

	UNLEADED PETROL SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006 (REACH), as amended, and Commission Regulation (EU) No. 2020/878	Valid Issue: 31. 07. 2026 – version 11(0)–B
		Revision: 31. 07. 2026 – version 11(0)–B Replaces: 24. 04. 2023 – version 10(1) First issue: 10. 12. 1999

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

General name:	Unleaded automotive petrol
Trade names:	Efecta 95, Verva 100
Official names:	BA 95 Super (E10), BA 98 Super Plus (E10)
Substance / mixture:	mixture
REACH registration No.:	Not applicable for mixtures
Index number:	Not applicable for mixtures
CAS number:	Not applicable for mixtures
EC number:	Not applicable for mixtures
UFI code:	W300-A06S-R003-GY26 (notified to PCN)

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

1.2.1. Identified uses

Unleaded automotive petrol (also known as gasoline) is primarily used as a motor fuel for spark-ignition internal combustion engines. Automotive petrol may only be used in accordance with the relevant operating documentation and for approved purposes in compliance with applicable legislation.

1.2.2. Uses advised against

Unleaded automotive petrol must not be used for vehicles operated in enclosed workplaces, or as a cleaning agent, for lighting, heating, or fire ignition.

1.3. Details of the supplier of the safety data sheet

1.3.1. Trade name and identification number

ORLEN Unipetrol RPA s.r.o., Záluží 1, 436 70 Litvínov, Czech Republic
IČO (Company ID No.): 275 97 075
☎: +420 476 161 111
fax: +420 476 619 553
email: info@orlenunipetrol.cz
website: www.orlenunipetrolrpa.cz

1.3.2. Place of business

Litvínov Refinery	Kralupy Refinery
Záluží 1	O. Wichterleho 809
436 70 <u>Litvínov</u>	278 01 <u>Kralupy nad Vltavou</u>
Czech Republic	Czech Republic
tel.: +420 476 163 567	+420 315 718 500
fax: +420 476 165 086	+420 315 718 640

1.3.3. E-mail address of the technically competent person responsible for the safety data sheet:

reach.unirpa@orlenunipetrol.cz

1.4. Emergency telephone number

<u>ORLEN Unipetrol RPA s.r.o. – Dispatch centre</u>	☎: +420 476 163 111	(24/7)
Toxicological Information Centre (TIS)	☎: +420 224 919 293	(24/7)
Na bojišti 1, 120 00 Praha 2, Czech Republic	☎: +420 224 915 402	(24/7)
e-mail: tis@vfn.cz		
Transport Information and Emergency Response System (TRINS)		
	☎: +420 476 163 111	(24/7)

Note: Emergency telephone numbers for EU and EEA countries are listed in section 16.

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SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

The product is classified as hazardous in accordance with Regulation (EC) No 1272/2008 (CLP):

FLAMMABLE LIQUID, CATEGORY 1; H224	Flam. Liq. 1, H224
ASPIRATION HAZARD, CATEGORY 1; H304	Asp. Tox. 1, H304
SKIN CORROSION/IRRITATION, CATEGORY 2; H315	Skin Irrit. 2, H315
SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE , CATEGORY 3; H336	STOT SE 3, H336
GERM CELL MUTAGENICITY, CATEGORY 1B; H340	Muta. 1B, H340
CARCINOGENICITY, CATEGORY 1B; H350	Carc. 1B, H350
REPRODUCTIVE TOXICITY, CATEGORY 2; H361d	Repr. 2, H361d
HAZARDOUS TO THE AQUATIC ENVIRONMENT – CHRONIC HAZARD, CATEGORY 2; H411	Aquatic Chronic 2, H411

Note: Full text of hazard statements is given in Section 16.

2.2. Label elements

Product identifiers		UNLEADED AUTOMOTIVE PETROL EFECTA 95, VERRA 100 The product contains: gasoline; low boiling point naphtha -unspecified;	
Hazard pictogram(s)		   	
Signal word		DANGER	
Hazard statement(s)	H224 H304 H315 H336 H340 H350 H361d H411	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 the unborn child. Toxic to aquatic life with long lasting effects.	
Precautionary statement(s)	P201 P210 P260 P273 P280 P301 + P310 P308 + P313 P331 P332 + P313 P403 + P233	Obtain special instructions before use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not breathe mist/vapours/spray. Avoid release to the environment. Wear protective gloves, protective clothing and eye protection or face protection. IF SWALLOWED: Immediately call a POISON CENTER or a doctor. IF exposed or concerned: Get medical advice/attention. Do NOT induce vomiting. If skin irritation occurs: Get medical advice/ attention. Store in a well-ventilated place. Keep container tightly closed.	

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Supplemental information (for consumer use):	P501	Dispose of contents/container as hazardous waste in accordance with national regulations.
	P101	If medical advice is needed, have product container or label at hand.
	P102	Keep out of reach of children.
	P103	Read label before use.
ORLEN Unipetrol RPA s.r.o. Záluží 1, 436 70 Litvínov, Czech Republic ☎: +420 476 161 111, +420 476 163 111		

2.3. Other hazards

Unleaded automotive petrol is a complex mixture of hydrocarbons with a boiling range of approximately 30 to 210 °C. It is harmful to health – due to its low viscosity, it may cause lung damage if swallowed. Petrol has a defatting and irritant effect on the skin. Its vapours may have narcotic effects and may cause headaches, nausea, and irritation of the eyes and respiratory tract.

Petrol vapours form explosive mixtures with air. The product may accumulate static electricity. The product has long-lasting adverse effects on the environment.

Information on whether the mixture or its components meet the criteria for PBT or vPvB substances is provided in subsection 12.5 (Results of PBT and vPvB assessment).

None of the components of the mixture is included in the Candidate List pursuant to Article 59(1) of Regulation (EC) No 1907/2006 (REACH) (either due to endocrine-disrupting properties or for any other reason).

The meaning of abbreviations used in this section is given in Section 16.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Not applicable. The product is a mixture.

3.2. Mixtures

Unleaded automotive petrol is a complex mixture of hydrocarbons with a boiling range of approximately 30 to 210 °C, containing up to 35 % v/v aromatic hydrocarbons and up to 1 % v/v benzene; the content of toluene and n-hexane may exceed 5 % v/v.

Chemical name of the mixture component	Index number EC number CAS number REACH registration No.	Concentration (% w/w)	Classification according to Regulation (EC) No 1272/2008 (CLP)
			Specific concentration limits (SCL), M-factors and ATE
Gasoline; low boiling point naphtha -unspecified	649-378-00-4 289-220-8 86290-81-5 01-2119471335-39-0025	≥ 77	Flam. Liq. 1, H224; Asp. Tox. 1, H304; Skin Irrit. 2, H315; STOT SE 3, H336; Muta. 1B, H340; Carc. 1B, H350; Repr. 2, H361d; Aquatic Chronic 2, H411 not established
2-ethoxy-2-methylpropane (ETBE; ethyl tert-butyl ether)	– 211-309-7 637-92-3 01-2119452785-29-0025	0 – 22	Flam. Liq. 2, H225; STOT SE 3, H336 not established
Ethanol; ethyl alcohol	603-002-00-5 200-578-6 64-17-5	0 – 10	Flam. Liq. 2, H225; Eye Irrit. 2, H319 not established

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	01-2119457610-43-xxxx		
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- Note 1: *Unleaded automotive petrol may also contain various oxygenated compounds with suitable properties as components, in amounts defined by applicable legislation, while the total oxygen content must not exceed 3.7 % w/w.*
- Note 2: *None of the components of the mixture are present in nanoform.*
- Note 3: *Explanation of the abbreviation ATE is given in Section 16.*

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

4.1.1. General instructions

Ensure personal safety when providing first aid.

Call emergency medical services (☎ 155 – Czech Republic, ☎ 112 – EU) and follow their instructions until they arrive. First aid shall always be focused on maintaining and monitoring basic vital functions: consciousness, breathing and circulation. In case of loss of consciousness and absence of breathing, check whether the airways are clear (e.g. by gentle jaw thrust). If the airways are patent, start cardiopulmonary resuscitation (chest compressions combined with rescue breaths) at a ratio of 30:2. Chest compressions only may be performed if the rescuer is not trained or if rescue breaths cannot be given for reasons of personal safety.

If the affected person is unconscious but breathing normally (regularly), place them in the recovery position. If there is any doubt as to whether the person is breathing normally (e.g. long pauses between breaths), act as if breathing has stopped.

The condition of the affected person may change rapidly; therefore, never leave them unattended and continuously monitor consciousness and breathing.

Do not give anything by mouth to an unconscious person or to a person having convulsions; place them in the recovery position only.

4.1.2. When inhaled

Remove the affected person to fresh air, keep them warm and at rest, and seek medical attention.

4.1.3. Skin contact

Remove contaminated clothing and footwear. Wash affected areas thoroughly with water (preferably lukewarm) and soap. If skin irritation persists, seek medical attention.

In case of burns, do not remove the product. Cover the affected area with a sterile dressing (or clean cloth) and seek immediate medical attention.

4.1.4. Contact with eyes

Immediately rinse the eyes with widely open eyelids under running lukewarm water for at least 15 minutes. If the affected person wears contact lenses, remove them before rinsing. Ensure professional medical attention.

4.1.5. When ingested

DO NOT induce vomiting!

If the affected person vomits spontaneously, keep their head below the level of the hips to prevent aspiration of vomit. Seek immediate medical attention.

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

Depending on the level of exposure, the mixture may cause headache, nausea, dizziness, breathing difficulties up to respiratory arrest, convulsions and unconsciousness. In case of ingestion, spontaneous vomiting may occur with a risk of aspiration of the mixture into the lungs and development of pulmonary oedema (chemical pneumonitis), which may be fatal. Direct contact with eyes or skin may cause transient irritation. Prolonged skin contact may result in defatting of the skin.

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

Immediate medical attention is required in case of eye contact, ingestion and/or aspiration of the mixture into the respiratory tract.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media: air fire extinguishing foam, dry chemical powder, carbon dioxide (CO₂).

Unsuitable extinguishing media: direct water jet.

Small fires: dry powder or foam fire extinguisher, dry sand or firefighting foam.

5.2. Special hazards arising from the substance or mixture

Vapours are heavier than air and may accumulate and spread along the ground. They may cause flashback upon ignition, even at a considerable distance from the source of release, resulting in fire and/or explosion. This risk is particularly significant in confined spaces or areas below ground level. In case of fire, toxic and irritating fumes may be released, including carbon monoxide and unburnt hydrocarbons.

5.3. Advice for firefighters

Prevent, as far as possible, contaminated firefighting water from entering sewers, surface water, groundwater and soil.

Cool containers exposed to fire with water spray, as they may explode when heated.

Do not use foam and water simultaneously, as water destroys the foam.

Protective equipment for firefighters: Full protective clothing and self-contained breathing apparatus (SCBA).

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Isolate the area of the incident and prevent access to the endangered area. Stay upwind. Release of this product presents a fire hazard; therefore, eliminate all possible sources of ignition. Do not smoke and do not use open flames. Where possible, ensure adequate ventilation of enclosed spaces. Avoid contact with the mixture and its vapours. When dealing with the consequences of an accidental release or emergency situation, use all recommended personal protective equipment (see subsection 8.2). In case of major spills, evacuate all persons from the endangered area. In areas below ground level and in confined spaces (including sewers), ignition of vapours may lead to an explosion.

6.2. Environmental precautions

Prevent further release of the mixture and contain the spill area. Prevent entry of the mixture into sewers, surface water and groundwater, for example by covering or sealing drainage inlets. Prevent penetration of the mixture into soil.

6.3. Methods and material for containment and cleaning up

Release of this product presents a fire hazard; therefore, use explosion-proof lighting and electrical equipment and non-sparking tools. Absorb the spilled product with suitable non-combustible porous/absorbent material (e.g. sand, earth, diatomaceous earth, vermiculite) and place it in closed containers for disposal. Dispose of in accordance with applicable waste legislation (see Section 13).

In case of a large release into water, use containment booms and recover the mixture from the water surface using skimmers/separators, or apply absorbent material to the spill and remove the saturated absorbent from the surface by skimming or suction. Consult an expert before the use of dispersants.

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6.4. Reference to other sections

For recommended personal protective equipment, see subsection 8.2 (Exposure controls).

For recommended waste disposal methods, see Section 13 (Disposal considerations).

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Handle the mixture and empty containers (which may contain product residues) only in well-ventilated areas and observe all fire-prevention measures (no smoking, no open flames, elimination of all potential ignition sources). Do not carry out operations such as welding, cutting, grinding or similar activities in the vicinity of containers (including empty ones). Do not use compressed air for filling, emptying or other handling operations. Prevent the generation of static electricity.

General hygiene measures: Observe good personal hygiene practices. Remove contaminated clothing immediately. Do not eat, drink or smoke during work. After work and before eating or drinking, wash hands and exposed parts of the body thoroughly with water and soap; if necessary, treat the skin with a suitable restorative cream. Do not take contaminated clothing, footwear or protective equipment into areas designated for eating.

7.2. Conditions for safe storage, including any incompatibilities

Storage facilities shall comply with fire safety requirements for buildings, and electrical installations shall meet applicable regulations. Store in a cool, well-ventilated place with effective exhaust ventilation, away from heat sources and all sources of ignition. Storage containers shall be kept tightly closed, properly labelled and grounded/earthened. Soft (carbon) steel or stainless steel is recommended as suitable packaging/container material. Do not store near incompatible materials, such as oxidising agents (e.g. oxygen, air, etc.) or other flammable materials.

7.3. Specific end use(s)

Unleaded automotive petrol is primarily intended for use as a fuel for spark-ignition internal combustion engines.

It must not be used for vehicles operated in enclosed workplaces, or as a cleaning agent, for lighting, heating, or fire starting. Never dispose of into drains.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limit values

According to Government Regulation No. 361/2007 Coll., as amended, laying down conditions for the protection of health at work, the following Permissible Exposure Limits (PEL) and Maximum Permissible Concentrations (NPK-P) of chemical substances in workplace air have been established in the Czech Republic:

Substance	CAS number	PEL [mg/m ³]	NPK-P [mg/m ³]	Notes
Gasolines (technical mixture of hydrocarbons)	—	400	1000	K, M
	For the substance “gasoline; low boiling point naphtha -unspecified;” (CAS No.: 86290-81-5), no PEL or NPK-P values are established. Therefore, the values for petrols (technical mixture of hydrocarbons) are provided in the table.			
	At the same time, it is recommended to comply with the limits established for the components contained in this UVCB substance:			
Components contained in the UVCB substance “gasoline; low boiling	Benzene / 71-43-2	0,66	—	B, D, I, K, M, P
	Toluene / 108-88-3	192	384	B, D, I, P

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point naphtha - unspecified" (CAS No.: 86290-81-5):	n-Hexane / 110-54-3	70	200	D, I, P
Tert-butyl methyl ether (MTBE)	1634-04-4	100	200	I
Ethanol	64-17-5	1000	3000	Not specified

For the substance "ethyl tert-butyl ether (ETBE)", no PEL or NPK-P values are established. Therefore, the values for tert-butyl methyl ether (MTBE) are provided in the table.

Note 1: Explanation of the abbreviations PEL and NPK-P is given in Section 16.

Note 2: Occupational exposure limit values for EU countries are listed in section 16.

Note 3: Explanation of notes in the "Notes" column in the table:

- B - a biological exposure test (BET) in urine or blood is established for the substance.
- D - significant absorption through the skin may occur during exposure.
- I - irritates mucous membranes (eyes, respiratory tract) and/or the skin.
- K - carcinogen, category 1A or 1B (with hazard statements H350, H350i).
- M - germ cell mutagen, category 1A or 1B (with hazard statement H340).
- P - serious delayed effects cannot be excluded for the substance (with hazard statements H372, H373).

According to Decree No. 432/2003 Coll., which lays down conditions for the classification of work into categories, limit values of biological exposure test indicators, conditions for sampling biological material for biological exposure testing and requirements for reporting work with asbestos and biological agents, the following limit values of biological exposure test indicators in urine are established within the Czech Republic. Exceeding these values indicates an increased exposure to chemical substances above the hygienically acceptable level:

Substance	Indicator	Limit values	
Gasoline; low boiling point naphtha - unspecified	Limit values for the substance as such are not established. It is therefore recommended to comply with the limits established for the components contained in this UVCB substance:		
Benzene	S-Phenylmercapturic acid	0,05 mg/g creatinine	0,024 µmol/mmol creatinine
	t,t-Muconic acid	1,5 mg/g creatinine	1,2 µmol/mmol creatinine
Toluene	o-Cresol (after hydrolysis)	1,5 mg/g creatinine	1,6 µmol/mmol creatinine
	Hippuric acid*	1600 mg/g creatinine	1000 µmol/mmol creatinine

Note *: If the determined level of hippuric acid exceeds 1600 mg/g but does not exceed 2500 mg/g creatinine, the biological exposure test based on o-cresol shall be used to refine the assessment of toluene exposure. If the level of hippuric acid exceeds 2500 mg/g creatinine, it is considered indicative of occupational exposure to toluene exceeding the OEL value, and the biological exposure test based on o-cresol is no longer required.

Note 1: Only urine with a creatinine concentration in the range of 0.3 g/l to 3 g/l (i.e. 2.65 mmol/l to 26.6 mmol/l) is suitable for evaluation.

Note 2: No limit values of biological exposure test indicators in urine are established for the mixture components 2-ethoxy-2-methylpropane (ETBE; EC No. 211-309-7) and ethanol (EC No. 200-578-6).

8.1.2. DNEL/DMEL values

Risk characterisation required for **workers/employees** (Assessment subject: **gasoline; low boiling point naphtha - unspecified**; EC No. 289-220-8):

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Route	Type of effect	Hazard conclusion	Most sensitive endpoint
Inhalation	Systemic effects - Long-term	no hazard identified	–
	Systemic effects - Acute	DNEL = 1286,4 mg/m ³	neurotoxicity (inhalation)
	Local effects - Long-term	DNEL = 837,5 mg/m ³	irritation (respiratory tract)
	Local effects - Acute	DNEL = 1066,67 mg/m ³	irritation (respiratory tract)
Dermal	Systemic effects - Long-term	no hazard identified	–
	Systemic effects - Acute	no hazard identified	–
	Local effects - Long-term	low hazard (no threshold derived)	–
	Local effects - Acute	low hazard (no threshold derived)	–
Eyes	Local effects	no hazard identified	–

Risk characterisation required for **the general population** (Assessment subject: **gasoline; low boiling point naphtha - unspecified**; EC No. 289-220-8):

Route	Type of effect	Hazard conclusion	Most sensitive endpoint
Inhalation	Systemic effects - Long-term	no hazard identified	–
	Systemic effects - Acute	DNEL = 1152 mg/m ³	neurotoxicity (inhalation)
	Local effects - Long-term	DNEL = 178,57 mg/m ³	irritation (respiratory tract)
	Local effects - Acute	DNEL = 640 mg/m ³	irritation (respiratory tract)
Dermal	Systemic effects - Long-term	no hazard identified	–
	Systemic effects - Acute	no hazard identified	–
	Local effects - Long-term	low hazard (no threshold derived)	–
	Local effects - Acute	low hazard (no threshold derived)	–
Oral	Systemic effects - Long-term	no hazard identified	–
	Systemic effects - Acute	no hazard identified	–
Eyes	Local effects	no hazard identified	–

Risk characterisation required for **workers/employees** (Assessment subject: **2-ethoxy-2-methylpropane (ETBE)**; EC No. 211-309-7):

Route	Type of effect	Hazard conclusion	Most sensitive endpoint
Inhalation	Systemic effects - Long-term	DNEL = 352 mg/m ³	subchronic toxicity
	Systemic effects - Acute	DNEL = 2800 mg/m ³	neurotoxicity
	Local effects - Long-term	DNEL = 105 mg/m ³	irritation (respiratory tract)
	Local effects - Acute	no hazard identified	–
Dermal	Systemic effects - Long-term	DNEL = 6767 mg/kg bw/day	subchronic toxicity
	Systemic effects - Acute	no hazard identified	–
	Local effects - Long-term	no hazard identified	–
	Local effects - Acute	no hazard identified	–
Eyes	Local effects	no hazard identified	–

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Risk characterisation required for **the general population** (Assessment subject: **2-ethoxy-2-methylpropane (ETBE)**; EC No. 211-309-7):

Route	Type of effect	Hazard conclusion	Most sensitive endpoint
Inhalation	Systemic effects - Long-term	DNEL = 105 mg/m ³	subchronic toxicity
	Systemic effects - Acute	DNEL = 1680 mg/m ³	neurotoxicity
	Local effects - Long-term	DNEL = 63 mg/m ³	irritation (respiratory tract)
	Local effects - Acute	–	–
Dermal	Systemic effects - Long-term	DNEL = 4060 mg/kg bw/day	subchronic toxicity
	Systemic effects - Acute	no hazard identified	–
	Local effects - Long-term	no hazard identified	–
	Local effects - Acute	no hazard identified	–
Oral	Systemic effects - Long-term	DNEL = 6 mg/kg bw/day	subchronic toxicity
	Systemic effects - Acute	no hazard identified	–
Eyes	Local effects	no hazard identified	–

Risk characterisation required for **workers/employees** (Assessment subject: **Ethanol**; EC No. 200-578-6):

Route	Type of effect	Hazard conclusion	Most sensitive endpoint
Inhalation	Systemic effects - Long-term	DNEL = 950 mg/m ³	–
	Systemic effects - Acute	DNEL = 1900 mg/m ³	–
Dermal	Systemic effects - Long-term	DNEL = 343 mg/kg bw/day	–
Oral	Systemic effects - Long-term	DNEL = 343 mg/kg bw/day	–

Risk characterisation required for the **general population** (Assessment subject: **Ethanol**; EC No. 200-578-6):

Route	Type of effect	Hazard conclusion	Most sensitive endpoint
Inhalation	Systemic effects - Long-term	DNEL = 114 mg/m ³	–
	Systemic effects - Acute	DNEL = 950 mg/m ³	–
Dermal	Systemic effects - Long-term	DNEL = 206 mg/kg bw/day	–
Oral	Systemic effects - Long-term	DNEL = 87 mg/kg bw/day	–

Note: Explanation of the abbreviations DNEL/DMEL and bw is given in Section 16.

8.1.3. PNEC values

Environmental risk characterisation (Assessment subject: **gasoline; low boiling point naphtha -unspecified**; EC No. 289-220-8):

Compartment	Hazard conclusion
Freshwater	no data available: testing technically not feasible
Sediments (freshwater)	no data available: testing technically not feasible
Marine water	no data available: testing technically not feasible
Sediments (marine water)	no data available: testing technically not feasible



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Compartment	Hazard conclusion
Sewage treatment plant	no data available: testing technically not feasible
Soil	no data available: testing technically not feasible
Air	no hazard identified
Secondary poisoning	insufficient hazard data available (further information necessary)

Derivation of specific PNEC values based on experimental data obtained from testing of water-accommodated fractions (WAF – dissolved/emulsified/suspended fractions of the test substance) is not appropriate for hydrocarbon-type UVCB substances. Therefore, environmental risk characterisation of the product was performed using the statistical hydrocarbon block method (HC5 extrapolation) applying the PETROTOX model v3.05.

Environmental risk characterisation (Assessment subject: **2-ethoxy-2-methylpropane (ETBE)**; EC No. 211-309-7):

Compartment	Hazard conclusion
Freshwater	PNEC = 0,51 mg/l
Sediments (freshwater)	PNEC = 0,62 mg/kg wwt PNEC = 2,86 mg/kg dwt
Marine water	PNEC = 0,017 mg/l
Sediments (marine water)	PNEC = 0,017 mg/kg wwt PNEC = 0,078 mg/kg dwt
Sewage treatment plant	PNEC = 12,5 mg/l
Soil	PNEC = 0,24 mg/kg wwt PNEC = 0.24 mg/kg dwt
Air	–
Secondary poisoning	no potential for bioaccumulation

Environmental risk characterisation (Assessment subject: **Ethanol**; EC No. 200-578-6):

Compartment	Hazard conclusion
Freshwater	PNEC = 0,96 mg/l
Sediments (freshwater)	PNEC = 3,6 mg/kg
Marine water	PNEC = 0,79 mg/l
Sediments (marine water)	–
Sewage treatment plant	PNEC = 580 mg/l
Soil	PNEC = 0,63 mg/kg
Air	no hazard identified
Secondary poisoning	PNEC = 0,72 mg/kg

Note: Explanation of the abbreviations PNEC, dwt and wwt is given in Section 16.

8.1.4. Recommended monitoring of the concentration in the workplace

Gas chromatography (GC) with flame ionisation detection (FID) or mass spectrometric detection (MS) in accordance with technical standards EN 689 and EN 482.

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8.2. Exposure controls

8.2.1. Technical protective measures for limiting the exposure of people and the environment

Protection against undesirable exposure of humans and the environment shall be ensured by keeping the mixture strictly under control through appropriate engineering measures and by the use of process and control technologies that reduce emissions and subsequent exposure, with the aim of preventing the release of vapours into the ambient air, entry of the mixture into the aquatic environment and soil, and potential human exposure. Areas where the mixture is handled or stored shall be equipped with impermeable floors and spill containment systems (e.g. bunds or collection trays) to retain accidental releases. Adequate general and local ventilation, including effective local exhaust ventilation, shall be ensured.

8.2.2. Individual protective measures

In situations where there is a risk of increased exposure during handling of the product, or where exposure may increase as a result of an accident or emergency situation, employees shall be provided with suitable personal protective equipment (PPE) for the protection of the respiratory tract, eyes, hands and skin, appropriate to the nature of the activities performed. Suitable respiratory protection shall also be used where compliance with occupational exposure limits cannot be ensured by engineering measures alone, or where exposure via inhalation may pose a risk to human health. Where PPE is used continuously during prolonged work, safety breaks shall be introduced if required by the nature of the protective equipment. All PPE shall be kept in a serviceable condition and damaged or contaminated equipment shall be replaced immediately.

RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT (PPE):

(The specific type of protective equipment shall be selected according to the nature of the activity performed and the amount and concentration of the hazardous substance/mixture at the workplace.)

- **Respiratory protection:** In case of insufficient ventilation and/or local exhaust ventilation, and in the event of release, use a protective mask complying with EN 143 equipped with a filter effective against organic vapours. For emergency response and accident clean-up operations, use self-contained breathing apparatus (SCBA);
- **Eye/face protection:** Safety goggles complying with EN 166;
- **Hand protection:** Chemically resistant gloves tested in accordance with EN 374. Suitable materials include, for example:

Activity	Glove material	Layer thickness	Breakthrough time
Routine work (risk of splashing)	natural latex	1 mm	120 minutes
Spill clean-up / emergency response	nitrile	0.4 mm	480 minutes

- **Protection of other body parts:** Antistatic, flame-retardant protective clothing; antistatic safety footwear;
- **Thermal hazards:** Not relevant under intended conditions of use;
- **Additional measures:** It is recommended that the workplace be equipped with an emergency safety shower and eye-wash facilities.

8.2.3. Environmental exposure controls

Prevent release of the product into the environment by all available means. See Section 6.2.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Unless otherwise stated, the information is taken from the registration documentation.

Data for the mixture component **gasoline; low boiling point naphtha -unspecified** (EC No. 289-220-8), which is the main component of the mixture:



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CHARACTERISTIC	UNIT	VALUE	SOURCE	NOTE
Physical state		liquid	CSR	at 20 °C and 1013.25 hPa
Colour		colourless, slightly yellow to yellow, possibly with greenish opalescence	CSR	
Odour		characteristic petrol odour	CSR	
Melting point/freezing point	[°C]	<-40	CSR	influence of variable UVCB composition
Boiling point or initial boiling point and boiling range	[°C]	<35 – 210	CSR	influence of variable UVCB composition; EN 228
Flammability		extremely flammable liquid and vapour	CSR	
Upper explosion limit / upper flammability limit	vol. %	7.6	CSR	influence of variable UVCB composition
Lower explosion limit / lower flammability limit	vol. %	1.4	CSR	influence of variable UVCB composition
Flash point	[°C]	<-20	CSR	influence of variable UVCB composition
Auto-ignition temperature	[°C]	280 – 470	CSR	influence of variable UVCB composition
Decomposition temperature	[°C]	does not decompose at temperatures relevant to use	see boiling range	not stated in CSR
pH		not relevant for petroleum substances (non-polar substances)		not stated in CSR
Kinematic viscosity	[mm ² /s]	<1.0	CSR	At 37.8 °C
Solubility in water	[mg/L]	practically insoluble		not stated in CSR; influence of variable UVCB composition
Partition coefficient n-octanol/water (log value)	[log Kow]	1.99 – 18.02	CSR	influence of variable UVCB composition
Vapour pressure	[kPa]	35 – 90	CSR	at 37.8 °C; influence of variable UVCB composition



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CHARACTERISTIC	UNIT	VALUE	SOURCE	NOTE
Relative density	water = 1	0.720 – 0.775	CSR	at 15 °C; influence of variable UVCB composition
Relative vapour density	air = 1	3.5	American Petroleum Institute (API)	not stated in CSR; molecular weight approx. 105
Particle characteristics		–		not applicable – liquid

Data for the mixture component **2-ethoxy-2-methylpropane (ETBE; EC No. 211-309-7)**:

CHARACTERISTIC	UNIT	VALUE	SOURCE	NOTE
Physical state		liquid	CSR	at 20 °C and 1013.25 hPa
Colour		light yellow	CSR	
Odour		characteristic, ethereal	CSR	
Melting point/freezing point	[°C]	-94	CSR	
Boiling point or initial boiling point and boiling range	[°C]	73.1	CSR	
Flammability		highly flammable liquid and vapour	CSR	
Upper explosion limit / upper flammability limit	vol. %	8.5	GESTIS	
Lower explosion limit / lower flammability limit	vol. %	1.0	GESTIS	
Flash point	[°C]	-19	CSR	
Auto-ignition temperature	[°C]	392	CSR	at 100,34-100,92 kPa
Decomposition temperature	[°C]	does not decompose at temperatures relevant to use		not stated in CSR
pH		not relevant for petroleum substances (non-polar substances)		not stated in CSR
Kinematic viscosity	[mm ² /s]	0.53	CSR	at 20 °C
Solubility in water	[mg/L]	16400		at 20 °C
Partition coefficient n-octanol/water (log value)	[log Kow]	1.48	CSR	
Vapour pressure	[kPa]	17	CSR	at 25 °C
Relative density	water = 1	0.75	CSR	at 15 °C
Relative vapour density	air = 1	3.5	PubChem	not stated in CSR
Particle characteristics		–		not applicable – liquid

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Data for the mixture component **ethanol** (EC No. 200-578-6):

CHARACTERISTIC	UNIT	VALUE	SOURCE	NOTE
Physical state		liquid	registration documentation	at 20 °C and 1013.25 hPa
Colour		colourless	registration documentation	
Odour		characteristic alcoholic	registration documentation	
Melting point/freezing point	[°C]	-114.0 – -114.4	registration documentation	at 1013.25 hPa
Boiling point or initial boiling point and boiling range	[°C]	78.2	registration documentation	at 1013.25 hPa
Flammability		highly flammable liquid and vapour	registration documentation	
Upper explosion limit / upper flammability limit	vol. %	15	registration documentation	
Lower explosion limit / lower flammability limit	vol. %	3.5	registration documentation	
Flash point	[°C]	13	registration documentation	closed cup test
Auto-ignition temperature	[°C]	363–425	registration documentation	
Decomposition temperature	[°C]	not relevant		distillable without decomposition under normal pressure
pH		7.0	registration documentation	at 10 g/l and 20 °C
Kinematic viscosity	[mm ² /s]	no data available		
Solubility in water	[mg/L]	unlimited	registration documentation	at 20 °C; fully miscible
Partition coefficient n-octanol/water (log value)	[log Kow]	-0.35	registration documentation	at 20 °C
Vapour pressure	[kPa]	5.726	registration documentation	at 19,6 °C
Relative density	water = 1	0.789	registration documentation	at 20 °C
Relative vapour density	air = 1	1.59	PubChem	
Particle characteristics		–		not applicable – liquid

Note: The term 'explosion limit' is synonymous to 'flammability limit', used outside the Union.

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Extremely flammable liquid and vapour.

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- 9.2.2. Other safety characteristics
 No other safety characteristics have been identified.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

The product is stable under normal conditions of use.

10.2. Chemical stability

The product is chemically stable under normal conditions.

10.3. Possibility of hazardous reactions

Incomplete combustion under conditions of insufficient air supply may result in the formation of carbon monoxide.

10.4. Conditions to avoid

Formation of concentrations within the explosive limits, presence of ignition sources, contact with open flames.

10.5. Incompatible materials

Oxidising substances and mixtures, self-igniting (pyrophoric) substances and mixtures.

10.6. Hazardous decomposition products

None under normal conditions of use. In case of incomplete combustion, carbon monoxide and soot may be formed.

SECTION 11: TOXICOLOGICAL INFORMATION

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

11.1.1. Toxicological effects of the substance/mixture

Data for the mixture component **gasoline; low boiling point naphtha -unspecified** (EC No. 289-220-8):

HAZARD CLASS	DATA FROM REGISTRATION DOCUMENTATION		EVALUATION
	DESCRIPTION	RESULT	
Acute toxicity	oral (OECD 401): inhalation (OECD 403): dermal (OECD 404):	LD ₅₀ : > 5000 mg/kg LC ₅₀ : > 5610 mg/m ³ LD ₅₀ : > 2000 mg/kg	does not meet the criteria for classification
Skin corrosion/irritation	tests on the substance and its components (OECD 404)	causes skin irritation	meets the criteria for classification (H315)
Serious eye damage/eye irritation	tests on the substance and its components (OECD 405)	the product does not irritate the eyes	does not meet the criteria for classification
Respiratory or skin sensitisation	tests on the substance and its components (OECD 406)	neither the product nor its components cause allergic reactions	does not meet the criteria for classification
Germ cell mutagenicity	OECD 476	based on the content of its components, the substance is classified as a mutagen (benzene content above 0.1%)	meets the criteria for classification (H340)

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HAZARD CLASS	DATA FROM REGISTRATION DOCUMENTATION		EVALUATION
	DESCRIPTION	RESULT	
Carcinogenicity	test data	based on the content of its components, the substance is classified as a carcinogen (benzene content above 0.1%)	meets the criteria for classification (H350)
Reproductive toxicity	1) fertility: 2) developmental toxicity:	based on the content of its components, the substance is classified as suspected of reproductive toxicity (toluene content above 3%)	meets the criteria for classification (H361d)
STOT – single exposure	acute toxicity studies (oral, dermal, inhalation)	toluene has neurotoxic effects	meets the criteria for classification (H336)
STOT – repeated exposure	1) Oral: 2) Inhalation: 3) Dermal:	no adverse effects were observed	does not meet the criteria for classification
Aspiration hazard		at kinematic viscosity below 20.5 mm ² /s (40 °C), the product, if swallowed and enters the airways, causes lung damage and may be fatal	meets the criteria for classification (H304)

Note: Explanation of the abbreviations LC₅₀/LD₅₀ is given in Section 16.

Information for mixture components: **2-ethoxy-2-methylpropane (ETBE)**; EC No. 211-309-7) and **ethanol** (EC No. 200-578-6):

The hazardous health effects of ETBE and ethanol contribute to some of the hazardous effects of petrol (EC No. 289-220-8) as the main component of the mixture. However, the contributions of ETBE and ethanol are small compared to the effects of petrol and therefore do not affect the classification of the mixture as derived from the classification of petrol as a substance.

11.1.2. Information on likely routes of exposure

Exposure may occur through inhalation, accidental ingestion, and dermal absorption of the product components. Under normal conditions, inhalation of petrol vapours represents the principal route of exposure. Dermal exposure generally contributes less significantly to the overall absorbed dose; however, direct and prolonged skin contact with the liquid product may increase absorption.

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

Depending on the exposure dose, the mixture may cause headache, sore throat, cough, breathing difficulties, chest tightness, impairment of central nervous system function, nausea, drowsiness and dizziness. In case of ingestion, abdominal cramps, spontaneous vomiting and possibly diarrhoea may occur. Direct contact with eyes or skin may cause transient irritation associated with redness, swelling of the affected area, tearing, and redness and swelling of the eyes. Prolonged skin contact may result in defatting and cracking of the skin. The mixture may cause heritable genetic defects and may cause or promote the development of cancer in humans. Handling of hot (heated) product may result in thermal burns, typically manifested by pain and redness of the skin and, in more severe cases, by blister formation.

11.1.4. Interactive effects

No interactive effects are expected under intended conditions of use.

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11.1.5. Toxicokinetics (absorption, distribution, metabolism and elimination)

There are no experimental toxicokinetic studies available for unleaded automotive petrol as a whole. The assessment is based on available data for the major hydrocarbon constituents of petrol, which allow the toxicokinetic properties of this complex mixture to be characterized.

Under normal conditions, inhalation is the principal route of exposure. Absorption of inhaled constituents generally increases with molecular weight. N-paraffins are generally absorbed more efficiently than iso-paraffins, and aromatic hydrocarbons are absorbed more efficiently than the corresponding paraffinic hydrocarbons. Low molecular weight hydrocarbons, such as butanes and pentanes, are absorbed only to a limited extent and are predominantly exhaled unchanged. Higher molecular weight hydrocarbons are absorbed more efficiently, distributed via the bloodstream to body tissues and subsequently metabolised. Metabolic transformation occurs predominantly in the liver, resulting in the formation of more polar metabolites that are subsequently excreted mainly in urine.

Dermal absorption is limited under normal conditions, particularly following exposure to petrol vapours. Upon contact with liquid petrol, dermal absorption is also generally low if free evaporation of the product can occur. However, if evaporation is impeded, the amount of absorbed constituents may be substantially higher.

Following ingestion, petrol constituents are readily absorbed from the gastrointestinal tract and high bioavailability can be assumed.

11.2. Information on other hazards

None of the components of the mixture is included in the Candidate List pursuant to Article 59(1) of Regulation (EC) No 1907/2006 (REACH), either due to endocrine-disrupting properties or for any other reason.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Data for the mixture component **gasoline; low boiling point naphtha -unspecified** (EC No. 289-220-8):

Aquatic compartment (including sediment)	fish	LL ₅₀ (96 h, mortality; WAF): 8.2 mg/l	<i>Pimephales promelas</i>
		NOELR (14 d, mortality): 2.6 mg/l	
		LL ₅₀ (14 d, mortality): 5.2 mg/l	
	aquatic invertebrates	EL ₅₀ (48 h, mobility; WAF): 4.5 mg/l	<i>Daphnia magna</i>
		NOELR (48 h, mobility): 0.5 mg/l	
		NOELR (21 d, reproduction): 2.6 mg/l	
		EL ₅₀ (21 d, reproduction): 10 mg/l	
	algae and aquatic plants	EL ₅₀ (72 h, growth rate; WAF): 3.1 mg/l NOELR (72 h, growth rate; WAF): 0.5 mg/l	<i>Raphidocelis subcapitata</i>
	sediment organisms	In accordance with Column 2 of Annex X, these tests are not required, as the chemical safety assessment (based on equilibrium partitioning) does not indicate a need for further testing. This is a UVCB substance; the hydrocarbon block method is used for environmental risk assessment.	
Terrestrial compartment	soil macro-organisms	PNEC (soil, estimated toxicity for terrestrial organisms): ≥0,4 – ≤20,8 mg/kg dry weight.	
	soil arthropods	In accordance with Column 2 of Annex IX, these tests are not required, as the hazard has already been sufficiently assessed using the equilibrium partitioning (EqP) method. This is a UVCB substance; the	
	terrestrial plants		

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	soil micro-organisms	hydrocarbon block method is used for environmental risk assessment.	
Atmospheric compartment		No relevant data available.	
Microbiological activity in sewage treatment systems	activated sludge	EC ₅₀ (40 h, growth inhibition): 15.41 mg/l	<i>Tetrahymena pyriformis</i>

Data for the mixture component **2-ethoxy-2-methylpropane (ETBE; EC No. 211-309-7)**:

Aquatic compartment (including sediment)	fish	LC ₅₀ (96 h, mortality): >974.1 mg/l	<i>Poecilia reticulata</i>
		NOEC (5 d, sum of all lesions): 0.625 mmol/l	<i>Danio rerio</i>
	aquatic invertebrates	EC ₅₀ (48 h, immobilization): 110 mg/l	<i>Daphnia magna</i>
		NOEC (21 d, reproduction): 51 mg/l	
	algae and aquatic plants	EC ₅₀ (72 h, growth rate): 1100 mg/l NOEC (72 h, growth rate): 7.5 mg/l	<i>Pseudokirchneriella subcapitata</i>
	sediment organisms	In accordance with Column 2 of Annex X of the REACH Regulation, these tests are not required, as direct or indirect exposure to the soil environment is unlikely. In the absence of any data for terrestrial organisms, the PNEC for soil has been calculated using the equilibrium partitioning (EqP) method. Based on its physicochemical properties, there is no indication that ETBE accumulates in soil, and therefore quantitative risk assessment for this compartment is not considered necessary.	
Terrestrial compartment	soil macro-organisms	In accordance with Column 2 of Annexes IX and X of the REACH Regulation, these tests are not required, as direct or indirect exposure to the soil environment is unlikely. In the absence of any data for terrestrial organisms, the PNEC for soil has been calculated using the equilibrium partitioning (EqP) method. Based on its physicochemical properties, there is no indication that ETBE accumulates in soil, and therefore quantitative risk assessment for this compartment is not considered necessary.	
	soil arthropods		
	terrestrial plants		
	soil micro-organisms		
Atmospheric compartment		No relevant data available.	
Microbiological activity in sewage treatment systems	activated sludge	NOEC (16 h, respiration rate): 78 mg/l EC ₅₀ (16 h, respiration rate): 510 mg/l	<i>Pseudomonas putida</i>

Data for the mixture component **ethanol (EC No. 200-578-6)**:

Aquatic compartment	fish	LC ₅₀ (96 h): 15300 mg/l	<i>Pimephales promelas</i>
		NOEC (120 h): 250 mg/l	<i>Danio rerio</i>
	aquatic invertebrates	LC ₅₀ (48 h): 5012 mg/l	<i>Ceriodaphnia dubia</i>
		NOEC (9 d): 9.6 mg/l	<i>Daphnia magna</i>
	algae and aquatic plants	ErC ₅₀ (72 h): 275 mg/l	<i>Chlorella vulgaris</i>
Microbiological activity in sewage treatment systems	activated sludge	EC ₅₀ (3 h): >1000 mg/l	—

Note 1: Explanation of the abbreviations EC₅₀, EL₅₀, LC₅₀, LL₅₀, NOEC, NOELR a WAF is given in Section 16.

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Note 2: Values presented in the tables are nominal (calculated) values.

12.2. Persistence and degradability

Information for the mixture component **gasoline; low boiling point naphtha -unspecified** (EC No. 289-220-8):

Hydrolysis: In accordance with Section 2 of Annex XI of the REACH Regulation, testing cannot be technically performed because this UVCB substance does not contain any functional groups susceptible to hydrolysis. The substance consists of chemical components composed exclusively of carbon and hydrogen atoms and therefore does not contain hydrolysable groups. Consequently, the substance has a very low potential for hydrolysis and this degradation process will not contribute to its removal from the environment.

Phototransformation in air: Standard tests for determining atmospheric oxidation half-life are designed for individual substances and are not suitable for this complex UVCB substance. However, this endpoint is described using quantitative structure–activity relationships for representative hydrocarbon structures (application of the PETRORISK model).

Phototransformation in water and soil: The substance contains hydrocarbon molecules that absorb UV radiation below 290 nm, i.e. in a range that does not reach the Earth's surface. Therefore, this substance has no potential to undergo photolysis in water and soil, and this process will not lead to measurable degradation of the substance in the environment.

Biodegradation in water, sediment and soil: Standard biodegradability tests are not technically suitable for petroleum UVCB substances because individual hydrocarbon components exhibit widely varying biodegradation rates, and a single degradation half-life cannot be defined for the entire UVCB substance. In accordance with Section 1.3 of Annex XI of the REACH Regulation, testing of the whole UVCB substance is therefore not required; this parameter is assessed using validated QSAR models (in particular BioHCWin within EPISuite).

The calculated degradation half-lives (DT₅₀ at 20 °C) for individual components of this substance range from 1.02 to 661,986 days. However, it should be noted that this represents the full range of predicted values, which may be misleading or not representative of the properties of the UVCB substance as a whole. Available experimental studies for representative gasoline fractions demonstrate inherent to ready biodegradability, e.g. 74–96% mineralisation after 28 days; one fraction met the criteria for ready biodegradability (OECD 301F) with 77.05% degradation after 28 days.

Summary: The substance as a whole is not readily biodegradable, but a significant proportion of light hydrocarbons is rapidly biodegraded. In contrast, some heavier aromatic components degrade more slowly. Due to the complex composition of this substance, its biodegradability cannot be easily predicted using quantitative structure–biodegradability relationship models. However, no structures currently known are expected to meet the P criterion.

Information for the mixture component **2-ethoxy-2-methylpropane (ETBE)** (EC No. 211-309-7):

Hydrolysis: In accordance with Section 2 of Annex XI of the REACH Regulation, a study does not need to be conducted, as based on the physicochemical properties of ETBE and analogy with related aliphatic ethers (e.g. MTBE, TAME), the substance does not undergo significant hydrolysis in natural waters within the environmentally relevant pH range of 4–10. Available data confirm that the hydrolysis rate is negligible (degradation constant 0 d⁻¹), and therefore hydrolysis does not represent a relevant degradation pathway for this substance in the environment.

Phototransformation in air: ETBE reacts in the atmosphere with hydroxyl radicals, which is the main mechanism of its removal from air. The degradation half-life is approximately 3–12 days, with a representative value of 5.35 days used in the assessment. This process is sufficiently rapid to prevent long-term persistence of ETBE in the atmosphere.

Phototransformation in water: The substance does not absorb UV radiation above 290 nm and therefore does not undergo direct photolysis in water. Phototransformation is not considered a significant degradation process.

Phototransformation in soil: No relevant information is available.

Biodegradation in water and sediment: Standard biodegradability tests indicate that ETBE is not readily

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biodegradable. In typical screening tests (without microbial adaptation), degradation is very limited; for example, only 6.6% degradation was observed after 7 days in the OECD 301D test.

In contrast, rapid biodegradation has been demonstrated in systems containing adapted microbial populations (e.g. in some industrial wastewater treatment plants), reaching 80–100% within 24–80 hours or 100% within 30–80 hours, depending on the inoculum type. Similarly, degradation of up to 100% within 10 days has been achieved using isolated bacterial cultures.

Under anaerobic conditions (sediments, anoxic systems), no biodegradation was observed, even during long-term monitoring.

Model degradation rate constants used in the assessment:

- biodegradation in water: $4,62 \times 10^{-3} \text{ d}^{-1}$
- biodegradation in aerobic sediment: $2,31 \times 10^{-3} \text{ d}^{-1}$
- biodegradation in anaerobic sediment: 0 % i po 168–244 days (no degradation observed; no rate determined)

Overall, ETBE may be considered inherently biodegradable in aerobic aquatic systems, with degradation strongly dependent on microbial adaptation. In anaerobic sediments, however, it is essentially not biodegradable.

Biodegradation in soil: Data on ETBE degradation in soil are inconsistent. In some studies, particularly where the soil had been previously exposed to ETBE or ETBE-containing gasoline, aerobic biodegradation was observed. In other studies, microbial communities without prior exposure showed no or only very slow degradation capability. The most reliable study, based on a well-described methodology, reported the following values:

- degradation half-life in soil (DT_{50}): 89.5 days
- model degradation rate constant used in the assessment: $4,08 \times 10^{-3} \text{ d}^{-1}$

Overall, ETBE exhibits moderate to slow aerobic degradation in soil, with the rate strongly dependent on the presence of adapted microorganisms. In anaerobic soil, degradation is negligible.

Summary: The degradation behaviour of ETBE varies significantly depending on the environmental compartment. In the atmosphere, the substance degrades relatively rapidly (half-life on the order of days). In aquatic environments and sediments, degradation is significantly slower and dependent on adapted microbial populations; no biodegradation has been observed in anaerobic systems even after hundreds of days. Based on available degradation half-life data, the substance meets the criteria for persistence (P) and very high persistence (vP) according to Annex XIII of the REACH Regulation, particularly in water and sediment.

Information for the mixture component **ethanol** (EC No. 200-578-6):

Ethanol is readily biodegradable in the aquatic environment. Studies with non-adapted municipal sludge show rapid aerobic degradation, with >60% degradation within 5 days, meeting the criteria for classification as readily biodegradable. Similarly, 68–75% degradation was observed in seawater within 10–20 days, indicating that ethanol is also readily degradable in marine environments. Anaerobic tests have demonstrated that ethanol is also degraded in the absence of oxygen, reaching approximately 91% mineralisation after an induction phase of 25–30 days. The estimated degradation half-life (DT_{50}) in water is approximately 3 days, in rivers 6.5–26 hours, and for aerobic degradation 26–104 hours, confirming its low persistence in the environment.

12.3. Bioaccumulative potential

Information for the mixture component **gasoline; low boiling point naphtha -unspecified** (EC No. 289-220-8):

Bioaccumulation in the aquatic environment: Standard bioaccumulation studies are not applicable to petroleum UVCB substances; therefore, in accordance with Section 1.3 of Annex XI of the REACH Regulation, testing is not scientifically necessary. However, this parameter has been estimated for representative hydrocarbon structures using the BCFWIN v2.16 model within EPISuite v3.12 as input to the hydrocarbon block method integrated in the PETRORISK model. Predicted bioconcentration factor (BCF) values for hydrocarbons are generally overly conservative, as biotransformation is not quantitatively taken into account (and BCF values tend to be overestimated for this reason).

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Calculated BCF values (fish) for individual components of this UVCB substance: BCF = 0.4–71,100 l/kg. It should be noted that this represents the full range of predicted values and may be highly misleading or not representative of the properties of the UVCB substance as a whole.

Bioaccumulation in the terrestrial environment: No relevant information is available.

Summary: Based on the n-octanol/water partition coefficient (log Kow) ranging from 1.99 to 18.02 (partially exceeding 3), a high bioaccumulation potential is expected for the substance. Evaluation of representative hydrocarbon structures indicates that some structures may meet the B criterion.

Information for the mixture component **2-ethoxy-2-methylpropane (ETBE; EC No. 211-309-7)**:

Bioaccumulation in the aquatic environment: According to Annex IX of the REACH Regulation, a bioaccumulation study in fish is not required, as the substance exhibits low lipophilicity and accumulation in aquatic organism tissues is unlikely.

Bioaccumulation in the terrestrial environment: No relevant information is available.

Summary: No experimental bioaccumulation studies are available; however, based on the physicochemical properties of ETBE, in particular the log Kow value of 1.48, a low bioaccumulation potential is expected. The substance is relatively hydrophilic, which further reduces its ability to accumulate in lipid tissues of aquatic or terrestrial organisms. Therefore, the substance is not considered to meet the bioaccumulation (B) criterion according to Annex XIII of the REACH Regulation. Secondary poisoning of predators is not considered relevant.

Information for the mixture component **ethanol (EC No. 200-578-6)**:

Due to the low n-octanol/water partition coefficient (log Kow) of -0.35, bioaccumulation in organisms is not expected.

12.4. Mobility in soil

Information for the mixture component **gasoline; low boiling point naphtha -unspecified (EC No. 289-220-8)**:

Adsorption/desorption: Standard adsorption/desorption studies are not applicable to petroleum UVCB substances; therefore, in accordance with Section 1.3 of Annex XI of the REACH Regulation, testing is not scientifically necessary. This parameter has therefore been addressed using QSAR calculations for relevant components. The calculated log Koc values for individual components of this substance range from 1.71 to 14.70. However, it should be noted that this represents the full range of predicted values, which may be misleading or not representative of the properties of the UVCB substance as a whole.

Volatilisation: No relevant information is available.

Summary: Based on the organic carbon/water partition coefficient (log Koc) in the range of 1.71–14.70 (partially exceeding 3), strong sorption of the substance in soil is expected.

Information for the mixture component **2-ethoxy-2-methylpropane (ETBE; EC No. 211-309-7)**:

Adsorption/desorption: Based on the correlation between the n-octanol/water partition coefficient and the organic carbon/water partition coefficient, a Koc value of 19.9 l/kg was calculated for ETBE, corresponding to a log Koc of 1.30. This low value indicates a very low sorption capacity to organic soil components and thus high mobility of the substance in the unsaturated zone as well as in soil in general. In accordance with Annex VII of the REACH Regulation, an experimental adsorption/desorption study is therefore not required.

Volatilisation: Specific experimental data are not available; however, according to the Mackay fugacity model, approximately 96.2% of ETBE is distributed into the atmosphere, indicating that volatilisation from water and soil may be a significant process contributing to the release of the substance into the air. Adsorption to solid particles is negligible.

Summary: Based on the organic carbon/water partition coefficient (log Koc) of 1.3 (less than 3), high mobility in soil is expected. The substance may easily move through the soil profile and potentially reach groundwater. Volatilisation may further contribute to its removal from the soil surface.

Information for the mixture component **ethanol (EC No. 200-578-6)**:

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The substance is highly mobile and readily migrates in the environment. In soil, it exhibits high mobility, primarily due to its low sorption potential resulting from a very low log K_{ow} value (–0.35), meaning that ethanol has a limited ability to adsorb to soil organic matter and can move rapidly through the soil profile. The substance is also highly soluble in water, which further facilitates its transport to groundwater. Based on its Henry's law constant (approximately 0.33 Pa·m³/mol), ethanol may also volatilise readily from both water and soil.

12.5. Results of PBT and vPvB assessment

The hydrocarbon-type UVCB substance **gasoline; low boiling point naphtha -unspecified** (EC No. 289-220-8) cannot be assessed as a whole according to the criteria of Annex XIII of Regulation (EC) No. 1907/2006 (REACH). Therefore, an assessment of representative components was carried out with the following conclusion: based on the available experimental and model data, none of the identified constituents of this UVCB substance meets simultaneously the criteria for persistence, bioaccumulation and toxicity (PBT) nor the criteria for very persistent and very bioaccumulative (vPvB) substances.

For the mixture components **2-ethoxy-2-methylpropane** (ETBE; EC No. 211-309-7) and **ethanol** (EC No. 200-578-6), PBT assessments based on the available data indicate that the criteria for PBT/vPvB are not met.

Furthermore, none of the mixture components contains PBT/vPvB substances included in the SVHC Candidate List at concentrations above 0.1%. No additional representative hydrocarbon structures meeting the PBT/vPvB criteria have been identified.

The product is therefore not identified as a PBT or vPvB substance.

Note: Explanation of the abbreviations PBT and vPvB is given in Section 16.

12.6. Endocrine disrupting properties

None of the components of the mixture is included in the Candidate List pursuant to Article 59(1) of REACH, either due to endocrine-disrupting properties or for any other reason.

12.7. Other adverse effects

The product forms a continuous film on the water surface, preventing oxygen transfer. Within the meaning of Annex 1 to Act No. 254/2001 Coll. (Water Act), the product is considered a hazardous pollutant.

The product does not contain ozone-depleting substances as defined by the Montreal Protocol and its Copenhagen Amendment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

In cases where disposal of product residues is necessary (e.g. unused product or product released during an incident), applicable European Union legislation as well as national and local regulations shall be observed. Waste shall be handed over to an authorised waste management facility.

Recommended waste classification is given in accordance with Commission Decision 2014/955/EU amending Decision 2000/532/EC on the list of waste pursuant to Directive 2008/98/EC of the European Parliament and of the Council.

13.1.1. Waste catalogue codes according to the European Waste Catalogue (EWC)

Waste code for product that has become waste:

13 07 02* Petrol

07 01 04* other organic solvents, washing liquids and mother liquors

16 03 05* organic wastes containing hazardous substances

Waste code for released product absorbed on absorbent material (e.g. absorbent granules):

15 02 02* absorbents, filter materials (including oil filters not otherwise specified), wiping cloths,
protective clothing contaminated by hazardous substances

Waste code for soil contaminated by released product:

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- 17 05 03* soil and stones containing hazardous substances
- 13.1.2. Recommended waste removal method
Dispose of unusable product residues via an authorised waste contractor holding the appropriate permits. Recommended treatment method: energy recovery (incineration). In the case of soil contaminated by released product, biodegradation followed by landfilling may be applied, in accordance with applicable legislation.
- 13.1.3. Recommended methods of contaminated containers disposal
Not applicable. The product is not supplied in packaged form. Unleaded automotive petrol is typically delivered in rail or road tank vehicles. Decontamination of such tanks is governed by the applicable ADR/RID regulations.
- 13.1.4. Measures for limiting exposure during waste handling
Never discharge product residues intended for disposal, or product released during an incident or accident, into sewers. Proceed in accordance with the instructions given in Section 6 (Accidental release measures) and subsection 8.2 (Exposure controls/personal protection), and comply with all applicable legal requirements for the protection of persons, air and water.

NOTICE: The information provided above is advisory in nature and applies to the supplied, unused material only. In accordance with applicable waste legislation, full responsibility for waste management, including waste classification by type and hazard, lies with the waste producer.

SECTION 14: TRANSPORT INFORMATION

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 hazards

ENVIRONMENTALLY HAZARDOUS

14.6. Special precautions for user

None.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable. The product is transported in rail tank wagons, road tank vehicles or via pipelines.

14.8. Other information

Hazard identification number: 33

Classification code: F1

Label(s): 3

+ environmentally hazardous substance mark



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SECTION 15: REGULATORY INFORMATION

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

15.1.1. European Union

Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH), as amended
 REGISTRATION (TITLE II OF REACH REGULATION):

The components of the product have been fully registered as substances.

AUTHORISATION (TITLE VII OF REACH REGULATION):

The components of the product are not included in Annex XIV to Regulation (EC) No 1907/2006 (REACH); therefore, the authorisation requirement does not apply.

None of the components of the mixture is included in the Candidate List pursuant to Article 59(1) of REACH.

RESTRICTION (TITLE VIII OF REACH REGULATION):

The product shall not be placed on the market for supply to the general public, with the exception of cosmetic products, medicinal products and fuels as specifically defined in entries No. 28 and No. 29 of Annex XVII to Regulation (EC) No 1907/2006 (REACH).

Regulation (EC) No 1272/2008 of the European Parliament and of the Council (CLP), as amended

CLASSIFICATION, LABELLING AND PACKAGING:

The product has been classified in accordance with this Regulation. Obligations related to packaging and labelling of hazardous chemical products apply only where the product is placed on the market in packaging subject to labelling requirements under the CLP Regulation.

POISON CENTRES NOTIFICATION (PCN):

The product is a hazardous mixture subject to notification obligations under Article 45 of the CLP Regulation. The required information on the hazardous mixture has been submitted via the ECHA Submission Portal – Poison Centres Notification (PCN).

Regulation (EC) No 649/2012 of the European Parliament and of the Council (PIC), as amended

The product is not subject to any specific restrictions on export or import.

15.1.2. Czech Republic

Act No. 350/2011 Coll., on chemical substances and chemical mixtures, as amended

Act No. 258/2000 Coll., on the protection of public health, as amended

Act No. 254/2001 Coll., on waters (Water Act), as amended

Act No. 201/2012 Coll., on air protection, as amended

Act No. 541/2020 Coll., on waste, as amended

Decree No. 8/2021 Coll., on the Waste Catalogue and evaluation of waste properties, as amended

Government Regulation No. 361/2007 Coll., laying down conditions for the protection of health at work, as amended

Act No. 224/2015 Coll., on the prevention of major accidents caused by selected hazardous chemical substances or mixtures, as amended

15.2. Chemical safety assessment

Chemical safety assessments have been carried out during the registration of the mixture components. The product meets the criteria for classification as hazardous in accordance with Regulation (EC) No 1272/2008 (CLP). Exposure assessment and subsequent risk characterisation have been performed.

Information on safe handling of the mixture is incorporated throughout this safety data sheet (Sections 1 to 16).

SECTION 16: OTHER INFORMATION

Changes made in the revision

Changes introduced in this version of the safety data sheet are indicated by a black–red vertical line in the left margin of the text.

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Abbreviations and acronyms used in the text

ADR	Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BA	Czech designation for automotive petrol
BCF	Bioconcentration Factor
bw	Body weight
CAS	Substance identification number assigned by the Chemical Abstracts Service of the American Chemical Society
CLP	Regulation (EC) No 1272/2008 of the European Parliament and of the Council on the Classification, Labelling and Packaging of substances and mixtures, implementing the United Nations Globally Harmonized System (GHS) in EU legislation
CMR	Carcinogenic, mutagenic or toxic for reproduction
CSR	Chemical Safety Report
DMEL	Derived Minimal Effect Level (exposure level corresponding to a low but theoretically possible risk acceptable for non-threshold effects)
DNEL	Derived No-Effect Level (exposure level below which no adverse effects on human health are expected)
DT ₅₀	Degradation half-life (disappearance time)
DW	Data waiving
dwt	Dry weight
EC	Official European Union substance identification number: EINECS – European Inventory of Existing Commercial Chemical Substances ELINCS – European List of Notified Chemical Substances NLP – No Longer Polymer
EC ₅₀	Effect concentration causing immobilisation/effect in 50 % of test organisms
ECHA	European Chemicals Agency
ED ENV	Endocrine disruptor for the environment
ED HH	Endocrine disruptor for human health
EEA	European Economic Area
EL ₅₀	Effective loading rate causing immobilisation in 50 % of test organisms
EN (ISO)	European Standard (possibly adopted on the basis of international standards)
EP	European Parliament
EqP	Equilibrium partitioning method
ErC ₅₀	Concentration of substance that causes a 50% reduction in algae growth rate (Effect concentration)
ETBE	Ethyl tert-butyl ether (2-ethoxy-2-methylpropan)
EU	European Union
HSDB	Hazardous Substances Data Bank
IATA	International Air Transport Association
IBC	Intermediate Bulk Container



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IC ₅₀	Inhibition concentration causing inhibition in 50 % of test organisms
ICAO	International Civil Aviation Organization
ICE	Intervention in Chemical transport Emergencies programme
IČO	Company identification number (company ID No.) in the Czech Republic
IMDG	International Maritime Dangerous Goods Code
IMO	International Maritime Organization
ISO	International Organization for Standardization
LC ₅₀ /LD ₅₀	Lethal concentration / lethal dose causing death in 50 % of test organisms
LL ₅₀	Effective loading rate causing 50 % mortality (lethal loading rate)
LOEC/LOEL	Lowest Observed Effect Concentration / Level
log K _{oc}	Common logarithm of the organic carbon- water partition coefficient
log K _{ow}	Common logarithm of the n-octanol/water partition coefficient
LR ₅₀	Lethal response resulting in 50% mortality
MARPOL	International Convention for the Prevention of Pollution from Ships
M-factors	Multiplication factors
nf	Not feasible
NOAEC/NOAEL	No Observed Adverse Effect Concentration / Level
NOEC/NOEL	No Observed Effect Concentration / Level
NPK-P	The highest permitted concentration of the chemical substance in the air (the concentration of the substance that a worker may be exposed to for a maximum of 15 minutes but which must never be exceeded)
OECD	Organisation for Economic Co-operation and Development
PBT; vPvB	Persistent, Bioaccumulative and Toxic; very Persistent and very Bioaccumulative
PCN	Poison Centre Notification
PEL	Permitted exposure limit of the chemical substance in the air (the exposure value that an employee may be exposed to during the entire working shift (8 hours), without endangering his health during lifetime occupational exposure)
PMT; vPvM	Persistent, Mobile and Toxic; Very Persistent, Very Mobile
PNEC	Predicted No-Effect Concentration
PPE	Personal Protective Equipment
QSAR	(Quantitative) Structure–Activity Relationship
REACH	Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SCL	Specific Concentration Limits
SDS	Safety Data Sheet
STOT	Specific Target Organ Toxicity

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STP	Sewage treatment plant
su	Scientifically unjustified
TIS	Toxicological Information Centre (Czech Republic)
TRINS	Transport Information and Emergency Response System
UACRON	Chemical database (The University of Akron)
UFI code	Unique Formula Identifier for hazardous mixtures
UN	United Nations
UN number	Four-digit identification number assigned to dangerous goods under the UN Model Regulations
UVCB	Substances of Unknown or Variable composition, Complex reaction products or Biological materials
WAF	Water-accommodated fraction
wwt	Wet weight

Method of classification of the mixture

The mixture was classified using the calculation method based on information on its composition and on the hazardous properties of its components.

The flammability of the mixture was assessed on the basis of the measured flash point and the boiling range. Effects on human health and on the aquatic environment were assessed using the procedures laid down in Annex I to the CLP Regulation for the classification of mixtures, taking into account the known classification of the components and their known concentrations in the mixture.

Sources of data used in the preparation of the safety data sheet

Annexes I, IV, VI and VII to Regulation (EC) No 1272/2008 of the European Parliament and of the Council (CLP), as amended

Principles of providing first aid in case of exposure to chemical substances (doc. MUDr. Daniela Pelclová et al.)

Substance registration dossiers according to Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH), as amended

Safety data sheets gasoline (low boiling point naphtha -unspecified), ETBE and ethanol

Full text of hazard statements (H-statements), EUH-statements and hazard class abbreviations referred to in Sections 2 and/or 3

H224	Extremely flammable liquid and vapour.
H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H350	May cause cancer.
H361d	Suspected of damaging the unborn child.
H411	Toxic to aquatic life with long lasting effects.
Asp. Tox.	Aspiration hazard
Aquatic Chronic	Hazardous to the aquatic environment – chronic hazard
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquid
Muta.	Germ cell mutagenicity

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Repr.	Reproductive toxicity
Skin Irrit.	Skin irritation
STOT SE	Specific target organ toxicity – single exposure

Training instructions

Persons handling the product shall be instructed on the risks associated with its handling and on the requirements for the protection of human health and the environment (see relevant provisions of the Labour Code).

Access to information

In accordance with Article 35 of Regulation (EC) No 1907/2006 (REACH), every employer shall grant access to the information contained in the safety data sheet to all workers who use this product or may be exposed to its effects during their work, as well as to their representatives.

Occupational exposure limit values for EU countries (see point 8.1.1)

Data for gasoline (CAS No. 86290-81-5), ETBE (CAS No. 637-92-3) and ethanol (CAS No. 64-17-5):

Country	8-hour limit [mg/m ³]	short-term limit [mg/m ³]
European Union (Regulation No. 2000/39/ES, as amended)	no limit values for the given substances have been defined	
Germany	ethanol – 380	ethanol – 1520
Poland	ETBE – 100; ethanol – 1900	ETBE – 200
Slovakia	no limit values for the given substances have been defined	
Hungary	ethanol – 1900	ethanol – 3800

8-hour limit: measured or calculated with respect to an eight-hour reference period as a time-weighted average

short-term limit: a limit value above which exposure should not occur and which corresponds to a 15-minute period

Emergency telephone number for EU and EEA countries (see subsection 1.4)

National Centres		Telephone	Institution / Website / E-mail
Austria		+43 1 406 43 43	Austrian Poison Information Centre (Vergiftungsinformationszentrale-VIZ) https://goeg.at/viz
Belgium		+32 070 245 245	Centre Antipoisons, c/o Hôpital Militaire Reine Astrid Rue Bruyn 1, 1120 Bruxelles http://www.centreantipoisons.be/
Bulgaria		+359 2 9154 233 +359 2 9154 411	National Toxicology Center, Hospital for Active Medical Treatment and Emergency Medicine “N.I.Pirogov” http://www.pirogov.bg/ e-mail: poison_centre@mail.orbitel.bg
Croatia		+385 1 2348 342	Poison Control Centre / Centar za kontrolu otrovanja Ksaverska cesta 2, POB 291, 10000 Zagreb https://www.imi.hr/en/
Cyprus		+357 22405611; 1401	http://www.mlsi.gov.cy/
Czech Republic		+420 224 91 92 93 +420 224 91 54 02	Toxikologické informační středisko (TIS) Na bojišti 1, 120 00 Praha 2 http://www.tis-cz.cz/ e-mail: tis@vfn.cz
Denmark		+45 82 12 12 12 112	Giftninjen at Bispebjerg Hospital Bispebjerg Bakke 23E, adgang 20 C 2400 København NV http://www.giftninjen.dk/
Estonia		+372 7943 794 112	Poisoning Information Centre Osmussaare 2, Tallinn 13811 Hotline: 16662 https://www.terviseamet.ee/en/chemical-and-product-safety/data-for-safety-data-sheet
Finland		+358 0800 147 111	Finnish Poison Information Center HUS (Helsinki University Hospital)
France – Orfila (INRS)		+33 (0)1 45 42 59 59	Centres Antipoison et de Toxicovigilance (CapTv) Hôpital Fernand Widal 200 rue du Faubourg Saint Denis 75010 PARIS



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National Centres	Telephone	Institution / Website / E-mail
		www.centres-antipoison.net viviane.damboise@lrp.aphp.fr
France - Angers	+33 02 41 48 21 21	http://www.centres-antipoison.net/angers/index.html
France - Bordeaux	+33 05 56 96 40 80	http://www.centres-antipoison.net/bordeaux/index.html
France - Lille	+33 08 00 59 59 59	http://www.centres-antipoison.net/lille/index.html
France - Lyon	+33 04 72 11 69 11	http://www.centres-antipoison.net/lyon/index.html
France - Marseille	+33 04 91 75 25 25	http://www.centres-antipoison.net/marseille/index.html
France - Nancy	+33 03 83 22 50 50	http://www.centres-antipoison.net/nancy/index.html
France - Paris	+33 01 40 05 48 48	http://www.centres-antipoison.net/paris/index.html
France - Toulouse	+33 05 61 77 74 47	http://www.centres-antipoison.net/toulouse/index.html
Germany	+49 116117 112	Bundesinstitut für Risikobewertung
Germany - Berlin	+49 030 - 19240	Giftnotruf der Charité Universitätsmedizin Berlin Campus Mitte Charitéplatz 1 10117 Berlin https://giftnotruf.charite.de e-mail: giftnotruf@charite.de
Germany - Bonn	+49 0228 - 19240	Informationszentrale gegen Vergiftungen am Universitätsklinikum Bonn Zentrum für Kinder- und Jugendmedizin Venusberg Campus 1 53127 Bon http://www.gizbonn.de/ e-mail: gizbn@ukbonn.de
Germany - Erfurt	+49 0361 - 730730	Giftnotruf Erfurt Gemeinsames Giftinformationszentrum der Länder Mecklenburg- Vorpommern, Sachsen, Sachsen-Anhalt und Thüringen c/o HELIOS Klinikum Erfurt GmbH Nordhäuser Straße 74 99089 Erfurt http://www.ggiz-erfurt.de e-mail: ggiz@ggiz-erfurt.de
Germany - Freiburg	+49 0761 - 19240	Vergiftungs-Informations-Zentrale Universitätsklinikum Freiburg Klinik für Allgemeine Kinder- und Jugendmedizin Kinder- und Jugendklinik Freiburg Breisacher Str. 86b 79110 Freiburg http://www.uniklinik-freiburg.de/giftberatung.html e-mail: giftinfo@uniklinik-freiburg.de
Germany - Göttingen	+49 0551 - 19240	Giftinformationszentrum-Nord der Länder Bremen, Hamburg, Niedersachsen und Schleswig-Holstein (GIZ-Nord) Universitätsmedizin Göttingen Georg-August-Universität Robert- Koch-Straße 40 37075 Göttingen http://www.giz-nord.de/ e-mail: giz-nord.info@med.uni-goettingen.de
Germany - Mainz	+49 06131 - 19240	Giftinformationszentrum Mainz – Giftinformationszentrum der Länder Rheinland-Pfalz und Hessen sowie für das Saarland Klinische Toxikologie Universitätsmedizin der Johannes Gutenberg-Universität Langenbeckstraße 1 Gebäude 601 55131 Mainz http://www.giftinfo.uni-mainz.de e-mail: GIZ.mail@unimedizin-mainz.de
Germany - Munich	+49 089 - 19240	Giftnotruf München Abteilung für Klinische Toxikologie und Giftnotruf München TUM Klinikum Rechts der Isar Ismaninger Straße 22 81675 München https://toxikologie.mri.tum.de/ e-mail: tox@mri.tum.de
Greece	+30 2107793777	Poison Information Centre Children's Hospital "P&A Kyriakou" Athens 11527 e-mail: poison_ic@aglaiakyriakou.gr
Hungary	+36 80 201 199 +36 1 476 6464	Egészségügyi Toxikológiai Tájékoztató Szolgálat (ETTSZ) Albert Flórián út 2-6, H-1097 Budapest https://www.nnk.gov.hu/index.php/kemial-biztonsagi-es-kompetens-hatosagi-fo/egeszsegugyi-toxikologiai-tajekoztato-szolgalat E-mail: ettsz@nnk.gov.hu
Iceland	+354 543 1000 +354 543 2222 112	Landspítali – The National University Hospital https://www.landspitali.is/sjuklingar-adstandendur/deildir-og-thjonusta/eitrunarmidstod/ e-mail: etit@landspitali.is
Ireland	+353 (1) 809 2166	National Poisons Information Centre Beaumont Hospital Beaumont



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First issue: 10. 12. 1999

National Centres	Telephone	Institution / Website / E-mail
		Dublin 9 https://www.poisons.ie/ e-mail: chemicalsinfo@beaumont.ie
Italy - Bergamo	+39 800883300	Istituto Superiore di sanità – Preparati Pericolosi helpdesk.clp@iss.it
Italy - Florence	+39 055-7947819	
Italy - Foggia	+39 800183459	
Italy - Milan	+39 02-66101029	
Italy - Naples	+39 081-5453333	
Italy - Pavia	+39 0382-24444	
Italy - Rome	+39 06-49978000 +39 06-3054343 +39 06-68593726	
Italy - Verona	+39 800011858	
Latvia	+371 67042473 112	Toksikoloģijas un sepses klīnikas Saindēšanās un zāļu informācijas centrs, Hipokrāta 2 Rīga, Latvija, LV-1038; Valsts ugunsdzēsības un glābšanas dienests https://www.meteo.lv/en/lapas/environment/chemical-substances-/reach/reach_en?&id=1483&nid=410
Lithuania	+370 (5) 236 2052	Apsinuodijimų informacijos biuras http://www.apsinuodijau.lt
Luxembourg	+352 8002 5500	Centre Antipoisons, c/o Hôpital Militaire Reine Astrid Rue Bruyn 1, 1120 Bruxelles, Centre Antipoisons de Bruxelles http://www.centreatipoisons.be
Malta	112	https://deputyprimeminister.gov.mt/en/Pages/health.aspx
Netherlands	+31 088 755 8000	Nationaal Vergiftigingen Informatie Centrum (NVIC) http://www.vergiftigingen.info/
Norway	+47 22 59 13 00	Norwegian Poison Information Centre https://www.helsenorge.no/en/poison-information
Poland	+48 12 411 99 99	Pracownia Informacji Toksykologicznej i Analiz Laboratoryjnych Uniwersytetu Jagiellońskiego ul. Jakubowskiego 2 30-688 Krakow Poland https://oit.cm.uj.edu.pl/dzialalnosc-uslugowa
Portugal	+351 800 250 250	CIAV - Centro de Informação Antivenenos
Romania	+40 213183606	
Slovakia	+421 2 5477 4166 +421 911 166 066	NÁRODNÉ TOXIKOLOGICKÉ INFORMAČNÉ CENTRUM (NTIC) Limbová 5 833 05 Bratislava http://www.ntic.sk/ e-mail: ntic@ntic.sk
Slovenia	112 +386 1 522 1293	Centre for Clinical Pharmacology and Toxicology Division of Internal Medicine University Medical Centre Ljubljana Zaloška cesta 7 1525 Ljubljana Slovenia www.kclj.si e-mail: gp.ukc@kclj.si
Spain	+34 91 562 04 20	Servicio de Información Toxicológica (SIT) Instituto Nacional de Toxicología y Ciencias Forenses (INTCF) C/José Echegaray nº4 28232 Las Rozas de Madrid Madrid e-mail: sit@mju.es ; intcf@justicia.es
Sweden	112 (begär Giftinformation)	Swedish Poisons Information Centre Giftinformationscentralen 171 76 Stockholm Sweden https://giftinformation.se/servicemeny/in-english/ e-mail: giftinformation@gic.se

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		Revision: Replaces: First issue:	31. 07. 2026 – version 11(0)–B 24. 04. 2023 – version 10(1) 10. 12. 1999

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