ground water contamination.

6.3. Methods and material for containment and cleaning up

Methods for containment

Stop leak if you can do it without risk. Do not touch or walk through spilled material. Dyke far ahead of spill to collect run-off water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up

Immediately start clean-up of the liquid and contaminated soil. Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Pay attention to the fire and health hazards caused by the product.

Prevention of secondary hazards

Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections

See Section 7 for more information. See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

The product contains volatile substances which may spread in the atmosphere. Vapours may accumulate on the floor and in low-lying areas. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion.
Use only outdoors or in a well-ventilated area. Try to avoid product volatilization during

handling and transferring. Avoid breathing vapours or mists. Avoid contact with skin, eyes or clothing. Use personal protection equipment. Use with local exhaust ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. During tank operations follow special instructions (risk of oxygen displacement and hydrocarbons).

General hygiene considerations Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Flammable liquid storage. Store in accordance with the particular national regulations. Store in accordance with local regulations. Protect from direct sunlight. Store in a demarcated bunded area to prevent release to drains and/or watercourses. Vapour from residual product may create a highly flammable or explosive atmosphere inside the container. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labelled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store away from other materials.

7.3. Specific end use(s)

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
Gasoline 86290-81-5	-	-	TWA: 300 ppm TWA: 903 mg/m³ STEL: 500 ppm STEL: 1501 mg/m³	-	TWA: 300 ppm STEL: 500 ppm
Methyl tert-butyl ether (MTBE) 1634-04-4	TWA: 50 ppm TWA: 183.5 mg/m³ STEL: 100 ppm STEL: 367 mg/m³	TWA: 50 ppm TWA: 180 mg/m³ STEL 100 ppm STEL 360 mg/m³	TWA: 40 ppm TWA: 146 mg/m³ STEL: 100 ppm STEL: 367 mg/m³	STEL: 100 ppm STEL: 367 mg/m³ TWA: 50 ppm TWA: 183.5 mg/m³	TWA: 50 ppm TWA: 183.5 mg/m³ STEL: 100 ppm STEL: 367 mg/m³ *
Ethyl tert-butyl ether (ETBE) 637-92-3	-	-	TWA: 5 ppm TWA: 21 mg/m³	-	-
2-methoxy-2-methylbutane (TAME) 994-05-8	-	-	TWA: 20 ppm TWA: 85 mg/m³	-	-
Ethanol 64-17-5	-	TWA: 1000 ppm TWA: 1900 mg/m³ STEL 2000 ppm STEL 3800 mg/m³	TWA: 1000 ppm TWA: 1907 mg/m³	TWA: 1000 mg/m³	TWA: 1000 ppm TWA: 1900 mg/m³
methanol	TWA: 200 ppm	TWA: 200 ppm	TWA: 200 ppm	TWA: 200 ppm	TWA: 200 ppm

67-56-1	TWA: 260 mg/m³ *	TWA: 260 mg/m³ STEL 800 ppm STEL 1040 mg/m³ H*	TWA: 266 mg/m³ STEL: 250 ppm STEL: 333 mg/m³ D*	TWA: 260.0 mg/m³ K*	TWA: 260 mg/m³ *
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Gasoline 86290-81-5	-	TWA: 400 mg/m³	-	TWA: 200 mg/m³ STEL: 300 mg/m³	-
Methyl tert-butyl ether (MTBE) 1634-04-4	STEL: 367 mg/m³ STEL: 100 ppm TWA: 183.5 mg/m³ TWA: 50 ppm	TWA: 100 mg/m³ Ceiling: 200 mg/m³	TWA: 40 ppm TWA: 144 mg/m³ STEL: 376 mg/m³ STEL: 100 ppm	TWA: 50 ppm TWA: 183.5 mg/m³ STEL: 100 ppm STEL: 367 mg/m³	TWA: 50 ppm TWA: 180 mg/m³ STEL: 100 ppm STEL: 360 mg/m³
Ethyl tert-butyl ether (ETBE) 637-92-3	-	-	-	-	TWA: 5 ppm TWA: 25 mg/m³
2-methoxy-2-methylbutane (TAME) 994-05-8	-	-	-	-	TWA: 20 ppm TWA: 84 mg/m³
Ethanol 64-17-5	-	TWA: 1000 mg/m³ Ceiling: 3000 mg/m³	TWA: 1000 ppm TWA: 1900 mg/m³ STEL: 2000 ppm STEL: 3800 mg/m³	TWA: 500 ppm TWA: 1000 mg/m³ STEL: 1000 ppm STEL: 1900 mg/m³	TWA: 1000 ppm TWA: 1900 mg/m³ STEL: 1300 ppm STEL: 2500 mg/m³
methanol 67-56-1	* TWA: 200 ppm TWA: 260 mg/m³	TWA: 250 mg/m³ Ceiling: 1000 mg/m³ D*	TWA: 200 ppm TWA: 260 mg/m³ H* STEL: 400 ppm STEL: 520 mg/m³	TWA: 200 ppm TWA: 250 mg/m³ STEL: 250 ppm STEL: 350 mg/m³ A*	TWA: 200 ppm TWA: 270 mg/m³ STEL: 250 ppm STEL: 330 mg/m³ iho*
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Methyl tert-butyl ether (MTBE) 1634-04-4	TWA: 50 ppm TWA: 183.5 mg/m³ STEL: 367 mg/m³ STEL: 100 ppm	TWA: 50 ppm TWA: 180 mg/m³	TWA: 50 ppm TWA: 180 mg/m³ Peak: 75 ppm Peak: 270 mg/m³	TWA: 50 ppm TWA: 183.5 mg/m³ STEL: 100 ppm STEL: 367 mg/m³	TWA: 50 ppm TWA: 183.5 mg/m³ STEL: 100 mg/m³ STEL: 367 mg/m³
Ethanol 64-17-5	TWA: 1000 ppm TWA: 1900 mg/m³ STEL: 5000 ppm STEL: 9500 mg/m³	TWA: 200 ppm TWA: 380 mg/m³	TWA: 200 ppm TWA: 380 mg/m³ Peak: 800 ppm Peak: 1520 mg/m³	TWA: 1000 ppm TWA: 1900 mg/m³	TWA: 1000 ppm TWA: 1900 mg/m³ STEL: 2000 ppm STEL: 3800 mg/m³
methanol 67-56-1	TWA: 200 ppm TWA: 260 mg/m³ STEL: 1000 ppm STEL: 1300 mg/m³ *	TWA: 100 ppm TWA: 130 mg/m³ H*	TWA: 100 ppm TWA: 130 mg/m³ Peak: 200 ppm Peak: 260 mg/m³ *	TWA: 200 ppm TWA: 260 mg/m³ STEL: 250 ppm STEL: 325 mg/m³ *	TWA: 260 mg/m³ TWA: 200 ppm b*
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Gasoline 86290-81-5	TWA: 300 ppm STEL: 500 ppm	-	TWA: 300 ppm STEL: 500 ppm	-	STEL: 300 mg/m³ TWA: 200 mg/m³
Methyl tert-butyl ether (MTBE) 1634-04-4	TWA: 50 ppm TWA: 183.5 mg/m³ STEL: 100 ppm STEL: 367 mg/m³	TWA: 50 ppm TWA: 183.5 mg/m³ STEL: 100 ppm STEL: 367 mg/m³	TWA: 50 ppm TWA: 180 mg/m³	TWA: 50 ppm TWA: 183.5 mg/m³ STEL: 100 ppm STEL: 367 mg/m³	STEL: 100 ppm STEL: 367 mg/m³ TWA: 50 ppm TWA: 183.5 mg/m³
Ethyl tert-butyl ether (ETBE) 637-92-3	TWA: 25 ppm STEL: 75 ppm	-	TWA: 25 ppm TWA: 104 mg/m³	-	-
2-methoxy-2-methylbutane (TAME) 994-05-8	-	-	TWA: 20 ppm TWA: 84 mg/m³	-	-
Ethanol 64-17-5	STEL: 1000 ppm	-	STEL: 1000 ppm STEL: 1884 mg/m³	TWA: 1000 mg/m³	STEL: 1000 ppm STEL: 1900 mg/m³ TWA: 500 ppm TWA: 1000 mg/m³

methanol 67-56-1	TWA: 200 ppm TWA: 260 mg/m³ STEL: 600 ppm STEL: 780 mg/m³ Sk*	TWA: 200 ppm TWA: 260 mg/m³ cute*	TWA: 200 ppm TWA: 262 mg/m³ STEL: 250 ppm STEL: 328 mg/m³ cute*	TWA: 200 ppm TWA: 260 mg/m³ Ada*	TWA: 200 ppm TWA: 260 mg/m³ O*
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
Gasoline 86290-81-5	-	-	TWA: 50 ppm TWA: 240 mg/m³ STEL: 100 ppm STEL: 480 mg/m³	-	-
Methyl tert-butyl ether (MTBE) 1634-04-4	STEL: 367 mg/m³ STEL: 100 ppm TWA: 183.5 mg/m³ TWA: 50 ppm	STEL: 367 mg/m³ STEL: 100 ppm TWA: 183.5 mg/m³ TWA: 50 ppm	TWA: 49 ppm TWA: 180 mg/m³ STEL: 98 ppm STEL: 360 mg/m³	TWA: 50 ppm TWA: 183.5 mg/m³ STEL: 100 ppm STEL: 367 mg/m³	STEL: 270 mg/m³ TWA: 180 mg/m³
Ethyl tert-butyl ether (ETBE) 637-92-3	-	-	-	-	STEL: 200 mg/m³ TWA: 100 mg/m³
Ethanol 64-17-5	-	-	TWA: 137 ppm TWA: 260 mg/m³ STEL: 1000 ppm STEL: 1900 mg/m³ H*	TWA: 500 ppm TWA: 950 mg/m³ STEL: 625 ppm STEL: 1187.5 mg/m³	TWA: 1900 mg/m³
methanol 67-56-1	TWA: 200 ppm TWA: 260 mg/m³ Peau*	skin* TWA: 200 ppm TWA: 260 mg/m³	TWA: 100 ppm TWA: 133 mg/m³ H*	TWA: 100 ppm TWA: 130 mg/m³ STEL: 150 ppm STEL: 162.5 mg/m³ H*	STEL: 300 mg/m³ TWA: 100 mg/m³ Prohibited - substances or mixtures containing Methanol in weight concentration >3%;except fuels used in the model building, powerboating, fuel cells and biofuels skóra*
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Gasoline 86290-81-5	TWA: 300 ppm STEL: 500 ppm	-	-	-	TWA: 300 ppm
Methyl tert-butyl ether (MTBE) 1634-04-4	TWA: 50 ppm TWA: 183.5 mg/m³ STEL: 100 ppm STEL: 367 mg/m³	TWA: 50 ppm TWA: 183.5 mg/m³ STEL: 100 ppm STEL: 367 mg/m³	TWA: 50 ppm TWA: 183.5 mg/m³ Ceiling: 367 mg/m³	TWA: 50 ppm TWA: 183.5 mg/m³ STEL: 100 ppm STEL: 367 mg/m³	TWA: 50 ppm TWA: 183.5 mg/m³ STEL: 100 ppm STEL: 367 mg/m³
Ethyl tert-butyl ether (ETBE) 637-92-3	TWA: 25 ppm	-	-	-	TWA: 5 ppm TWA: 21 mg/m³
2-methoxy-2-methylbutane (TAME) 994-05-8	TWA: 20 ppm	-	-	-	-
Ethanol 64-17-5	STEL: 1000 ppm	TWA: 1000 ppm TWA: 1900 mg/m³ STEL: 5000 ppm STEL: 9500 mg/m³	TWA: 500 ppm TWA: 960 mg/m³ Ceiling: 1920 mg/m³	TWA: 960 mg/m³ TWA: 500 ppm STEL: 1000 ppm STEL: 1920 mg/m³	STEL: 1000 ppm STEL: 1910 mg/m³
methanol 67-56-1	TWA: 200 ppm TWA: 260 mg/m³ STEL: 250 ppm Cutânea*	TWA: 200 ppm TWA: 260 mg/m³ P*	TWA: 200 ppm TWA: 260 mg/m³ K*	TWA: 200 ppm TWA: 260 mg/m³ STEL: 800 ppm STEL: 1040 mg/m³ K*	TWA: 200 ppm TWA: 266 mg/m³ vía dérmica*

Chemical name	Sweden	Switzerland	United Kingdom
Gasoline 86290-81-5	NGV: 250 mg/m³	TWA: 300 ppm TWA: 1100 mg/m³	-
Methyl tert-butyl ether (MTBE) 1634-04-4	Bindande KGV: 100 ppm Bindande KGV: 367 mg/m³ NGV: 30 ppm NGV: 110 mg/m³	TWA: 50 ppm TWA: 180 mg/m³ STEL: 75 ppm STEL: 270 mg/m³	TWA: 50 ppm TWA: 183.5 mg/m³ STEL: 100 ppm STEL: 367 mg/m³
Ethanol 64-17-5	Vägledande KGV: 1000 ppm Vägledande KGV: 1900 mg/m³ NGV: 500 ppm NGV: 1000 mg/m³	TWA: 500 ppm TWA: 960 mg/m³ STEL: 1000 ppm STEL: 1920 mg/m³	TWA: 1000 ppm TWA: 1920 mg/m³ STEL: 3000 ppm STEL: 5760 mg/m³
methanol 67-56-1	Vägledande KGV: 250 ppm Vägledande KGV: 350 mg/m³ NGV: 200 ppm NGV: 250 mg/m³ H*	TWA: 200 ppm TWA: 260 mg/m³ STEL: 400 ppm STEL: 520 mg/m³ H*	TWA: 200 ppm TWA: 266 mg/m³ STEL: 250 ppm STEL: 333 mg/m³ Sk*

Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
Gasoline 86290-81-5	-	-	1286.4 mg/m³ [4] [7] 837.5 mg/m³ [5] [6] 1066.67 mg/m³ [5] [7]
Methyl tert-butyl ether (MTBE) 1634-04-4	-	5100 mg/kg bw/day [4] [6]	178.5 mg/m³ [4] [6] 357 mg/m³ [5] [7]
Ethyl tert-butyl ether (ETBE) 637-92-3	-	6767 mg/kg bw/day [4] [6]	352 mg/m³ [4] [6] 2800 mg/m³ [4] [7] 105 mg/m³ [5] [6]
2-methoxy-2-methylbutane (TAME) 994-05-8	-	1601 mg/kg bw/day [4] [6]	88.8 mg/m³ [4] [6] 353.3 mg/m³ [4] [7]
Ethanol 64-17-5	-	343 mg/kg bw/day [4] [6]	950 mg/m³ [4] [6] 1900 mg/m³ [5] [7]
2-ethoxy-2-methylbutane (TAEE) 919-94-8	-	364 mg/kg bw/day [4] [6]	101 mg/m³ [4] [6] 402 mg/m³ [4] [7] 119 mg/m³ [5] [6]
methanol 67-56-1	-	20 mg/kg bw/day [4] [6] 20 mg/kg bw/day [4] [7]	130 mg/m³ [4] [6] 130 mg/m³ [4] [7] 130 mg/m³ [5] [6] 130 mg/m³ [5] [7]

Notes

[4]	Systemic health effects.
[5]	Local health effects.
[6]	Long term.
[7]	Short term.

Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
Gasoline 86290-81-5	-	-	1152 mg/m³ [4] [7] 178.57 mg/m³ [5] [6] 640 mg/m³ [5] [7]
Methyl tert-butyl ether (MTBE)	7.1 mg/kg bw/day [4] [6]	3 570 mg/kg bw/day [4] [6]	53.6 mg/m³ [4] [6]

Chemical name	Oral	Dermal	Inhalation
1634-04-4			214 mg/m³ [5] [7]
Ethyl tert-butyl ether (ETBE) 637-92-3	6 mg/kg bw/day [4] [6]	4060 mg/kg bw/day [4] [6]	105 mg/m³ [4] [6] 1680 mg/m³ [4] [7] 63 mg/m³ [5] [6]
2-methoxy-2-methylbutane (TAME) 994-05-8	1 mg/kg bw/day [4] [6]	961 mg/kg bw/day [4] [6]	26.5 mg/m³ [4] [6] 212 mg/m³ [4] [7]
Ethanol 64-17-5	87 mg/kg bw/day [4] [6]	206 mg/kg bw/day [4] [6]	114 mg/m³ [4] [6] 950 mg/m³ [5] [7]
2-ethoxy-2-methylbutane (TAEE) 919-94-8	0.83 mg/kg bw/day [4] [6]	-	30 mg/m³ [4] [6] 241 mg/m³ [4] [7] 72 mg/m³ [5] [6]
methanol 67-56-1	4 mg/kg bw/day [4] [6] 4 mg/kg bw/day [4] [7]	4 mg/kg bw/day [4] [6] 4 mg/kg bw/day [4] [7]	26 mg/m³ [4] [6] 26 mg/m³ [4] [7] 26 mg/m³ [5] [6] 26 mg/m³ [5] [7]

Notes

[4]	Systemic health effects.
[5]	Local health effects.
[6]	Long term.
[7]	Short term.

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
Methyl tert-butyl ether (MTBE) 1634-04-4	5.1 mg/L	-	0.26 mg/L	-	-
Ethyl tert-butyl ether (ETBE) 637-92-3	0.51 mg/L	-	0.017 mg/L	-	-
2-methoxy-2-methylbutane (TAME) 994-05-8	0.51 mg/L	-	0.0339 mg/L	-	-
Ethanol 64-17-5	0.96 mg/L	2.75 mg/L	0.79 mg/L	-	-
2-ethoxy-2-methylbutane (TAEE) 919-94-8	2.2 mg/L	1.43 mg/L	0.22 mg/L	-	-
methanol 67-56-1	20.8 mg/L	1540 mg/L	2.08 mg/L	-	-

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
Methyl tert-butyl ether (MTBE) 1634-04-4	23 mg/kg sediment dw	1.17 mg/kg sediment dw	71 mg/L	1.56 mg/kg soil dw	-
Ethyl tert-butyl ether (ETBE) 637-92-3	2.86 mg/kg sediment dw	0.078 mg/kg sediment dw	12.5 mg/L	0.274 mg/kg soil dw	-

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
2-methoxy-2-methylbutane (TAME) 994-05-8	2.99 mg/kg sediment dw	0.199 mg/kg sediment dw	25 mg/L	0.301 mg/kg soil dw	-
Ethanol 64-17-5	3.6 mg/kg, dw	2.9 mg/kg, dw	580 mg/l	0.63 mg/kg, dw	380 mg/kg
2-ethoxy-2-methylbutane (TAEE) 919-94-8	204 mg/kg sediment dw	20.4 mg/kg sediment dw	483 mg/L	39.5 mg/kg soil dw	6670 g/kg food
methanol 67-56-1	77 mg/kg sediment dw	7.7 mg/kg sediment dw	100 mg/L	100 mg/kg soil dw	-

8.2. Exposure controls

Engineering controls Use only in well-ventilated areas. Use personal protective equipment and/or local ventilation when needed. During tank operations follow special instructions (risk of oxygen displacement and hydrocarbons).

Personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). Face shield when needed.

Hand protection Wear protective gloves. It is recommended that gloves are made of the following material:. Nitrile rubber. Wear suitable gloves tested to EN 374. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. Change protective gloves regularly.

Skin and body protection Protective clothing when needed. Wear anti-static protective clothing if there is a risk of ignition from static electricity.

Respiratory protection Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit. Wear a respirator fitted with the following cartridge:. Gas filter. AX. Gas and combination filter cartridges must comply with EN 14387. Filter must be changed often enough. At high concentrations a breathing apparatus must be used (self-contained or fresh air hose breathing apparatus).

General hygiene considerations Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls Store in a demarcated bunded area to prevent release to drains and/or watercourses.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state Liquid
Appearance Mobile liquid
Colour clear
Odour Hydrocarbons. Ethers.
Odour threshold -

Property	Values	Remarks • Method
Melting point / freezing point	< -20 °C	None known
Initial boiling point and boiling range	20 - 210 °C	None known
Flammability	H224	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	8,1 % (calculated)	
Lower flammability or explosive limits	1,4 % (calculated)	
Flash point	< 0 °C	None known
Autoignition temperature	> 280 °C	Estimated value
Decomposition temperature		-
pH	No data available	-
pH (as aqueous solution)	No data available	None known
Kinematic viscosity	< 1 mm2/s @ 38 °C	None known
Dynamic viscosity	No data available	None known
Water solubility	Slightly soluble in water. The product contains substances which are water-soluble and may spread in water systems: MTBE: 41.9 g/l, ETBE: 16.4 g/l, TAME: 10.4 g/l, TAEE: 3.9 g/l. Ethanol: Completely soluble in water. Methanol: Completely soluble in water	None known
Solubility(ies)	No data available	None known
Partition coefficient	Hydrocarbons:, log Kow: ≥ 4, MTBE log Kow: 1.06, ETBE log Kow: 1.48, TAME log Kow: 1.55, TAEE log Kow: 2.95-3.35., ethanol, log Kow: -0.35., methanol, log Kow: -0.77	None known
Vapour pressure	45 - 90 kPa	@ 38°C
Relative density	0,72 - 0,77	@ 15 °C
Bulk density	No data available	
Liquid Density	No data available	
Relative vapour density	> 3	(Air = 1.0)
Particle characteristics		
Particle Size	Not applicable	
Particle Size Distribution	Not applicable	

9.2. Other information

9.2.1. Information with regards to physical hazard classes

Not applicable

Explosives	No
Explosive properties	Not considered to be explosive
Oxidising properties	Does not meet the criteria for classification as oxidising

9.2.2. Other safety characteristics

No information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability Stable under normal conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid Heat, flames and sparks.

10.5. Incompatible materials

Incompatible materials Strong acids. Strong bases. Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products None under normal use conditions.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity Based on available data, the classification criteria are not met

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Gasoline	> 5000 mg/kg, Rat (OECD TG 401)	> 2000 mg/kg, Rabbit (OECD TG 402)	> 5610 mg/m³, Rat (4h) (OECD TG 403)
Methyl tert-butyl ether (MTBE)	> 2 000 mg/kg bw, Rat (OECD 401)	> 2 000 mg/kg bw, Rat (OECD 402)	= 85 mg/L (Rat) 4 h (OECD 403)
Ethyl tert-butyl ether (ETBE)	> 2000 mg/kg bw (Rat)	> 2 000 mg/kg bw, Rabbit (OECD 402)	> 5.88 mg/L air, Rat, 4 h (OECD 403)
2-methoxy-2-methylbutane (TAME)	1602 - 2417 mg/kg bw, Rat (OECD 401)	> 2000 mg/kg, Rabbit (OECD 402)	> 5400 mg/m³, Rat (4h) (OECD 403)
Ethanol	= 15 010 mg/kg bw, Rat (OECD 401)	= 15800 mg/kg (Rabbit)	= 117 mg/L (Rat) 4 h = 133.8 mg/L (Rat) 4 h
2-ethoxy-2-methylbutane (TAEE)	> 2 000 mg/kg bw, Rat	> 2 000 mg/kg bw, Rabbit (OECD 402)	> 23.2 mg/L air (analytical), Rat
methanol	1187 - 2769 mg/kg, Oral, Rat	~ 17100 mg/kg, Dermal, Rabbit	128 000 mg/m³, (4h), Inhalation, Rat

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Causes skin irritation. The product irritates mucous membranes and may cause abdominal discomfort if swallowed. May cause respiratory irritation.

Serious eye damage/eye irritation Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation Based on available data, the classification criteria are not met. (OECD 406, 429, EU B.6, B.43, EPA OTS 798.4100).

Germ cell mutagenicity Contains a known or suspected mutagen. Classification based on data available for ingredients. Gasoline (CAS 86290-81-5):. May cause genetic defects. (benzene > 0.1%).

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as mutagenic.

Chemical name	European Union
Gasoline	Muta. 1B

Carcinogenicity Contains a known or suspected carcinogen. Classification based on data available for ingredients. Gasoline (CAS 86290-81-5):. May cause cancer. (benzene > 0.1%).

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	European Union
Gasoline	Carc. 1B

Reproductive toxicity Gasoline (CAS 86290-81-5):. Suspected of damaging fertility. (n-hexane (CAS 110-54-3) > 3%).
Gasoline (CAS 86290-81-5):. Suspected of damaging the unborn child. (Toluene > 3%).
Classification based on data available for ingredients.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

Chemical name	European Union
Gasoline	Repr. 2

STOT - single exposure May cause drowsiness or dizziness. May cause nausea, headache, dizziness and intoxication. Anaesthetic in high concentrations.

STOT - repeated exposure Based on available data, the classification criteria are not met. (OECD 407, 408, 410, 412, 422, 453, EPA OTS 798.2450, EPA OPPTS 870.3465).

Aspiration hazard May be fatal if swallowed and enters airways. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties This product does not contain substances considered to have endocrine disrupting properties at levels of 0.1% or higher.

11.2.2. Other information

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

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity Toxic to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Gasoline	EL50, 72 h: 3,1 mg/l, Pseudokirchneriella subcapitata NOELR, 72 h: 0,5 mg/l, Pseudokirchneriella subcapitata WAF (OECD 201)	LL50, 96 h: 8,2 mg/l, Pimephales promelas (Fat-head Minnow) LL50, 96 h: 10 mg/l, Oncorhynchus mykiss (Rainbow trout) WAF (EPA 66013-75-009, OECD 203)	-	EL50, 48 h: 4,5 mg/l, Daphnia magna NOELR, 48 h: 0,5 mg/l, Daphnia magna parWAF (OECD 202) EL50, 21 d: 10 mg/l, Daphnia magna NOELR, 21 d: 2,6 mg/l, Daphnia magna (OECD 211)
Methyl tert-butyl ether (MTBE)	EC50: >800mg/L (72h, Desmodesmus subspicatus) EC50: =184mg/L (96h, Pseudokirchneriella subcapitata)	LC50: =672mg/L (96h, Pimephales promelas) LC50: =929mg/L (96h, Pimephales promelas) LC50: >100mg/L (96h, Brachydanio rerio) LC50: =887mg/L (96h, Oncorhynchus mykiss)	-	EC50: =542mg/L (48h, Daphnia magna)
2-methoxy-2-methylbutane (TAME)	-	LC50: =580mg/L (96h, Oncorhynchus mykiss)	-	-
Ethanol	EC50: 275 mg/l (72 h) EC10: 11.5 mg/l (72 h, Chlorella vulgaris)	LC50: 14.2 mg/L (96 h, Pimephales promelas) LC50: 12.0 - 16.0mL/L (96h, Oncorhynchus mykiss)	-	LC50: 5012 mg/l (48 h, Ceriodaphnia dubia) EC50: 857 mg/l (48 h) NOEC: 2 mg/l (10 days) LC50: 9268 - 14221mg/L (48h, Daphnia magna) EC50: =2mg/L (48h, Daphnia magna)
2-ethoxy-2-methylbutane (TAEE)	-	LC50: =240mg/L (96h, Oncorhynchus mykiss)	-	-
methanol	-	LC50: =28200mg/L (96h, Pimephales promelas) LC50: >100mg/L (96h, Pimephales promelas) LC50: 19500 - 20700mg/L (96h, Oncorhynchus mykiss) LC50: 18 - 20mL/L (96h, Oncorhynchus mykiss) LC50: 13500 - 17600mg/L (96h, Lepomis macrochirus)	-	-

12.2. Persistence and degradability

Persistence and degradability

The product contains volatile substances which may spread in the atmosphere. Can be photodegraded in the atmosphere.
Stability (hydrolysis):. No significant reaction in water.

Gasoline (86290-81-5)

Method	Exposure time	Value	Results
OECD Test No. 301F: Ready Biodegradability: Manometric Respirometry Test (TG 301 F) (ISO/DIS 14593)			Inherently biodegradable.

Methyl tert-butyl ether (MTBE) (1634-04-4)

Method	Exposure time	Value	Results
OECD Test No. 301D: Ready Biodegradability: Closed Bottle Test (TG 301 D)			Not readily biodegradable

Ethyl tert-butyl ether (ETBE) (637-92-3)

Method	Exposure time	Value	Results
OECD Test No. 301D: Ready Biodegradability: Closed Bottle Test (TG 301 D)			Not readily biodegradable

2-methoxy-2-methylbutane (TAME) (994-05-8)

Method	Exposure time	Value	Results
OECD Test No. 301D: Ready Biodegradability: Closed Bottle Test (TG 301 D)			Not readily biodegradable

Ethanol (64-17-5)

Method	Exposure time	Value	Results
	14 days	89 %	Rapidly biodegradable

2-ethoxy-2-methylbutane (TAEE) (919-94-8)

Method	Exposure time	Value	Results
OECD Test No. 301D: Ready Biodegradability: Closed Bottle Test (TG 301 D)			Not readily biodegradable

methanol (67-56-1)

Method	Exposure time	Value	Results
			Rapidly biodegradable

12.3. Bioaccumulative potential

Bioaccumulation

May bioaccumulate.

Component Information

Chemical name	Partition coefficient
Gasoline	Hydrocarbons: log Kow: ≥ 4
Methyl tert-butyl ether (MTBE)	1.06
Ethyl tert-butyl ether (ETBE)	1.48
2-methoxy-2-methylbutane (TAME)	1.55
Ethanol	-0.35
2-ethoxy-2-methylbutane (TAEE)	2.95-3.35
methanol	-0.77

12.4. Mobility in soil

Mobility in soil Volatile. Volatilization is the fastest and most dominant elimination process in surface water and soil. Product can penetrate soil until reaching ground water, where the most soluble components will spread. The product contains substances which are bound to particulate matter and are retained in soil.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment The product does not contain any substance(s) classified as PBT or vPvB above the threshold of declaration.

12.6. Endocrine disrupting properties

Endocrine disrupting properties This product does not contain substances considered to have endocrine disrupting properties at levels of 0.1% or higher.

12.7. Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation. Dispose of this material and its container to hazardous or special waste collection point. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Product residues retained in emptied containers can be hazardous.

Contaminated packaging Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

SECTION 14: Transport information

IMDG

14.1 UN number or ID number	1203
14.2 UN proper shipping name	Gasoline
14.3 Transport hazard class(es)	3
14.4 Packing group	II
14.5 Environmental hazard	Marine pollutant
14.6 Special precautions for user	.
14.7 Maritime transport in bulk	. Marpol Annex I

according to IMO instruments

RID

14.1 UN number or ID number	1203
14.2 UN proper shipping name	Gasoline
14.3 Transport hazard class(es)	3
14.4 Packing group	II
14.5 Environmental hazard	Yes
14.6 Special precautions for user	.
Classification code	33

ADR

14.1 UN number or ID number	1203
14.2 UN proper shipping name	Gasoline
14.3 Transport hazard class(es)	3
14.4 Packing group	II
14.5 Environmental hazard	Yes
14.6 Special precautions for user	
Classification code	33
Tunnel restriction code	(D/E)

.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorisations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Gasoline - 86290-81-5	28. 29. 75.	-
Methyl tert-butyl ether (MTBE) - 1634-04-4	75.	-
methanol - 67-56-1	69. 75.	-

Persistent Organic Pollutants

Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

Other Regulations Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). Classification according to Regulation (EC) No. 1272/2008 [CLP].

15.2. Chemical safety assessment

Chemical Safety Report Chemical Safety Assessments have been carried out for these substances

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3
H224 - Extremely flammable liquid and vapour
H225 - Highly flammable liquid and vapour
H301 - Toxic if swallowed
H302 - Harmful if swallowed
H304 - May be fatal if swallowed and enters airways
H311 - Toxic in contact with skin
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H331 - Toxic if inhaled
H336 - May cause drowsiness or dizziness
H340 - May cause genetic defects
H350 - May cause cancer
H361d - Suspected of damaging the unborn child
H361f - Suspected of damaging fertility
H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child
H370 - Causes damage to organs
H372 - Causes damage to organs through prolonged or repeated exposure
H373 - May cause damage to organs through prolonged or repeated exposure
H411 - Toxic to aquatic life with long lasting effects

Legend
SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
+	Sensitisers		

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	On basis of test data
Acute dermal toxicity	On basis of test data
Acute inhalation toxicity - gas	On basis of test data
Acute inhalation toxicity - vapour	On basis of test data
Acute inhalation toxicity - dust/mist	On basis of test data
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method

Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method
Flammable liquids	On basis of test data

Supersedes Date 17/04/2023

Revision date 25/01/2024

Reason for revision This is the first issue. (new SDS software has been introduced)

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)
Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Exposure scenario
Use as a fuel - Industrial

Identification

Product name	Gasoline (benzene 0 - 1 %)
CAS number	86290-81-5
Version number	2020
Es reference	ES12a (0-1%)

1. Title of exposure scenario

Main title	Use as a fuel - Industrial
Process scope	Covers the use as a fuel (or fuel additives and additive components) within closed or contained systems, including incidental exposures during activities associated with its transfer, use, equipment maintenance and handling of waste.

Environment

Environmental release category	ERC7 Use of functional fluid at industrial site
SPERC	ESVOC SPERC 7.12a.v1

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC16 Use of fuels PROC28 Manual maintenance (cleaning and repair) of machinery (Closed systems - Level I)

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 1000 000 tonnes/year
Fraction of Regional tonnage used locally: 1
Annual site tonnage: 1000 000 tonnes
Maximum daily site tonnage: 3 300 tonnes

Frequency and duration of use

Continuous release.
Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.009

Use as a fuel - Industrial

Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.00001
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100

Risk management measures

Good practice	Common practices vary across sites, thus conservative process release estimates used. Risk from environmental exposure is driven by humans via indirect exposure (primarily inhalation).
STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.5% Removal efficiency (total): 95.5% Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 3800 tonne/day Assumed domestic sewage treatment plant flow (m³/day): 2000.

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air	Treat air emission to provide a typical removal efficiency of 95%.
Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 79.7 If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Soil	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment. External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method	This substance is consumed during use and no waste of the substance is generated.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	Vapour pressure > 10 kPa at STP.
Concentration details	Covers percentage substance in the product up to 100% (unless stated differently). Percentage of risk driving substance contained in product: < 1% (benzene)

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Setting	Assumes a good basic standard of occupational hygiene is implemented.
Temperature	Covers use at ambient temperatures. (unless stated differently)

Organisational measures to prevent/limit releases, dispersion and exposure

Use as a fuel - Industrial

Organisational measures

General measures (skin irritants) Ensure there is no direct skin contact with product. Identify potential areas for indirect skin contact. Wear suitable gloves tested to EN374. Clear spills immediately. Wash off any skin contamination immediately. For further specification, refer to section 8 of the SDS.

General measures (carcinogens) Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Access to work area only for authorized persons. Wear chemically-resistant gloves (tested to EN374) in combination with ‘basic’ employee training. Wear suitable coveralls to prevent exposure to the skin. Wear respiratory protection when its use is identified for certain contributing scenarios. For further specification, refer to section 8 of the SDS. Clear spills immediately. Dispose of this material and its container at hazardous or special waste collection point. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Ensure control measures are regularly inspected and maintained. Consider the need for risk based health surveillance.

General measures (flammability) For measures to control risks from physicochemical properties, refer to main body of the SDS, section 7 and/or 8.

General measures (aspiration hazard) Do not ingest. If swallowed, then seek immediate medical assistance.

Risk management measures

Use as a fuel - Industrial

Bulk transfers
Dedicated facility
(PROC 8b)
Ensure material transfers are under containment or extract ventilation.
.
Drum/batch transfers
Dedicated facility
(PROC 8b)
Ensure material transfers are under containment or extract ventilation.
.
General exposures (closed systems)
(PROC 1, PROC 2)
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Handle substance within a closed system.
Sample via a closed loop or other system to avoid exposure.
.
Use as a fuel
(closed systems)
(PROC 16)
Handle substance within a closed system.
.
Equipment cleaning and maintenance
(PROC 8a, PROC 28)
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Drain down and flush system prior to equipment break-in or maintenance.
-
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.
Wear suitable coveralls to prevent exposure to the skin.
Clear spills immediately.
.
Storage
(PROC 1, PROC 2)
Store substance within a closed system.

3. Exposure estimation (Environment 1)

Assessment method

Used Petrorisk model. (Hydrocarbon Block Method)

Risk-driving RCR - air compartment driven RCR(air) ≤ 0.86
Risk-driving RCR - water compartment driven RCR(water) ≤ 0.22

4. Guidance to check compliance with the exposure scenario (Environment 1)

Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

3. Exposure estimation (Health 1)

Assessment method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Use as a fuel - Industrial

4. Guidance to check compliance with the exposure scenario (Health 1)

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for carcinogenic effects. Available hazard data do not enable the derivation of a DNEL for aspiration effects. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation.

Exposure scenario
Use as a fuel - Professional

Identification

Product name	Gasoline (benzene 0 - 1 %)
CAS number	86290-81-5
Version number	2020
Es reference	ES12b (0-1%)

1. Title of exposure scenario

Main title	Use as a fuel - Professional
Process scope	Covers the use as a fuel (or fuel additives and additive components) within closed or contained systems, including incidental exposures during activities associated with its transfer, use, equipment maintenance and handling of waste.

Environment

Environmental release category	ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor)
SPERC	ESVOC SPERC 9.12b.v1

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC16 Use of fuels PROC28 Manual maintenance (cleaning and repair) of machinery

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 960 000 tonnes/year
Fraction of Regional tonnage used locally: 0.0005
Annual site tonnage: 480 tonnes
Maximum daily site tonnage: 1.3 tonnes

Frequency and duration of use

Continuous release.
Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.01
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.00001

Use as a fuel - Professional

Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0.00001

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100

Risk management measures

Good practice	Common practices vary across sites, thus conservative process release estimates used.
	Risk from environmental exposure is driven by humans via indirect exposure (primarily inhalation).
STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.5% Removal efficiency (total): 95.5% Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 33 tonne/day Assumed domestic sewage treatment plant flow (m³/day): 2000.

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air	Not applicable.
Water	No wastewater treatment required.
Soil	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment. External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method	This substance is consumed during use and no waste of the substance is generated.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	Vapour pressure > 10 kPa at STP.
Concentration details	Covers percentage substance in the product up to 100% (unless stated differently). Percentage of risk driving substance contained in product: < 1% (benzene)

Frequency and duration of use

	Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Setting	Assumes a good basic standard of occupational hygiene is implemented.
Temperature	Covers use at ambient temperatures. (unless stated differently)

Organisational measures to prevent/limit releases, dispersion and exposure

Use as a fuel - Professional

Organisational measures	General measures (skin irritants) Ensure there is no direct skin contact with product. Identify potential areas for indirect skin contact. Wear suitable gloves tested to EN374. Clear spills immediately. Wash off any skin contamination immediately. For further specification, refer to section 8 of the SDS. General measures (carcinogens) Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Access to work area only for authorized persons. Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training. Wear suitable coveralls to prevent exposure to the skin. Wear respiratory protection when its use is identified for certain contributing scenarios. For further specification, refer to section 8 of the SDS. Clear spills immediately. Dispose of this material and its container at hazardous or special waste collection point. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Ensure control measures are regularly inspected and maintained. Consider the need for risk based health surveillance. General measures (flammability) For measures to control risks from physicochemical properties, refer to main body of the SDS, section 7 and/or 8. General measures (aspiration hazard) Do not ingest. If swallowed, then seek immediate medical assistance.

Risk management measures

Bulk transfers
Dedicated facility
(PROC 8b)
Ensure material transfers are under containment or extract ventilation.
.
Drum/batch transfers
Dedicated facility
(PROC 8b)
Ensure material transfers are under containment or extract ventilation.
.
Refuelling
(PROC 8b)
Ensure material transfers are under containment or extract ventilation.
.
General exposures (closed systems)
(PROC 1, PROC 2)
Handle substance within a closed system.
Sample via a closed loop or other system to avoid exposure.
.
Use as a fuel
(closed systems)
(PROC 16)
Handle substance within a closed system.
.
Equipment cleaning and maintenance
(PROC 8a, PROC 28)
Covers use up to 4 h/day.
Drain down and flush system prior to equipment break-in or maintenance.
Wear a respirator conforming to EN140.
-
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.
Wear suitable coveralls to prevent exposure to the skin.
Clear spills immediately.
.
Storage
(PROC 1, PROC 2)
Store substance within a closed system.

3. Exposure estimation (Environment 1)

Assessment method

Used Petrorisk model. (Hydrocarbon Block Method)

Risk-driving RCR - air compartment driven RCR(air) ≤ 0.036
Risk-driving RCR - water compartment driven RCR(water) ≤ 0.018

4. Guidance to check compliance with the exposure scenario (Environment 1)

Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Use as a fuel - Professional

3. Exposure estimation (Health 1)

Assessment method	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

4. Guidance to check compliance with the exposure scenario (Health 1)

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for carcinogenic effects. Available hazard data do not enable the derivation of a DNEL for aspiration effects. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation.

Exposure scenario
Use as a fuel - Consumer

Identification

Product name	Gasoline (benzene 0 - 1 %)
CAS number	86290-81-5
Version number	2020
Es reference	ES12c (0-1%)

1. Title of exposure scenario

Main title	Use as a fuel - Consumer
Process scope	Covers consumer uses in liquid fuels.
Product category	PC13 Fuels.

Environment

Environmental release category	ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor)
SPERC	ESVOC SPERC 9.12c.v1

Non-industrial

Product sub-category	PC13_1 Liquid: automotive refuelling CONCAWE SCED 13.1.a PC13_2 Liquid: scooter refuelling ("recreational vehicles") CONCAWE SCED 13.7.a PC13_4 Liquid: Garden equipment - Refuelling CONCAWE SCED 13.4.a

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 8 200 000 tonnes/year
Fraction of Regional tonnage used locally: 0.0005
Annual site tonnage: 4 100 tonnes
Maximum daily site tonnage: 11 tonnes

Frequency and duration of use

Continuous release.
Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from wide dispersive use (regional only): 0.01
Emission factor - water	Release fraction to wastewater from wide dispersive use: 0.00001
Emission factor - soil	Release fraction to soil from wide dispersive use (regional only): 0.00001

Use as a fuel - Consumer

Environmental factors not influenced by risk management measures

Dilution

Local freshwater dilution factor: 10
Local marine water dilution factor: 100

Risk management measures

STP details

Not applicable as there is no release to wastewater.
Estimated substance removal from wastewater via domestic sewage treatment: 95.5%
Maximum allowable site tonnage (Msafe): 280 tonne/day
Assumed domestic sewage treatment plant flow (m³/day):
2000.

Conditions and measures related to external treatment of waste for disposal

Disposal method

Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment. External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method

This substance is consumed during use and no waste of the substance is generated.

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state

Liquid

Concentration details

Covers concentrations up to 100 %.

PC13_1 Liquid: automotive refuelling PC13_2 Liquid: scooter refuelling
Percentage of risk driving substance contained in product: < 1% (benzene)

PC13_4 Liquid: Garden equipment - Refuelling
Percentage of risk driving substance contained in product: < 0,1% (benzene)
Percentage of risk driving substance contained in product: < 3% (n-hexane)
Percentage of risk driving substance contained in product: < 3% (toluene)

Amounts used

PC13_1 Liquid: automotive refuelling
For each use event, covers use amounts up to 37.5 kg.
.
PC13_2 Liquid: scooter refuelling
For each use event, covers use amounts up to 7.5 kg.
.
PC13_4 Liquid: Garden equipment - Refuelling
For each use event, covers use amounts up to 750 g.

Frequency and duration of use

Covers use up to 1 time(s)/day.
.
PC13_1 Liquid: automotive refuelling
Covers exposure up to 0.05 hours per event.
.
PC13_2 Liquid: scooter refuelling
Covers exposure up to 0.017 hours per event.
.
PC13_4 Liquid: Garden equipment - Refuelling
Covers exposure up to 0.033 hours per event.

Use as a fuel - Consumer

Human factors not influenced by risk management

Potentially exposed body parts	PC13_1 Liquid: automotive refuelling , PC13_2 Liquid: scooter refuelling : Assumes that potential dermal contact is limited to palm of one hand. PC13_4 Liquid: Garden equipment - Refuelling : Assumes that potential dermal contact is limited to inside hands/one hand/palm of hands.

Other given operational conditions affecting Non-industrial exposure

Setting	PC13_1 Liquid: automotive refuelling , PC13_2 Liquid: scooter refuelling : Covers outdoor use.

Other given operational conditions affecting Non-industrial exposure

General measures (skin irritants) Ensure there is no direct skin contact with product. Wash off any skin contamination immediately.

General measures (flammability) For measures to control risks from physicochemical properties, refer to main body of the SDS, section 7 and/or 8.

General measures (aspiration hazard) Do not ingest. If swallowed, then seek immediate medical assistance.

3. Exposure estimation (Environment 1)

Assessment method	Used Petrorisk model. (Hydrocarbon Block Method)
	Risk-driving RCR - air compartment driven RCR(air) ≤ 0.036 Risk-driving RCR - water compartment driven RCR(water) ≤ 0.018

4. Guidance to check compliance with the exposure scenario (Environment 1)

Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures.

3. Exposure estimation (Health 1)

Assessment method	The ECETOC TRA tool has been used to estimate consumer exposures, unless otherwise indicated.

4. Guidance to check compliance with the exposure scenario (Health 1)

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Available hazard data do not enable the derivation of a DNEL for carcinogenic effects. Available hazard data do not enable the derivation of a DNEL for aspiration effects. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation.