SAFETY DATA SHEET

Gasoline MK1 93.5, 95, 96, 98 (CAS 86290-81-5)

The safety data sheet is in accordance with Commission Regulation (EU) 2020/878 of 18 June 2020 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

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

Date issued	18.09.2019
Revision date	30.12.2022

1.1. Product identifier

Product name	Gasoline MK1 93.5, 95, 96, 98 (CAS 86290-81-5)
Synonyms	Bensin 93.5/95/98 MK1 E5, E5 base, V-power, BF95, BF98, UMS, ULG, BF95E10, Gasoline Norway E5
Extended SDS with ES incorporated	Yes
Extended SDS with ES incorporated, comments	See attachment(-s) in section 16.

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

Product group	Fuel
Use of the substance / mixture	Fuel for gasoline engines Manufacture of substance, Industrial Use of substance as intermediate, Industrial Formulation & (re)packing of substances and mixtures, industrial Use as a fuel, industrial Use as a fuel, professional Use as a fuel, consumer
Uses advised against	Applications that are not registered and risk assessed.

1.3. Details of the supplier of the safety data sheet

Company name	St1 Sverige AB
Postal address	Box 11057
Postcode	SE-161 11
City	Bromma
Country	Sweden

Telephone number	+46 (0) 31 744 6000
Email	Supply-Sweden@st1.se
Website	www.st1.se

1.4. Emergency telephone number

Emergency telephone	Telephone number: 111 (NHS) Description: For poisoning emergencies (UK) Telephone number: 112 Description: Within Sweden: Ask for Poison Information

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP / GHS]	Flam. Liq. 1; H224 Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 3; H336 Muta. 1B; H340 Carc. 1B; H350 Repr. 2; H361fd Aquatic Chronic 2; H411
Substance / mixture hazardous properties	Extremely flammable liquid and vapour. May be fatal if swallowed and enters airways. Causes skin irritation. May cause drowsiness or dizziness. May cause genetic defects . May cause cancer. Suspected of damaging fertility or the unborn child. Toxic to aquatic life with long lasting effects.

2.2. Label elements

Hazard pictograms (CLP)

Composition on the label	Gasoline, Hydrocarbons (naphtha type fraction)
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 .
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P201 Obtain special instructions before use.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 Wear protective gloves / protective clothing / eye protection / face protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician. P331 Do NOT induce vomiting.
P308+P313 IF exposed or concerned: Get medical advice / attention.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P501 Dispose of contents / container to an approved waste disposal plant.

2.3. Other hazards

PBT / vPvB

The chemical contains no PBT or vPvB substances ≥ 0,1%.

Physicochemical effects

Static accumulator: This product may accumulate static electricity.
Liquid evaporates quickly and may ignite, leading to a flash fire or an explosion in a confined space.
The vapours are heavier than air and will spread along the floor. Can form explosive gas-air mixtures.

Health effect

Parts of the chemical might be absorbed through the skin.
If, by vomitting, the chemical reaches the lungs, life-threatening chemical pneumonia may develop.

Other hazards

MTBE CAS 1634-04-4 is listed on ECHA's Endocrine disruptor assessment list.
Status "Concluded" outcome: inconclusive

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Substance	Identification	Classification	Contents	Notes
Gasoline	CAS No.: 86290-81-5 EC No.: 289-220-8 REACH Reg. No.: 01-2119471335-39	Flam. Liq. 1; H224 Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 3; H336 Muta. 1B; H340 Carc. 1B; H350 Repr. 2; H361fd Aquatic Chronic 2; H411	> 80 %	
MTBE	CAS No.: 1634-04-4 EC No.: 216-653-1 REACH Reg. No.:	Flam. Liq. 2; H225 Skin Irrit. 2; H315	0 - 22 %	

	01-2119452786-27		
ETBE	CAS No.: 637-92-3 EC No.: 211-309-7 REACH Reg. No.: 01-2119452785-29	Flam. Liq. 2; H225 STOT SE 3; H336	0 - 22 %
Hydrocarbons (naphtha type fraction)	EC No.: 700-918-8 REACH Reg. No.: 01-2120052681-60	Flam. Liq. 2; H225 Skin Irrit. 2; H315 Asp. Tox. 1; H304 Repr. 2; H361 Muta. 1B; H340 Carc. 1B; H350 STOT SE 3; H336 Aquatic Chronic 2; H411	< 10 %
Toluene	CAS No.: 108-88-3 EC No.: 203-625-9 Index No.: 601-021-00-3	Flam. Liq. 2; H225; Repr. 2; H361d; Asp. tox. 1; H304; STOT RE 2; H373; Skin Irrit. 2; H315; STOT SE 3; H336;	< 10 %
Ethanol	CAS No.: 64-17-5 EC No.: 200-578-6 Index No.: 603-002-00-5 REACH Reg. No.: 01-2119457610-43	Flam. Liq. 2; H225; Eye Irrit. 2; H319;	≤ 10 %
2-Methoxy-2-methylbutane	CAS No.: 994-05-8 EC No.: 213-611-4 REACH Reg. No.: 01-2119453236-41	Flam. Liq. 2; H225 Acute Tox. 4; H302 STOT SE 3; H336	< 5 %
n-Hexane	CAS No.: 110-54-3 EC No.: 203-777-6 Index No.: 601-037-00-0	Flam. Liq. 2; H225; Repr. 2; H361f; Asp. tox. 1; H304; STOT RE 2; H373; Skin Irrit. 2; H315; STOT SE 3; H336; Aquatic Chronic 2; H411;	< 5 %
Benzene	CAS No.: 71-43-2 EC No.: 200-753-7 Index No.: 601-020-00-8	Flam. Liq. 2; H225; Carc. 1A; H350; Muta. 1B; H340; STOT RE 1; H372;	< 1 %

		Asp. tox. 1; H304; Eye Irrit. 2; H319; Skin Irrit. 2; H315;	
Methanol	CAS No.: 67-56-1 EC No.: 200-659-6 Index No.: 603-001-00-X	Flam. Liq. 2; H225; Acute tox. 3; H331; Acute tox. 3; H311; Acute tox. 3; H301; STOT SE 1; H370;	≤ 0,2 %

Description of the mixture Complex mixture of hydrocarbons, mainly consisting of paraffins, cycloparaffins, aromatic hydrocarbons and olefins, in particular higher than C3, with an approximate boiling point range from 25 °C to 205 °C.

Remarks, substance Gasoline (CAS 86290-81-5) is a complex UVCB substance which includes toluene, n-hexane, benzene and methanol.
The REACH registration for gasoline (CAS 86290-81-5) includes the toluene, n-hexane, benzene and methanol listed in the table above, therefore these substances do not need to be registered separately.
LD50 oral: > 5000 mg/kg
LC50 inhalation: > 5610 mg/m³
LD50 dermal: > 2000 mg/kg

Substance comments See section 16 for explanation of hazard statements (H) listed above.

SECTION 4: First aid measures

4.1. Description of first aid measures

General Emergency telephone number: see section 1.4. If medical advice is needed, have safety data sheet or label available at hand.

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.
When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. If breathing stops, provide artificial respiration.

Skin contact Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Wash skin with soap and water. If skin irritation or rash occurs: Get medical advice/ attention.

Eye contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Ingestion Rinse mouth thoroughly. DO NOT induce vomiting if swallowed chemical is dissolved in petroleum-based material. Danger of aspiration and development of chemical pneumonia. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention immediately!

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

Acute symptoms and effects Inhalation: Solvent vapors may be harmful and overexposure may cause headaches, nausea, vomiting, and intoxication. Auditory system effects may

	include temporary hearing loss and/or ringing in the ears. Skin contact: The chemical irritates the skin and can cause itching, burning and redness. Penetrates the skin and in casaes of extensive skin contact, the same symptoms as at inhalation can occur. Eye contact: Spray and vapor may cause burning in the eyes. May cause temporary eye irritation. Ingestion: Poisoning symptoms such as headaches, fatigue, shortness of breath may occur. Symptoms such as coughing, breathing difficulties, vomiting or lethargy may indicate chemical pneumonitis.
Delayed symptoms and effects	Symptoms of chemical pneumonia may occur within 24 hours of difficulty breathing and coughing. Suspected of damaging fertility or the unborn child.

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

Medical monitoring for delayed effects	Delayed effects, such as symptoms of chemical pneumonia after aspiration, should be medically monitored.
Other information	Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	In case of major fire and large quantities: Foam. Water spray, fog or mist. Small fires: Powder. Carbon dioxide (CO_2). Sand or earth are suitable in small fires.
Improper extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

5.2. Special hazards arising from the substance or mixture

Fire and explosion hazards	Extremely flammable liquid and vapour. Static accumulator: This product may accumulate static electricity. Can form explosive gas-air mixtures. Vapours are heavier than air and may spread near ground to sources of ignition. May travel considerable distance to source of ignition and flash back. The product floats and can be reignited to burn on water surface.
Hazardous combustion products	May include, but is not limited to: Carbon dioxide (CO_2). Carbon monoxide (CO). Hydrocarbons. Unspecified organic compounds.

5.3. Advice for firefighters

Personal protective equipment	Firefighters who may be exposed to smoke or thermal decomposition products shall wear all available personal protective equipment (PPE) and SCBA mask.
Other information	If there is no risk involved, move the containers to a safe place. If not possible, cool with water from a safe position. Extinguishing water must not be discharged into drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures

Evacuate area. Provide adequate ventilation.
Stop leak if safe to do so. Eliminate all ignition sources if safe to do so.
If spill is large contact fire department immediately, dial 999 or 112.

Personal protection measures

Avoid inhalation of vapours and contact with skin and eyes. Use protective equipment as referred to in section 8.

6.2. Environmental precautions

Environmental precautionary measures

Do not allow to enter into sewer, water system or soil.
Immediately notify the local authorities about any damage.
Maritime spillages should be dealt with using a Shipboard Oil Pollution Emergency Plan (SOPEP), as required by MARPOL Annex 1 Regulation 26.

6.3. Methods and material for containment and cleaning up

Clean up

Remove ignition sources and work with non-sparking tools.
Small Spillages:
Collect with absorbent, non-combustible material into suitable containers.
Proposals for inert materials: sand, kieselguhr, universal binder.
Collect in a suitable container and dispose as hazardous waste according to section 13.
Large Spillages:
For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water.

6.4. Reference to other sections

Other instructions

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling

Provide adequate ventilation. Local exhaust is recommended.
Avoid inhalation of vapours and contact with skin and eyes. Use protective equipment as referred to in section 8.
Persons in their child bearing years must be informed about the adverse side effects of the Chemical. Pregnant women should not work with the product, if there is the least risk of exposure.
Risk for slippery floors and tools if spilled out. Risk of vapour concentration on the floor and in low-lying areas.

Protective safety measures

Safety measures to prevent fire

Smoking and naked flames and other ignition sources are prohibited.
Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat

or sources of ignition.
Take precautionary measures against static discharges.
Ground / bond container and receiving equipment.
Use only non-sparking tools.
Use explosion-proof electrical / ventilating / lighting / / equipment.

Advice on general occupational hygiene

Do not eat, drink or smoke during work. Wash hands at the end of each work shift and before eating, smoking and using the toilet. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage

Storage in drums and in small containers:
Use approved containers. Store in tightly closed container in a well-ventilated place. Keep cool.
Tank storage:
Tanks must be specifically designed for use with this product. Bulk storage tanks should be diked (bunded).
Store protected against heat and direct sunlight. Follow rules for flammable liquids.

Conditions for safe storage

Packaging compatibilities

Recommended materials:
For containers, or container linings use mild steel, stainless steel. Examples of suitable materials are: high density polyethylene (HDPE), polypropylene (PP), and Viton (FKM), which have been specifically tested for compatibility with this product. For container linings, use amine-adduct cured epoxy paint. For seals and gaskets use: graphite, PTFE, Viton A, Viton B.

Unsuitable materials:
Some synthetic materials may be unsuitable for containers or container linings depending on the material specification and intended use. Examples of materials to avoid are: natural rubber (NR), nitrile rubber (NBR), ethylene propylene rubber (EPDM), polymethyl methacrylate (PMMA), polystyrene, polyvinyl chloride (PVC), and polyisobutylene. However, some may be suitable for glove materials.

Advice on storage compatability

Keep away from:
Strong oxidizing agents. Food and feed.

7.3. Specific end use(s)

Specific use(s)

See section 1.2. See exposure scenario.

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Substance	Identification	Exposure limits	TWA Year
tert-Butyl methyl ether	CAS No.: 1634-04-4	Limit value (8 h) : 50 ppm Limit value (8 h) : 183,5 mg/	

		m³ **Limit value (short term)** Value: 100 ppm **Limit value (short term)** Value: 367 mg/m³
Toluene	CAS No.: 108-88-3	Limit value (8 h) : 50 ppm Limit value (8 h) : 191 mg/m³ **Limit value (short term)** Value: 100 ppm **Limit value (short term)** Value: 384 mg/m³ **Exposure limit letter** Letter code: Sk
Ethanol	CAS No.: 64-17-5	Limit value (8 h) : 500 ppm Limit value (8 h) : 950 mg/m³
2-Methoxy-2-methylbutane	CAS No.: 994-05-8	Limit value (8 h) : 20 ppm Limit value (8 h) : 84 mg/m³
n-Hexane	CAS No.: 110-54-3	Limit value (8 h) : 20 ppm Limit value (8 h) : 72 mg/m³
Benzene	CAS No.: 71-43-2	Limit value (8 h) : 1 ppm Limit value (8 h) : 3,25 mg/m³ **Exposure limit letter** Letter code: Sk; Carc
Methanol	CAS No.: 67-56-1	Limit value (8 h) : 200 ppm Limit value (8 h) : 266 mg/m³ **Limit value (short term)** Value: 250 ppm **Limit value (short term)** Value: 333 mg/m³ **Exposure limit letter** Letter code: Sk

Other Information about threshold limit values

Gasoline, low boiling point naphtha has an occupational exposure limits value in Sweden: 250 mg/m³ (8h).
Explanation of the notations:
Carc = Capable of causing cancer and/or heritable genetic damage.
Sk = Can be absorbed through the skin.

References (laws/regulations): EH40/2005 Workplace exposure limits, with later amendments.

DNEL / PNEC

DNEL	Comments: No data available
PNEC	Comments: No data available
DMEL	Comments: No data available

8.2. Exposure controls

Precautionary measures to prevent exposure

Technical measures to prevent exposure	Provide adequate ventilation. Observe Occupational Exposure Limits and minimise the risk of inhalation of vapours. Local exhaust ventilation is recommended, but adequate general ventilation may be sufficient. Explosion-proof general and local exhaust ventilation. The personal protective equipment must be CE-marked and the latest version of the standards shall be used. The protective equipment and the specified standards recommended below are only suggestions, and should be selected on advice from the supplier of such equipment. A risk assessment of the work place/work activities (the actual risk) may lead to other control measures. The protection equipment's suitability and durability will depend on application.

Eye / face protection

Eye protection equipment	Description: Wear approved chemical safety goggles where eye exposure is reasonably probable. Reference to relevant standard: EN ISO 16321-1:2022 (Eye and face protection for occupational use - Part 1: General requirements).
Additional eye protection measures	Eye wash facilities should be available at the work place. Either a fixed eye wash facility connected to the drinking water (preferably warm water) or a portable disposable unit.

Hand protection

Suitable materials	Nitrile. For incidental contact/splash protection, Neoprene, PVC gloves may be suitable.
Breakthrough time	Comments: Nitrile: > 240 minutes.
Thickness of glove material	Comments: Glove thickness must be chosen in consultation with the glove supplier.
Hand protection equipment	Description: Use protective gloves that are suitable for the application. The gloves abilities may vary among the different glove manufacturers. Reference to relevant standard: EN ISO 374 (Protective gloves against chemicals and micro-organisms). EN ISO 21420:2020 (Protective gloves - General requirements and test methods).
Additional hand protection measures	Gloves must only be worn on clean, dry hands. Wash promptly with soap & water if skin becomes contaminated.

Skin protection

Recommended protective clothing	Description: Where risk of splashing: Wear impervious protective clothing, gloves, apron and boots.
Additional skin protection measures	Emergency shower should be available at the workplace. Remove contaminated clothing and wash the skin thoroughly with soap and water after work. Wash contaminated clothing before reuse.

Respiratory protection

Recommended respiratory protection	Description: In case of insufficient ventilation, use respirator with A filter against solvent vapors. At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. Reference to relevant standard: EN 14387 (Respiratory protective devices. Gas filter(s) and combined filter(s). Requirements, testing, marking).

Appropriate environmental exposure control

Environmental exposure controls	Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour. Do not allow to enter into sewer, water system or soil.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Colour	Clear / Colourless to pale yellow.
Odour	Hydrocarbon.
Odour limit	Comments: Data lacking.
pH	Comments: Not relevant.
Melting point / melting range	Value: < -60 °C
Boiling point / boiling range	Value: 25 - 205 °C
Flash point	Value: ≤ -40 °C
Flammability	Extremely flammable.
Explosion limit	Value: 1 - 8 vol%
Vapour pressure	Value: 45 - 95 kPa Temperature: 37,8 °C
Vapour density	Value: > 1 Comments: Air=1.
Particle characteristics	Comments: Not relevant for liquids.
Density	Value: 720 -775 kg/m³ Temperature: 15 °C

Solubility	Comments: Data lacking.
Partition coefficient: n-octanol/ water	Comments: Data lacking.
Auto-ignition temperature	Value: > 250 °C
Decomposition temperature	Comments: Data lacking.
Viscosity	Value: < 1 mm2/s Temperature: 40 °C Type: Kinematic

9.2. Other information

Physical hazards

Oxidising liquids	Assessment: Not oxidizing.

9.2.2. Other safety characteristics

Evaporation rate	Data lacking.
Conductivity	Comments: < 100 pS/m

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	Under normal condtions and use there are not expected any reactivity hazards for this chemical.

10.2. Chemical stability

Stability	Stable under normal temperature conditions and recommended use.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Arise in contact with incompatible materials (see section 10.5) and/or under inappropriate conditions (see section 10.4). Reacts violently with strong oxidizing components. Can form explosive gas-air mixtures.

10.4. Conditions to avoid

Conditions to avoid	Heat, sparks or open flame. Take precautionary measures against static discharge.

10.5. Incompatible materials

Materials to avoid	Strong oxidizing agents.

10.6. Hazardous decomposition products

Hazardous decomposition products	None under normal conditions. See also section 5.2.

SECTION 11: Toxicological information

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

Substance	Gasoline
Acute toxicity	**Effect tested:** LD50 **Route of exposure:** Oral **Value:** > 5000 mg/kg **Animal test species:** Rat **Test reference:** OECD 401 **Effect tested:** LC50 **Route of exposure:** Inhalation. **Value:** > 5610 mg/m³ **Animal test species:** Rat **Test reference:** OECD 403 **Effect tested:** LD50 **Route of exposure:** Dermal **Value:** > 2000 mg/kg **Animal test species:** Rabbit **Test reference:** OECD 402
Substance	MTBE
Acute toxicity	**Effect tested:** LD50 **Route of exposure:** Oral **Value:** > 2000 mg/kg **Animal test species:** Rat **Effect tested:** LC50 **Route of exposure:** Inhalation. **Duration:** 4 hour(s) **Value:** > 5000 mg/m³ **Animal test species:** Rat **Effect tested:** LD50 **Route of exposure:** Dermal **Value:** > 2000 mg/kg **Animal test species:** Rabbit
Substance	ETBE
Acute toxicity	**Effect tested:** LD50 **Route of exposure:** Oral **Value:** > 2000 mg/kg
Substance	Hydrocarbons (naphtha type fraction)
Acute toxicity	**Effect tested:** LD50 **Route of exposure:** Oral **Duration:** 24 hour(s) **Value:** > 2000 mg/kg **Animal test species:** Rat **Test reference:** OECD 420

	Effect tested: LC50 **Route of exposure:** Inhalation. **Duration:** 8 hour(s) **Value:** 23 400 mg/m³ **Animal test species:** Rat **Effect tested:** LD50 **Route of exposure:** Dermal **Duration:** 24 hour(s) **Value:** 2920 mg/kg **Animal test species:** Rabbit
Substance	2-Methoxy-2-methylbutane
Acute toxicity	**Effect tested:** LD50 **Route of exposure:** Oral **Value:** 1602 - 2417 mg/kg **Animal test species:** Rat **Test reference:** OECD 401 **Effect tested:** LC50 **Route of exposure:** Inhalation. **Duration:** 4 hour(s) **Value:** > 5400 mg/m³ **Animal test species:** Rat **Test reference:** OECD 403 **Effect tested:** LD50 **Route of exposure:** Dermal **Value:** > 2000 mg/kg **Animal test species:** Rabbit **Test reference:** OECD 402

Other information regarding health hazards

Assessment of acute toxicity, classification	Based on available data, the classification criteria are not met.
Assessment of skin corrosion / irritation, classification	Irritating to skin.
Assessment of eye damage or irritation, classification	Based on available data, the classification criteria are not met.
Assessment of respiratory sensitisation, classification	Based on available data, the classification criteria are not met.
Assessment of skin sensitisation, classification	Based on available data, the classification criteria are not met.
Assessment of germ cell mutagenicity, classification	May cause genetic defects . Mutagenicity studies on gasoline and gasoline blending streams have shown predominantly negative result.
Assessment of carcinogenicity, classification	May cause cancer. Contains benzene (CAS 71-43-2), known human carcinogen. Benzene may cause leukaemia (AML - acute myelogenous leukemia).
Reproductive toxicity	Causes birth defects at doses which are maternally toxic. Many case studies involving abuse during pregnancy indicate that toluene can cause birth defects,

	growth retardation and learning disabilities (Toluene).
Assessment of reproductive toxicity, classification	Suspected of damaging fertility or the unborn child.
Assessment of specific target organ toxicity - single exposure, classification	May cause drowsiness or dizziness. Classification: STOT SE 3: H336.
Assessment of specific target organ toxicity - repeated exposure, classification	Based on available data, the classification criteria are not met.
Assessment of aspiration hazard, classification	May be fatal if swallowed and enters airways.

Symptoms of exposure

In case of ingestion	Ingestion may cause the same symptoms as by inhalation. Symptoms such as coughing, breathing difficulties, vomiting or lethargy may indicate chemical pneumonitis.
In case of skin contact	The chemical irritates the skin and can cause itching, burning and redness. Absorption through the skin will give similar symptoms as for inhalation.
In case of inhalation	Solvent vapors may be harmful and overexposure may cause headaches, nausea, vomiting, and intoxication. Auditory system effects may include temporary hearing loss and/or ringing in the ears.
In case of eye contact	May cause temporary eye irritation. May cause stinging and redness.

11.2 Other information

Endocrine disruption	MTBE CAS 1634-04-4 is listed on ECHA's Endocrine disruptor assessment list. Status "Concluded" outcome: inconclusive

SECTION 12: Ecological information

12.1. Toxicity

Substance	Gasoline
Aquatic toxicity, fish	**Value:** 8,2 mg/l **Effect dose concentration:** LL50 **Exposure time:** 96 hour(s) **Comments:** Gasoline hydrocarbons.
Substance	MTBE
Aquatic toxicity, fish	**Value:** 574 mg/l **Effect dose concentration:** LC50 **Exposure time:** 96 hour(s) **Value:** 299 mg/l **Effect dose concentration:** NOEC **Exposure time:** 31 day(s)
Substance	ETBE
Aquatic toxicity, fish	**Value:** 574 mg/l

	Effect dose concentration: LC50 **Exposure time:** 96 hour(s) **Value:** 299 mg/l **Effect dose concentration:** NOEC **Exposure time:** 31 day(s)
Substance	Hydrocarbons (naphtha type fraction)
Aquatic toxicity, fish	**Value:** 10 mg/l **Effect dose concentration:** LL50 **Exposure time:** 96 hour(s) **Test reference:** OECD 203
Substance	2-Methoxy-2-methylbutane
Aquatic toxicity, fish	**Value:** 574 mg/l **Effect dose concentration:** LC50 **Exposure time:** 96 hour(s) **Value:** 279 mg/l **Exposure time:** 31 day(s) **Comments:** Effect dose concentration: IC20 **Value:** 308 mg/l **Exposure time:** 31 day(s) **Comments:** Effect dose concentration: IC25
Substance	Gasoline
Aquatic toxicity, algae	**Value:** 3,7 mg/l **Effect dose concentration:** EL50 **Exposure time:** 96 hour(s) **Comments:** Gasoline hydrocarbons. **Value:** 0,5 mg/l **Exposure time:** 72 hour(s) **Comments:** Effect dose concentration: NOELR Gasoline hydrocarbons.
Substance	MTBE
Aquatic toxicity, algae	**Value:** 491 mg/l **Effect dose concentration:** LC50 **Exposure time:** 96 hour(s) **Value:** 105 mg/l **Exposure time:** 96 hour(s) **Comments:** Effect dose concentration: IC20
Substance	ETBE
Aquatic toxicity, algae	**Value:** 1100 mg/l **Effect dose concentration:** EC50 **Exposure time:** 72 hour(s) **Value:** 7,5 mg/l **Effect dose concentration:** NOEC **Exposure time:** 72 hour(s)
Substance	Hydrocarbons (naphtha type fraction)

Aquatic toxicity, algae	**Value:** > 100 mg/l **Effect dose concentration:** EL50 **Exposure time:** 72 hour(s)
Substance	2-Methoxy-2-methylbutane
Aquatic toxicity, algae	**Value:** 230 mg/l **Effect dose concentration:** EC50 **Exposure time:** 72 hour(s) **Value:** 77 mg/l **Effect dose concentration:** NOEC **Exposure time:** 72 hour(s)
Aquatic toxicity, crustacean	Value: 4,5 mg/l Effect dose concentration: EL50 Test duration: 48 hour(s) Species: Daphnia magna Comments: Applies to CAS 86290-81-5. Source: REACH dossier information.
Substance	Gasoline
Aquatic toxicity, crustacean	**Value:** 4,5 mg/l **Effect dose concentration:** EL50 **Exposure time:** 48 hour(s) **Comments:** Gasoline hydrocarbons. **Value:** 10 mg/l **Effect dose concentration:** EL50 **Exposure time:** 21 day(s) **Comments:** Gasoline hydrocarbons. **Value:** 0,5 mg/l **Exposure time:** 48 hour(s) **Comments:** Effect dose concentration: NOELR Gasoline hydrocarbons.
Substance	MTBE
Aquatic toxicity, crustacean	**Value:** 44 mg/l **Effect dose concentration:** LC50 **Exposure time:** 96 hour(s) **Value:** 26 mg/l **Effect dose concentration:** NOEC **Exposure time:** 28 day(s) **Value:** 50 mg/l **Effect dose concentration:** LOEC **Exposure time:** 28 day(s)
Substance	ETBE
Aquatic toxicity, crustacean	**Value:** 37 mg/l **Effect dose concentration:** EC50 **Exposure time:** 96 hour(s) **Value:** 3,4 mg/l **Effect dose concentration:** NOEC **Exposure time:** 28 day(s)

Substance	Hydrocarbons (naphtha type fraction)
Aquatic toxicity, crustacean	**Value:** 7,6 mg/l **Effect dose concentration:** EL50 **Exposure time:** 48 hour(s) **Test reference:** OECD 202
Substance	2-Methoxy-2-methylbutane
Aquatic toxicity, crustacean	**Value:** 14 mg/l **Effect dose concentration:** LC50 **Exposure time:** 96 hour(s) **Value:** 3,4 mg/l **Effect dose concentration:** NOEC **Exposure time:** 28 day(s)
Substance	Gasoline
Impact on sewage treatment	**Value:** 15,4 mg/l **Effect dose concentration:** EC50 **Exposure time:** 40 hour(s) **Comments:** Toxicity to micro-organisms (sludge).
Substance	MTBE
Impact on sewage treatment	**Value:** 710 mg/l **Effect dose concentration:** EC10 **Exposure time:** 18 hour(s) **Comments:** Toxicity to micro-organisms.
Substance	ETBE
Impact on sewage treatment	**Value:** 510 mg/l **Effect dose concentration:** EC50 **Exposure time:** 16 hour(s) **Comments:** Toxicity to micro-organisms (sludge). **Value:** 78 mg/l **Effect dose concentration:** NOEC **Exposure time:** 16 hour(s) **Comments:** Toxicity to micro-organisms (sludge).
Substance	Hydrocarbons (naphtha type fraction)
Impact on sewage treatment	**Value:** 34,78 mg/l **Effect dose concentration:** EL10 **Exposure time:** 3 hour(s) **Comments:** Toxicity to micro-organisms (sludge).
Substance	2-Methoxy-2-methylbutane
Impact on sewage treatment	**Value:** 510 mg/l **Effect dose concentration:** EC50 **Exposure time:** 16 hour(s) **Comments:** Toxicity to micro-organisms (sludge). **Value:** 78 mg/l **Effect dose concentration:** NOEC **Exposure time:** 16 hour(s) **Comments:** Toxicity to micro-organisms (sludge).

Ecotoxicity Toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

Persistence and degradability, comments Expected to be inherently biodegradable.
Volatile solvents are rapidly oxidized by photochemical reaction in air.

12.3. Bioaccumulative potential

Bioaccumulative potential Contains components which have bioaccumulative potential.

12.4. Mobility in soil

Mobility Floats on water.
May contaminate soil and groundwater.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB.

12.6. Endocrine disrupting properties

Endocrine disrupting properties MTBE CAS 1634-04-4 is listed on ECHA's Endocrine disruptor assessment list.
Status "Concluded" outcome: inconclusive

12.7. Other adverse effects

Additional ecological information Forms an oil film on water surfaces that may harm organisms in the water and disrupt oxygen transport in the boundary layer between air and water.
Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Appropriate methods of disposal for the chemical Do not empty into drains. Recover and reclaim or recycle, if practical.
In companies with suitable equipment, waste with solvents may be redistilled for renewed use of the solvents.
Do not mix with halogenated waste.
Disposed of as hazardous waste by approved contractor. The waste code (EWC-Code) is intented as a guide. The code must be chosen by the user, if the use differs from the one mentioned below.

Appropriate methods of disposal for the contaminated packaging Container disposal:
Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not, puncture, cut, or weld uncleaned drums. Send to drum recoverer or metal reclaimer. Do not pollute the soil, water or environment with the waste container.

EWC waste code EWC waste code: 130702 petrol
Classified as hazardous waste: Yes

SECTION 14: Transport information

Dangerous goods	Yes

14.1. UN number

ADR/RID/ADN	1203
IMDG	1203
ICAO/IATA	1203

14.2. UN proper shipping name

Proper shipping name English ADR/RID/ADN	GASOLINE
ADR/RID/ADN	GASOLINE
IMDG	GASOLINE
ICAO/IATA	GASOLINE

14.3. Transport hazard class(es)

ADR/RID/ADN	3
Classificaton code ADR/RID/ADN	F1
IMDG	3
ICAO/IATA	3

14.4. Packing group

ADR/RID/ADN	II
IMDG	II
ICAO/IATA	II

14.5. Environmental hazards

IMDG Marine pollutant	Yes

14.6. Special precautions for user

Special safety precautions for user	Not allowed to be transported on passenger ships. Not allowed to be loaded with packages labeled with orange label, ie 1, 1.4, 1.5 and 1.6.

14.7. Maritime transport in bulk according to IMO instruments

Product name	GASOLINE

Additional information

Hazard label ADR/RID/ADN	3

Hazard label IMDG	3
Hazard label ICAO/IATA	3
Additional information	MARPOL 73/78 Annex I rules apply for bulk shipments by sea. MARPOL 73/78 Annex II not applicable.

ADR/RID Other information

Tunnel restriction code	D/E
Transport category	2
Hazard No.	33

IMDG Other information

EmS	F-E, S-E

SECTION 15: Regulatory information

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

Nanomaterial	No
References (laws/regulations)	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP-regulation) with later amendments. Regulation (EC) No 1907/2006 on the registration, evaluation, authorization and restriction of chemicals (REACH Regulation), with later amendments. The List of Wastes (England) (Amendment) Regulations 2005. (SI 2005 No. 895). The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009. Council Directive 96/82/EC of 9 December 1996 on the control of major-accident hazards involving dangerous substances (Seveso II), with later amendments.

15.2. Chemical safety assessment

Chemical safety assessment	Chemical safety assessment has been performed for the following ingredients: Gasoline (CAS 86290-81-5)

SECTION 16: Other information

Supplier's notes	The information contained in this SDS must be made available to all those who handle the product.
List of relevant H-phrases (Section 2 and 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 H350 May cause cancer . H361d Suspected of damaging the unborn child. H361fd Suspected of damaging fertility. Suspected of damaging the unborn child. H361f Suspected of damaging fertility. H361 Suspected of damaging fertility or 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.
Key literature references and sources for data	The Safety Data Sheet is based on information provided by the producer.
Abbreviations and acronyms used	ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road DNEL: Derived No Effect Level EWC: European Waste Code (a code from the EU's common classification system for waste) EC50: The effective concentration of substance that causes 50% of the maximum response EL50: The effective concentration of substance (slightly soluble) that causes 50% of the maximum response. IATA: The International Air Transport Association ICAO: The International Civil Aviation Organisation IMDG: The International Maritime Dangerous Goods Code LC50: Median concentration lethal to 50% of a test population. LD50: Lethal dose, is the amount of a substance given to a group of test animals, which causes the death of 50%. LL50: Lethal level: loading rate that kills 50% of exposed organisms. Log Pow: Partition coefficient: n-octanol / water NOEC: No Observable Effect Concentration. NOELR: No Observable Effect Loading Rate. OECD: Organisation for Economic Cooperation and Development. PBT: Persistent, Bioaccumulative and Toxic PNEC: Predicted No Effect Concentration RID: The Regulations concerning the International Carriage of Dangerous Goods by Rail UVCB substances: substances of Unknown or Variable composition, Complex reaction products or Biological materials. vPvB: very Persistent and very Bioaccumulative
Information added, deleted or revised	Relevant changes compared to the previous version of the safety data sheet are indicated with verticle lines in the left margin.
Version	7
Prepared by	Kiwa Technical Consulting AB v/ Milvi Rohtla
Exposure scenario	Manufacture of substance.pdf Use of substance as intermediate.pdf Formulation & (re)packing of substances and mixtures.pdf Use in fuel, industrial.pdf

Use in fuel, professional.pdf
Use in fuel, consumer.pdf