SAFETY DATA SHEET

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

1.1 Product identifier

Product name **Ottokraftstoff**

UFI: KU95-Y007-C008-VSV4

Other means of identification Gasoline in accordance with standard EN 228
Aral Ultimate 102, Aral Super E5, Aral Super E10, Aral SuperPlus 98

SDS # SGY2419

Historic SDS no. SGY2188, SGY2192

Product type Liquid.

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

Use of the substance/ mixture Use only as a motor fuel for spark ignition engines. NOT for aviation use. Should NOT be used as a solvent nor cleaning agent.
For specific application advice see appropriate Technical Data Sheet or consult our company representative.

1.3 Details of the supplier of the safety data sheet

Supplier Aral Aktiengesellschaft
Wittener Str. 45
44789 Bochum
Germany
Telefon: +49 (0) 234 315-0

E-mail address MSDSadvice@bp.com

1.4 Emergency telephone number

EMERGENCY TELEPHONE NUMBER +49 (0) 30 30686 790 (Giftnotruf Berlin/Emergency Poison Centre)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Flam. Liq. 1, H224
Skin Irrit. 2, H315
Eye Irrit. 2, H319
Muta. 1B, H340
Carc. 1B, H350
Repr. 2, H361d
STOT SE 3, H336
Asp. Tox. 1, H304
Aquatic Chronic 2, H411

See Section 16 for the full text of the H statements declared above.

See sections 11 and 12 for more detailed information on health effects and symptoms and environmental hazards.

2.2 Label elements

UFI: KU95-Y007-C008-VSV4

Hazard pictograms

Signal word Danger

SECTION 2: Hazards identification

Hazard statements

H224 - Extremely 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.

General

P102 - Keep out of reach of children.
P101 - If medical advice is needed, have product container or label at hand.

Prevention

P201 - Obtain special instructions before use.
P280 - Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P261 - Avoid breathing vapour.
P264 - Wash hands thoroughly after handling.

Response

P391 - Collect spillage.
P308 + P313 - IF exposed or concerned: Get medical attention.
P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell.
P301 + P310, P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.
P362 + P364 - Take off contaminated clothing and wash it before reuse.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical attention.

Storage

P405 - Store locked up.
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 - Keep cool.

Disposal

P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients

Gasoline

Supplemental label elements

Not applicable.

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Restricted to professional users.

Special packaging requirements

Containers to be fitted with child-resistant fastenings

Yes, applicable.

Tactile warning of danger

Yes, applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Product meets the criteria for endocrine disrupting properties according to Regulation (EC) No. 1907/2006.

This substance/mixture does not contain any components that are considered to have endocrine disrupting properties.

Other hazards which do not result in classification

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapour may cause flash fire or explosion.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Product definition Mixture

A complex mixture of volatile hydrocarbons containing paraffins, naphthenes, olefins and aromatics with carbon numbers predominantly between C4 and C12. May contain oxygenates. May also contain small quantities of proprietary performance additives.

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
Gasoline	REACH #: 01-2119471335-39 EC: 289-220-8 CAS: 86290-81-5 Index: 649-378-00-4	<100	Flam. Liq. 1, H224 Skin Irrit. 2, H315 Muta. 1B, H340 Carc. 1B, H350 Repr. 2, H361d STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411	-	[1]
tert-butyl methyl ether	REACH #: 01-2119452786-27 EC: 216-653-1 CAS: 1634-04-4 Index: 603-181-00-X	≤15	Flam. Liq. 2, H225 Skin Irrit. 2, H315	-	[1] [2]
2-ethoxy-2-methylpropane (ETBE)	REACH #: 01-2119452785-29 EC: 211-309-7 CAS: 637-92-3	≤15	Flam. Liq. 2, H225 STOT SE 3, H336	-	[1]
Ethanol	REACH #: 01-2119457610-43 EC: 200-578-6 CAS: 64-17-5 Index: 603-002-00-5	≤10	Flam. Liq. 2, H225 Eye Irrit. 2, H319	Eye Irrit. 2, H319: C ≥ 50%	[1] [2]
Tertiary-amyl methyl ether (TAME)	REACH #: 01-2119453236-41 EC: 213-611-4 CAS: 994-05-8 Index: 603-213-00-2	≤5	Flam. Liq. 2, H225 Acute Tox. 4, H302 STOT SE 3, H336	ATE [Oral] = 1602 mg/kg	[1]
Isobutanol	REACH #: 01-2119484609-23 EC: 201-148-0 CAS: 78-83-1 Index: 603-108-00-1	<3	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335 STOT SE 3, H336	-	[1] [2]
methanol	REACH #: 01-2119433307-44 EC: 200-659-6 CAS: 67-56-1 Index: 603-001-00-X	≤1	Flam. Liq. 2, H225 Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 STOT SE 1, H370 (central nervous system (CNS), optic nerve)	ATE [Oral] = 100 mg/kg ATE [Dermal] = 300 mg/kg ATE [Inhalation (vapours)] = 3 mg/l STOT SE 1, H370: C ≥ 10% STOT SE 2, H371: 3% ≤ C < 10%	[1] [2]
Toluene	EC: 203-625-9 CAS: 108-88-3 Index: 601-021-00-3	≥3 - ≤35	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361d STOT SE 3, H336 STOT RE 2, H373 (central nervous system (CNS)) Asp. Tox. 1, H304 Aquatic Chronic 3, H412	-	[1] [2]
n-hexane	EC: 203-777-6 CAS: 110-54-3 Index: 601-037-00-0	<3	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361f STOT SE 3, H336 STOT RE 1, H372 (nervous system) Asp. Tox. 1, H304 Aquatic Chronic 2, H411	-	[1] [2] [3]
Benzene	EC: 200-753-7 CAS: 71-43-2 Index: 601-020-00-8	≤1	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2, H319	-	[1] [2]

SECTION 3: Composition/information on ingredients

Cumene	EC: 202-704-5 CAS: 98-82-8 Index: 601-024-00-X	<1	Muta. 1B, H340 Carc. 1A, H350 STOT RE 1, H372 (blood system) Asp. Tox. 1, H304 Flam. Liq. 3, H226 Carc. 1B, H350 STOT SE 3, H335 Asp. Tox. 1, H304 Aquatic Chronic 2, H411	-	[1] [2]

See Section 16 for the full text of the H statements declared above.

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Substance of equivalent concern

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.

Skin contact
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Drench contaminated clothing with water before removing. This is necessary to avoid the risk of sparks from static electricity that could ignite contaminated clothing. Contaminated clothing is a fire hazard. Contaminated leather, particularly footwear, must be discarded. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention.

Inhalation
If inhaled, remove to fresh air. Get medical attention immediately.

If exposure to vapour, mists or fumes causes drowsiness, headache, blurred vision or irritation of the eyes, nose or throat, remove immediately to fresh air. Keep patient warm and at rest. If any symptoms persist obtain medical advice.

Ingestion
Do not induce vomiting. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical attention immediately.

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

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

Potential acute health effects

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

Ingestion
Irritating to mouth, throat and stomach. Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs.

Skin contact
Causes skin irritation.

Eye contact
Causes serious eye irritation.

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

Inhalation
Solvent "sniffing" (abuse) or intentional overexposure to vapours can produce serious central nervous system effects, including unconsciousness, and possibly death. May be harmful by inhalation if exposure to vapour, mists or fumes resulting from thermal decomposition products occurs. Vapour, mist or fume may irritate the nose, mouth and respiratory tract.

Ingestion
If swallowed, may irritate the mouth, throat and digestive system. If swallowed, may cause abdominal pain, stomach cramps, nausea, vomiting, diarrhoea, dizziness and drowsiness.

Skin contact
Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.

Eye contact
Vapour, mist or fume may cause eye irritation. Exposure to vapour, mist or fume may cause stinging, redness and watering of the eyes.

4.3 Indication of any immediate medical attention and special treatment needed

SECTION 4: First aid measures

Notes to physician

Treatment should in general be symptomatic and directed to relieving any effects.
Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment.
Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided.
Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

In case of fire, use water fog, foam, dry chemical or carbon dioxide extinguisher or spray.

Unsuitable extinguishing media

Do not use water jet. The use of a water jet may cause the fire to spread by splashing the burning product.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture

Extremely flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. Vapours can form explosive mixtures with air. Vapours are heavier than air and can spread along the ground or float on water surfaces to remote ignition sources. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Liquid will float and may reignite on surface of water.

Hazardous combustion products

Combustion products may include the following:
carbon oxides (CO, CO_2) (carbon monoxide, carbon dioxide)

5.3 Advice for firefighters

Special precautions for fire-fighters

No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. This material is toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Special protective equipment for fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Eliminate all ignition sources. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Floors may be slippery; use care to avoid falling. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Put on appropriate personal protective equipment.

For emergency responders

Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage. In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents. If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities. Collect recovered product and other contaminated materials in suitable tanks or containers for recycle, recovery or safe disposal.

6.3 Methods and material for containment and cleaning up

SECTION 6: Accidental release measures

Small spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.

Large spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Dike spill area and do not allow product to reach sewage system and surface or ground water. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilt product. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections

See Section 1 for emergency contact information.
See Section 5 for firefighting measures.
See Section 8 for information on appropriate personal protective equipment.
See Section 12 for environmental precautions.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not swallow. Aspiration hazard if swallowed. Can enter lungs and cause damage. Never siphon by mouth. Avoid breathing vapour or mist. Avoid contact of spilt material and runoff with soil and surface waterways. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Do not reuse container. Empty containers retain product residue and can be hazardous.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Keep away from heat and direct sunlight. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Store and use only in equipment/containers designed for use with this product. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Light hydrocarbon vapours can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapour in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Do not enter storage tanks. If entry to vessels is necessary, follow permit to work procedures. Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Electrical equipment should not be used unless it is intrinsically safe (i.e. will not produce sparks). Explosive air/vapour mixtures may form at ambient temperature. If product comes into contact with hot surfaces, or leaks occur from pressurised fuel pipes, the vapour or mists generated will create a flammability or explosion hazard. Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use.

Germany - Storage code

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SECTION 7: Handling and storage

7.3 Specific end use(s)

Recommendations See section 1.2 and Exposure scenarios in annex, if applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Toluene	**TRGS 900 OEL (Germany)** Absorbed through skin. TWA 8 hours: 190 mg/m³. Issued/Revised: 6/2021. PEAK 15 minutes: 380 mg/m³. Issued/Revised: 6/2021. TWA 8 hours: 50 ppm. Issued/Revised: 6/2021. PEAK 15 minutes: 100 ppm. Issued/Revised: 6/2021.
tert-butyl methyl ether	**TRGS 900 OEL (Germany)** TWA 8 hours: 180 mg/m³. Issued/Revised: 1/2006. PEAK 15 minutes: 270 mg/m³. Issued/Revised: 1/2006. TWA 8 hours: 50 ppm. Issued/Revised: 1/2006. PEAK 15 minutes: 75 ppm. Issued/Revised: 1/2006.
Ethanol	**TRGS 900 OEL (Germany)** TWA 8 hours: 380 mg/m³. Issued/Revised: 5/2018. PEAK 15 minutes: 1520 mg/m³. Issued/Revised: 5/2018. TWA 8 hours: 200 ppm. Issued/Revised: 5/2018. PEAK 15 minutes: 800 ppm. Issued/Revised: 5/2018.
Isobutanol	**TRGS 900 OEL (Germany)** TWA 8 hours: 310 mg/m³. Issued/Revised: 1/2006. PEAK 15 minutes: 310 mg/m³. Issued/Revised: 1/2006. TWA 8 hours: 100 ppm. Issued/Revised: 1/2006. PEAK 15 minutes: 100 ppm. Issued/Revised: 1/2006.
n-hexane	**TRGS 900 OEL (Germany)** TWA 8 hours: 180 mg/m³. Issued/Revised: 1/2006. PEAK 15 minutes: 1440 mg/m³. Issued/Revised: 1/2006. TWA 8 hours: 50 ppm. Issued/Revised: 1/2006. PEAK 15 minutes: 400 ppm. Issued/Revised: 1/2006.
methanol	**TRGS 900 OEL (Germany)** Absorbed through skin. TWA 8 hours: 130 mg/m³. Issued/Revised: 11/2019. PEAK 15 minutes: 260 mg/m³. Issued/Revised: 11/2019. TWA 8 hours: 100 ppm. Issued/Revised: 11/2019. PEAK 15 minutes: 200 ppm. Issued/Revised: 11/2019.
Benzene	**TRGS 910 (Germany)** Absorbed through skin. Excursion factor: 8. Issued/Revised: 7/2012. Tolerance Concentration: 1.9 mg/m³. Issued/Revised: 7/2012. Tolerance Concentration: 0.6 ppm. Issued/Revised: 7/2012. Acceptance Concentration: 0.2 mg/m³. Issued/Revised: 7/2012. Acceptance Concentration: 0.06 ppm. Issued/Revised: 7/2012.
Cumene	**TRGS 900 OEL (Germany)** Absorbed through skin. TWA 8 hours: 50 mg/m³. Issued/Revised: 3/2023. PEAK 15 minutes: 200 mg/m³. Issued/Revised: 3/2023. TWA 8 hours: 10 ppm. Issued/Revised: 3/2023. PEAK 15 minutes: 40 ppm. Issued/Revised: 3/2023.

Recommended monitoring procedures Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Biological exposure indices

Product/ingredient name	Exposure indices
Toluene	**DFG BEI-values list (Germany, 7/2025)** Notes: danger from percutaneous absorption (see p. 211 and p. 228). BEI: 600 µg/l, toluene [in blood]. Sampling time: immediately after exposure. BEI: 1.5 mg/l, o-cresol (after hydrolysis) [in urine]. Sampling time: end of exposure or end of shift / for long-term exposures: at the end of the shift after several shifts. BEI: 75 µg/l, toluene [in urine]. Sampling time: end of exposure or end of

SECTION 8: Exposure controls/personal protection

shift.

TRGS 903 - BEI Values (Germany, 10/2024)

BEI: 600 µg/l, toluene [in whole blood]. Sampling time: immediately after exposure.

BEI: 1.5 mg/l, o-cresol (after hydrolysis) [in urine]. Sampling time: at the end of the shift, for long-term exposure after several previous shifts.

BEI: 75 µg/l, toluene [in urine]. Sampling time: end of exposure or end of shift.

tert-butyl methyl ether

DFG BEI-values list (Germany, 7/2025)

BEI: see section XII.2: substances for which no BAT values are currently be derived, but documentaries in the "work medico-toxicological justifications for BAT values, EKA and BLW", tert-butyl alcohol [in whole blood, in urine].

BEI: see section XII.2: substances for which no BAT values are currently be derived, but documentaries in the "work medico-toxicological justifications for BAT values, EKA and BLW", tert-butyl methyl ether [in whole blood, in urine]. Sampling time: end of exposure or end of shift.

n-hexane

DFG BEI-values list (Germany, 7/2025)

BEI: 5 mg/l, 2,5-hexanedione plus 4,5-dihydroxy-2-hexanone (after hydrolysis) [in urine]. Sampling time: end of exposure or end of shift / for long-term exposures: at the end of the shift after several shifts.

TRGS 903 - BEI Values (Germany, 10/2024)

BEI: 5 mg/l, 2,5-hexandione plus 4,5-dihydroxy-2-hexanone (after hydrolysis) [in urine]. Sampling time: end of exposure or end of shift.

methanol

DFG BEI-values list (Germany, 7/2025) Notes: danger from percutaneous absorption (see p. 211 and p. 228).

BEI: 15 mg/l, methanol [in urine]. Sampling time: end of exposure or end of shift.

TRGS 903 - BEI Values (Germany, 10/2024)

BEI: 15 mg/l, methanol [in urine]. Sampling time: end of exposure or end of shift.

Benzene

DFG BEI-values list (Germany, 7/2025) Notes: danger from percutaneous absorption (see p. 211 and p. 228).

BEI: 0.3 µg/l, benzene [in urine]. Sampling time: end of exposure or end of shift.

BEI: 150 µg/g creatinine, trans, trans-muconic acid [in urine]. Sampling time: end of exposure or end of shift.

BEI: 0.3 µg/g creatinine, S-phenylmercapturic acid [in urine]. Sampling time: end of exposure or end of shift.

TRGS 910 (Germany, 3/2025)

Tolerance Concentration: 500 µg/g creatinine, trans, trans-muconic acid [in urine]. Sampling time: end of exposure or end of shift.

Acceptance Concentration: 3 µg/g creatinine, S-phenylmercapturic acid [in urine]. Sampling time: end of exposure or end of shift.

Tolerance Concentration: 25 µg/g creatinine, S-phenylmercapturic acid [in urine]. Sampling time: end of exposure or end of shift.

Acceptance Concentration: 0.8 µg/l, benzene [in urine]. Sampling time: end of exposure or end of shift.

Tolerance Concentration: 5 µg/l, benzene [in urine]. Sampling time: end of exposure or end of shift.

Cumene

DFG BEI-values list (Germany, 7/2025) Notes: danger from percutaneous absorption (see p. 211 and p. 228).

BEI: 10 mg/g creatinine, 2-phenyl-2-propanol (after hydrolysis) [in urine]. Sampling time: end of exposure or end of shift.

TRGS 903 - BEI Values (Germany, 10/2024)

BEI: 10 mg/g creatinine, 2-phenyl-2-propanol (nach hydrolyse) [in urine]. Sampling time: end of exposure or end of shift.

DNELs/DMELs

Product/ingredient name	Result

SECTION 8: Exposure controls/personal protection

Gasoline	**DNEL - Workers - Short term - Inhalation** 1300 mg/m³ Effects: Systemic 15 minutes **DNEL - Workers - Short term - Inhalation** 1100 mg/m³ Effects: Local 15 minutes **DNEL - Workers - Long term - Inhalation** 840 mg/m³ Effects: Local 8 hours TWA **DNEL - General population - Consumers - Short term - Inhalation** 1200 mg/m³ Effects: Systemic 15 minutes **DNEL - General population - Consumers - Short term - Inhalation** 640 mg/m³ Effects: Local 15 minutes **DNEL - General population - Consumers - Long term - Inhalation** 180 mg/m³ Effects: Local 24 hours TWA
toluene	**DNEL - Workers - Short term - Inhalation** 377 mg/m³ Effects: Systemic Irritation **DNEL - Workers - Long term - Inhalation** 75.37 mg/m³ Effects: Local Irritation **DNEL - Workers - Long term - Dermal** 0.1875 mg/cm² Effects: Local Neurotoxicity **DNEL - Workers - Long term - Inhalation** 75.37 mg/m³ Effects: Systemic Neurotoxicity **DNEL - Workers - Long term - Inhalation** 377 mg/m³ Effects: Local Neurotoxicity **DNEL - General population - Long term - Dermal** 75 mg/kg bw/day Effects: Systemic Neurotoxicity (Inhalation) **DNEL - General population - Long term - Inhalation** 18.9 mg/m³ Effects: Systemic Neurotoxicity **DNEL - General population - Long term - Oral** 2.69 mg/kg bw/day Effects: Systemic Neurotoxicity (Inhalation)

SECTION 8: Exposure controls/personal protection

	DNEL - General population - Long term - Dermal 0.1 mg/cm² Effects: Local Neurotoxicity **DNEL - General population - Long term - Inhalation** 18.9 mg/m³ Effects: Local Irritation **DNEL - General population - Short term - Inhalation** 188.5 mg/m³ Effects: Local Irritation **DNEL - General population - Short term - Inhalation** 188.5 mg/m³ Effects: Systemic Neurotoxicity **DNEL - Workers - Long term - Dermal** 150 mg/kg bw/day Effects: Systemic Neurotoxicity (Inhalation)
tert-butyl methyl ether	**DNEL - Workers - Short term - Inhalation** 357 mg/m³ Effects: Local **DNEL - Workers - Long term - Dermal** 5100 mg/kg bw/day Effects: Systemic TWA, Repeated dose toxicity **DNEL - Workers - Long term - Inhalation** 178.5 mg/m³ Effects: Systemic TWA, Repeated dose toxicity **DNEL - General population - Consumers - Short term - Inhalation** 214 mg/m³ Effects: Local **DNEL - General population - Consumers - Long term - Dermal** 3570 mg/kg bw/day Effects: Systemic TWA, Repeated dose toxicity **DNEL - General population - Consumers - Long term - Inhalation** 53.6 mg/m³ Effects: Systemic TWA **DNEL - General population - Consumers - Long term - Oral** 7.1 mg/kg bw/day Effects: Systemic TWA
2-ethoxy-2-methylpropane	**DNEL - Workers - Short term - Inhalation** 2800 mg/m³ Effects: Systemic **DNEL - Workers - Long term - Dermal** 6767 mg/kg bw/day Effects: Systemic TWA, Repeated dose toxicity **DNEL - Workers - Long term - Inhalation** 352 mg/m³ Effects: Systemic TWA, Repeated dose toxicity

SECTION 8: Exposure controls/personal protection

	DNEL - Workers - Long term - Inhalation 105 mg/m³ Effects: Local TWA **DNEL - General population - Consumers - Short term - Inhalation** 1680 mg/m³ Effects: Systemic **DNEL - General population - Consumers - Long term - Dermal** 4060 mg/kg bw/day Effects: Systemic TWA, Repeated dose toxicity **DNEL - General population - Consumers - Long term - Inhalation** 105 mg/m³ Effects: Systemic TWA, Repeated dose toxicity **DNEL - General population - Consumers - Long term - Oral** 6 mg/kg bw/day Effects: Systemic TWA, Repeated dose toxicity **DNEL - General population - Consumers - Long term - Inhalation** 63 mg/m³ Effects: Local TWA
ethanol	**DNEL - Workers - Long term - Inhalation** 380 mg/m³ Effects: Systemic Carcinogenicity **DNEL - General population - Long term - Inhalation** 114 mg/m³ Effects: Systemic Carcinogenicity
methanol	**DNEL - General population - Short term - Dermal** 4 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Dermal** 4 mg/kg bw/day Effects: Systemic **DNEL - Workers - Short term - Dermal** 20 mg/kg bw/day Effects: Systemic **DNEL - Workers - Long term - Dermal** 20 mg/kg bw/day Effects: Systemic **DNEL - General population - Short term - Inhalation** 26 mg/m³ Effects: Local **DNEL - General population - Long term - Inhalation** 26 mg/m³ Effects: Local **DNEL - General population - Short term - Inhalation** 26 mg/m³ Effects: Systemic **DNEL - General population - Long term - Inhalation** 26 mg/m³ Effects: Systemic

SECTION 8: Exposure controls/personal protection

DNEL - Workers - Short term - Inhalation
130 mg/m³
Effects: Local

DNEL - Workers - Long term - Inhalation
130 mg/m³
Effects: Local

DNEL - Workers - Short term - Inhalation
130 mg/m³
Effects: Systemic

DNEL - Workers - Long term - Inhalation
130 mg/m³
Effects: Systemic

DNEL - General population - Short term - Oral
4 mg/kg bw/day
Effects: Systemic

DNEL - General population - Long term - Oral
4 mg/kg bw/day
Effects: Systemic

PNECs

Product/ingredient name	Result
toluene	**Sewage Treatment Plant - Assessment Factors** 0.84 mg/l **Soil - Equilibrium Partitioning** 0.313 mg/kg dwt **Marine water sediment - Equilibrium Partitioning** 0.178 mg/kg dwt **Sediment - Equilibrium Partitioning** 1.78 mg/kg dwt **Intermittent release - Assessment Factors** 37.8 µg/l **Marine - Assessment Factors** 7.4 µg/l **Fresh water - Assessment Factors** 74 µg/l **Intermittent release - Assessment Factors** 3.78 µg/l
tert-butyl methyl ether	**Fresh water - Assessment Factors** 5.1 mg/l **Marine - Assessment Factors** 0.26 mg/l **Intermittent release - Assessment Factors** 47.2 mg/l **Sewage Treatment Plant - Assessment Factors** 71 mg/l **Fresh water sediment - Equilibrium Partitioning** 23 mg/kg dwt **Marine water sediment - Equilibrium Partitioning** 1.62 mg/kg dwt **Soil - Equilibrium Partitioning** 1.62 mg/kg dwt
2-ethoxy-2-methylpropane	**Fresh water - Assessment Factors**

SECTION 8: Exposure controls/personal protection

	0.51 mg/l **Marine water sediment - Equilibrium Partitioning** 0.02 mg/kg wwt **Intermittent release - Assessment Factors** 1.1 mg/l **Fresh water sediment - Equilibrium Partitioning** 0.62 mg/kg wwt **Marine - Assessment Factors** 0.017 mg/l **Soil - Equilibrium Partitioning** 0.24 mg/kg wwt **Sewage Treatment Plant - Assessment Factors** 12.5 mg/l
ethanol	**Fresh water - Assessment Factors** 0.96 mg/l **Marine - Assessment Factors** 0.79 mg/l **Fresh water sediment - Equilibrium Partitioning** 3.6 mg/kg dwt **Soil - Assessment Factors** 0.63 mg/kg dwt **Sewage Treatment Plant - Assessment Factors** 580 mg/l **Secondary Poisoning - Assessment Factors** 0.38 mg/kg **Marine water sediment - Equilibrium Partitioning** 2.9 mg/kg dwt **Intermittent release - Assessment Factors** 2.75 mg/l

8.2 Exposure controls

Appropriate engineering controls

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.
All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.
Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.
The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection

If local exhaust ventilation or other methods of ventilation are not possible or are insufficient, wear suitable respiratory protective devices. Wear suitable respiratory protective devices if there is a risk of exposure limits being exceeded. The choice of suitable respiratory device will depend upon a risk assessment of the workplace environment and the task being carried out. If required, the respiratory device must be certified as safe in defined explosive atmospheres (EX Label). Respiratory protective devices must be checked to ensure they fit correctly each time they are worn. Please consult European standard EN 529 for further guidance on the selection, use, care and maintenance of respiratory protective devices.

Suitable breathing apparatus (independent of ambient atmosphere) must be worn if any of the following situations apply.

SECTION 8: Exposure controls/personal protection

- When the workplace atmosphere is considered to be immediately dangerous to life and health.
- When there is a risk of the workplace atmosphere being oxygen deficient.
- When the workplace atmosphere is uncontrolled.
- When the workplace atmosphere is unknown.
- When there is a risk of loss of consciousness or asphyxiation
- When entry into a confined space is required.
- When there is a risk of gases being released that could be a fire or explosion hazard.
- When the concentration of contaminants in the atmosphere exceeds the level of protection (maximum allowed concentration) given by a filtering device
- When the contaminants have a low odour that would not be tasted or smelt by the wearer of a filtering device if the filter became exhausted or saturated.
- When there is a risk of hydrogen sulphide exposure limits being exceeded.

Use with adequate ventilation.
If there is a requirement for the use of a respiratory protective device, but the use of breathing apparatus (independent of ambient atmosphere) is not required, then a suitable filtering device must be worn.
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product.

Recommended: Gas filter suitable for gases and vapours. Type: AX
Gas filter suitable for gases and vapours. Type: A
Combined filter suitable for gases, vapours and particles (dust, smoke, mist, aerosol). Type: AP

Eye/face protection

Chemical splash goggles.

Skin protection

Hand protection

General Information:

Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. The correct choice of protective gloves depends upon the chemicals being handled, and the conditions of work and use. Most gloves provide protection for only a limited time before they must be discarded and replaced (even the best chemically resistant gloves will break down after repeated chemical exposures).

Gloves should be chosen in consultation with the supplier / manufacturer and taking account of a full assessment of the working conditions.

Wear chemical resistant gloves.
Do not re-use gloves.
Protective gloves will deteriorate over time due to physical and chemical damage. Inspect and replace gloves on a regular basis.
Protective gloves must give suitable protection against mechanical risks (i.e. abrasion, blade cut and puncture).
The frequency of replacement will depend upon the circumstances of use.

Breakthrough time:

Breakthrough time data are generated by glove manufacturers under laboratory test conditions and represent how long a glove can be expected to provide effective permeation resistance. It is important when following breakthrough time recommendations that actual workplace conditions are taken into account. Always consult with your glove supplier for up-to-date technical information on breakthrough times for the recommended glove type.
Our recommendations on the selection of gloves are as follows:

Continuous contact:

Gloves with a minimum breakthrough time of 240 minutes, or >480 minutes if suitable gloves can be obtained.
If suitable gloves are not available to offer that level of protection, gloves with shorter breakthrough times may be acceptable as long as appropriate glove maintenance and replacement regimes are determined and adhered to.

Short-term / splash protection:

Recommended breakthrough times as above.
It is recognised that for short-term, transient exposures, gloves with shorter breakthrough times may commonly be used. Therefore, appropriate maintenance and replacement regimes must be determined and rigorously followed.

Glove Thickness:

SECTION 8: Exposure controls/personal protection

For general applications, we recommend gloves with a thickness typically greater than 0.35 mm.

It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.
Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:

• Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.

• Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential.

Recommended: Nitrile gloves. Gloves made from fluoroelastomer resistant to hydrocarbons and a wide range of chemicals.
Wear a chemically resistant multi-layer laminate inner glove inside an outer nitrile glove. The purpose of the outer glove is to protect the inner glove from cuts and mechanical damage. The presence of aromatic hydrocarbons in the product will significantly shorten the length of time that nitrile gloves will provide protection. Do not re-use nitrile gloves if exposed to aromatic hydrocarbons.

Skin and body

Wear suitable protective clothing.
Footwear highly resistant to chemicals.
When there is a risk of ignition wear inherently fire resistant protective clothes and gloves.
Refer to standard: ISO 11612
When there is a risk of ignition from static electricity, wear anti-static protective clothing. For greatest effectiveness against static electricity, overalls, boots and gloves should all be anti-static.
Refer to standard: EN 1149
Cotton or polyester/cotton overalls will only provide protection against light superficial contamination.
When the risk of skin exposure is high (from experience this could apply to the following tasks: cleaning work, maintenance and service, filling and transfer, taking samples and cleaning up spillages) then a chemical protective suit and boots will be required.
Work clothing / overalls should be laundered on a regular basis. Laundering of contaminated work clothing should only be done by professional cleaners who have been told about the hazards of the contamination. Always keep contaminated work clothing away from uncontaminated work clothing and uncontaminated personal clothes.

Refer to standards:

Respiratory protection: EN 529
Gloves: EN 420, EN 374
Eye protection: EN 166
Filtering half-mask: EN 149
Filtering half-mask with valve: EN 405
Half-mask: EN 140 plus filter
Full-face mask: EN 136 plus filter
Particulate filters: EN 143
Gas/combined filters: EN 14387

Environmental exposure controls

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

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Physical state	Liquid.
Colour	Colourless to light yellow.
Odour	Petrol

SECTION 9: Physical and chemical properties

Odour threshold
0.25 ppm
(Based on Petrol)

Melting point/freezing point
<-60°C (<-76°F)
(Based on Petrol)

Initial boiling point and boiling range
30 to 210°C (86 to 410°F)

Flammability
Extremely flammable liquid and vapour.

Lower and upper explosion limit
Lower: 0.6%
Upper: 8%

Flash point
Open cup: <-20°C (<-4°F) [Cleveland]

Auto-ignition temperature
275 to 445°C (527 to 833°F)
(Based on Concawe Category Low boiling point naphtha (Gasoline))

Decomposition temperature
Not observed to decompose by final boiling point: >210°C (>410°F)

pH
Not applicable. Product is non-soluble (in water).

Kinematic viscosity
Kinematic: <7 mm^2/s (<7 cSt) at 40°C

Solubility

Media	Result
water	Very slightly soluble

Partition coefficient n-octanol/water (log value)
Not applicable. Based on Petrol - Substance is a hydrocarbon UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for this complex substance.

Vapour pressure

Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
tert-butyl methyl ether	247.5	33	OECD 104			
2-ethoxy-2-methylpropane (ETBE)	127.5	17	OECD 104			
Ethanol	42.94865	5.7				
Tertiary-amyl methyl ether (TAME)	68.25	9.1	OECD 104			
methanol	126.96329	16.9				

Density and/or Relative density
<1

Density and/or Relative density
720 to 775 kg/m³ (0.72 to 0.775 g/cm³) at 15°C

Relative vapour density
>1 [Air = 1]

Particle characteristics

Median particle size
Not applicable. Based on physical state.

9.2 Other information

Evaporation rate
>1 (butyl acetate = 1)

Explosive properties
Based on Petrol - Not considered explosive based on structural and oxygen balance considerations.
Extremely flammable liquid and vapour. Vapours may form explosive mixtures with air.

Oxidising properties
Based on Petrol - Not considered oxidizing based on structural considerations.

Miscible with water
No.

SECTION 10: Stability and reactivity

10.1 Reactivity
No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.

10.2 Chemical stability
The product is stable.

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

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

SECTION 10: Stability and reactivity

10.5 Incompatible materials Reactive or incompatible with the following materials: oxidising materials.

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

SECTION 11: Toxicological information

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

Acute toxicity

Product/ingredient name	Result
Gasoline	**Rat - Oral - LD50** >5000 mg/kg Equivalent to OECD 401 Based on Gasoline **Rabbit - Dermal - LD50** >2000 mg/kg OECD 402 Based on Gasoline **Rat - Inhalation - LC50 Vapour** >7630 mg/m³ [4 hours] Equivalent to OECD 403 Based on Gasoline **Rat - Inhalation - LC50 Vapour** >5610 mg/m³ [4 hours] Equivalent to OECD 403 Based on Gasoline
tert-butyl methyl ether	**Rat - Oral - LD50** >2000 mg/kg OECD 401 **Rat - Dermal - LD50** >2000 mg/kg OECD 402 **Rat - Inhalation - LC50 Vapour** 85 mg/l [4 hours] OECD 403
2-ethoxy-2-methylpropane	**Rat - Oral - LD50** >2003 mg/kg OECD 401 **Rat - Dermal - LD50** >2000 mg/kg OECD 402 **Rat - Inhalation - LC50 Vapour** >5.88 mg/l [4 hours] OECD 403
ethanol	**Rat - Oral - LD50** 10470 mg/kg OECD 401 Based on Ethanol **Rat - Inhalation - LC50 Vapour** 124.7 mg/l [4 hours] Equivalent to OECD 403 Based on Ethanol **Rat - Inhalation - LC50 Vapour** 116.9 mg/l [4 hours] Equivalent to OECD 403 Based on Ethanol **Rat - Inhalation - LC50 Vapour** 133.8 mg/l [4 hours]

SECTION 11: Toxicological information

	Equivalent to OECD 403 Based on Ethanol
2-methoxy-2-methylbutane	**Rat - Oral - LD50** 1602 mg/kg
Isobutanol	**Rat - Female - Oral - LD50** 3350 mg/kg **Rabbit - Male, Female - Dermal - LD50** 2460 mg/kg **Rat - Inhalation - LC50 Vapour** 19200 mg/m³ [4 hours]
methanol	**Rat - Oral - LD50** >1187 mg/kg not guideline Based on methanol **Rat - Inhalation - LC50 Vapour** 128.2 mg/l [4 hours] not guideline Based on methanol **Rat - Inhalation - LC50 Vapour** 130.7 mg/l [4 hours] not guideline Based on methanol **Rat - Inhalation - LC50 Vapour** >115.9 mg/l [4 hours] not guideline Based on methanol **Rat - Inhalation - LC50 Vapour** 87.5 mg/l [6 hours] not guideline Based on methanol **Rat - Inhalation - LC50 Vapour** 92.6 mg/l [6 hours] not guideline Based on methanol **Rat - Inhalation - LC50 Vapour** 82.1 mg/l [6 hours] not guideline Based on methanol

Conclusion/Summary [Product] Not classified. Based on available data, the classification criteria are not met.

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Ottokraftstoff	7621.95	30003	N/A	300.03	N/A
2-methoxy-2-methylbutane	1602	N/A	N/A	N/A	N/A
Isobutanol	3350	2460	N/A	N/A	N/A
methanol	100	300	N/A	3	N/A

Skin corrosion/irritation

Product/ingredient name **Result**

SECTION 11: Toxicological information

Gasoline	**Rabbit - Skin - Irritant** OECD 404 Based on Gasoline
toluene	**Rabbit - Skin - Irritant** EU B.4
tert-butyl methyl ether	**Rabbit - Skin - Irritation** OECD 404
2-ethoxy-2-methylpropane	**Rabbit - Skin - Non-irritant to skin.** OECD 404
ethanol	**Rabbit - Skin - Non-irritant to skin.** OECD 404 Based on Ethanol
Isobutanol	**Rabbit - Skin - Irritant** OECD 404 [ ] Based on 2-Methylpropan-1-ol; Isobutanol
methanol	**Rabbit - Skin - Non-irritant to skin.** not guideline Based on methanol

Conclusion/Summary [Product] Causes skin irritation.

Ingredient name	Conclusion/Summary
Gasoline	Causes skin irritation.

Serious eye damage/eye irritation

Product/ingredient name	Result
Gasoline	**Rabbit - Eyes - Non-irritating to the eyes.** Equivalent to OECD 405 Based on Gasoline
tert-butyl methyl ether	**Rabbit - Eyes - Non-irritating to the eyes.** OECD 405
2-ethoxy-2-methylpropane	**Rabbit - Eyes - Non-irritating to the eyes.** OECD 405
ethanol	**Rabbit - Eyes - Cornea opacity** OECD 405 Fully reversible in 7 days or less Based on Ethanol **Rabbit - Eyes - Iris lesion** OECD 405 Based on Ethanol **Rabbit - Eyes - Irritant** OECD 405 Based on Ethanol
Isobutanol	**Rabbit - Eyes - Severe irritant** OECD 405 Based on 2-Methylpropan-1-ol; Isobutanol
methanol	**Rabbit - Eyes - Non-irritating to the eyes.** not guideline Based on methanol

Conclusion/Summary [Product] Causes serious eye irritation.

Respiratory corrosion/irritation

Not available.

SECTION 11: Toxicological information

Respiratory or skin sensitization

Product/ingredient name	Result
Gasoline	**Guinea pig - skin** Equivalent to OECD 406 Not sensitising Based on Gasoline
tert-butyl methyl ether	**Guinea pig - skin** OECD 406 Not sensitising
2-ethoxy-2-methylpropane	**Guinea pig - skin** OECD 406 Not sensitising
ethanol	**Mouse - skin** not guideline Not sensitising **Mouse - skin** Equivalent to OECD 429 Not sensitising
methanol	**Guinea pig - skin** OECD 406 Not sensitising Based on methanol

Skin

Conclusion/Summary [Product] Not classified. Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Product/ingredient name	Result
Gasoline	**In vitro - Non-mammalian species** Equivalent to OECD 471 Result: Negative Based on Gasoline **In vitro - Mammal - species unspecified** Equivalent to OECD 476 Result: Negative Based on Gasoline **In vivo - Unspecified - Germ** EPA OPPTS 870.5395 Result: Negative Based on Gasoline vapour condensate **In vivo - Unspecified - Germ** Equivalent to OECD 475 Result: Negative Based on Gasoline
tert-butyl methyl ether	**In vitro - Non-mammalian species** EU B 13/14 Result: Negative **In vitro - Non-mammalian species** OECD 471 Result: Negative **In vitro - Non-mammalian species** OECD 476 Result: Negative **In vitro - Non-mammalian species** Equivalent to OECD 473 Result: Negative

SECTION 11: Toxicological information

	In vivo - Unspecified - Somatic Equivalent to OECD 486 Result: Negative **In vivo - Unspecified - Somatic** Equivalent to EPA OPPTS 870.5385 Result: Negative **In vivo - Unspecified - Somatic** Equivalent to EPA OPPTS 798.5385 Result: Negative
2-ethoxy-2-methylpropane	**In vitro - Non-mammalian species** OECD 471 Result: Negative **In vitro - Mammal - species unspecified** Equivalent to OECD 476 Result: Negative **In vitro - Mammal - species unspecified** Equivalent to OECD 473 Result: Negative **In vivo - Unspecified - Somatic** Equivalent to OECD 474 Result: Negative
ethanol	**In vitro - Non-mammalian species** Equivalent to OECD 473 Result: Negative Based on Ethanol **In vitro - Mammal - species unspecified** Equivalent to OECD 476 Result: Negative Based on Ethanol **In vivo - Unspecified - Germ** Equivalent to OECD 478 Result: Negative Based on Ethanol
methanol	**In vitro - Mammalian-Animal** OECD 471 Result: Negative Based on methanol **In vitro - Mammalian-Animal** OECD 476 Result: Negative Based on methanol **In vitro - Mammalian-Animal - Somatic** Result: Negative Based on methanol **In vivo - Mammalian-Animal - Somatic** OECD 474 Result: Negative Based on methanol **In vivo - Mammalian-Animal - Somatic** OECD 473 Result: Negative Based on methanol

Conclusion/Summary [Product] May cause genetic defects.

Ingredient name **Conclusion/Summary**

SECTION 11: Toxicological information

Gasoline	May cause genetic defects.
tert-butyl methyl ether	Not classified. Based on available data, the classification criteria are not met.
2-ethoxy-2-methylpropane	Not classified. Based on available data, the classification criteria are not met.
ethanol	Based on available data, the classification criteria are not met.
methanol	Not classified. Based on available data, the classification criteria are not met.
benzene	May cause genetic defects.

Carcinogenicity

Product/ingredient name	Result
Gasoline	**Rat - Inhalation - Unspecified** Equivalent to OECD 451 113 weeks Result: Negative Based on Gasoline **Mouse - Dermal - Unspecified** Equivalent to OECD 451 102 weeks Result: Negative Based on Gasoline
tert-butyl methyl ether	**Rat - Inhalation - Unspecified** EPA OTS 798.3300 2 years Result: Positive Limited relevance to man.
ethanol	**Mouse - Oral - Unspecified** EPA OPPTS 870.4200 105 weeks Result: Positive Based on Ethanol **Rat - Oral - Unspecified** Equivalent to OECD 104 weeks Result: Negative Based on Ethanol
methanol	**Mouse - Inhalation - Unspecified** OECD 453 >1.3 mg/l [24 months] Result: Negative Based on methanol **Rat - Inhalation - Unspecified** OECD 453 >1.3 mg/l [24 months] Result: Negative Based on methanol

Conclusion/Summary [Product] May cause cancer.

Ingredient name	Conclusion/Summary
Gasoline	May cause cancer
tert-butyl methyl ether	Not classified. Based on available data, the classification criteria are not met.
2-ethoxy-2-methylpropane	Chronic toxicity/carcinogenicity: No convincing evidence of carcinogenic effects in animal studies. Not classified. Based on available data, the classification criteria are not met.
ethanol	Based on available data, the classification criteria are not met. Mechanistic understanding suggests tumors observed in animal models are not relevant to man.
methanol	Not classified. Based on available data, the classification criteria are not met.
benzene	May cause cancer.

SECTION 11: Toxicological information

Reproductive toxicity

Product/ingredient name	Result
Gasoline	**Rat - Inhalation** OECD 416 Fertility effects: Negative Based on Gasoline vapour condensate **Rat - Inhalation** OECD 414 14 days Developmental: Negative Based on Gasoline
toluene	**Rat - Inhalation** Equivalent to EPA OTS 798 4356 12 days Effects: Effects on the embryo, foetus or newborn. Developmental: Positive **Rabbit - Inhalation** OECD 414 12 days Effects: no effects observed Developmental: Negative **Rat - Inhalation** OECD 416 [2 generation] Effects: Effects on fertility Fertility effects: Positive
tert-butyl methyl ether	**Rat - Inhalation** not guideline Effects: no effects observed Fertility effects: Negative second generation **Rat - Inhalation** Equivalent to OECD 414 9 days Effects: no effects observed Developmental: Negative no effects observed
2-ethoxy-2-methylpropane	**Rat - Oral** OECD 416 Fertility effects: Negative no effects observed **Rat - Oral** OECD 414 2 weeks Developmental: Negative no effects observed
ethanol	**Rat - Oral** Equivalent to OECD 416 Fertility effects: Positive Based on Ethanol **Rat - Inhalation** Equivalent to OECD 414 18 days Developmental: Negative Based on Ethanol
methanol	**Rat - Inhalation** Equivalent to OECD 414 [NOAEC] 0.13 to 1.3 mg/l [10 days] Effects: Effects observed at maternally toxic doses. Fertility effects: Negative Developmental: Negative

SECTION 11: Toxicological information

Based on methanol

Mouse - Inhalation
Equivalent to OECD 414 [NOAEC]
0.13 to 1.3 mg/l [5 days]
Effects: Effects observed at maternally toxic doses.
Fertility effects: Negative
Developmental: Negative
Based on methanol

Rat - Inhalation
Equivalent to OECD 414 [NOAEC]
0.27 to 2.39 mg/l
Effects: Effects observed at maternally toxic doses.
Fertility effects: Negative
Based on methanol, generation 2

Mouse - Inhalation
Equivalent to OECD 414 [NOAEC]
Effects: Effects observed at maternally toxic doses.
Fertility effects: Negative
Based on methanol, generation 2

Conclusion/Summary [Product] Suspected of damaging the unborn child.

Ingredient name	Conclusion/Summary
Gasoline	Development: Suspected of damaging the unborn child. Fertility: Not classified. Based on available data, the classification criteria are not met. Effects on or via lactation: Not classified. Based on available data, the classification criteria are not met.
toluene	Suspected of damaging the unborn child.
tert-butyl methyl ether	Development: Not classified. Based on available data, the classification criteria are not met. Fertility: Not classified. Based on available data, the classification criteria are not met. Effects on or via lactation: Not classified. Based on available data, the classification criteria are not met.
2-ethoxy-2-methylpropane	Development: Not classified. Based on available data, the classification criteria are not met. Fertility: Not classified. Based on available data, the classification criteria are not met. Effects on or via lactation: Not classified. Based on available data, the classification criteria are not met.
ethanol	Development: Based on available data, the classification criteria are not met. Fertility: Data lacking Effects on or via lactation: Based on available data, the classification criteria are not met.
n-hexane	Suspected of damaging fertility.
methanol	Development: Not classified. Based on available data, the classification criteria are not met. Fertility: Not classified. Based on available data, the classification criteria are not met. Effects on or via lactation: Not classified. Based on available data, the classification criteria are not met.
benzene	Development: Not classified. Based on available data, the classification criteria are not met. Weight of evidence Fertility: Not classified. Based on available data, the classification criteria are not met. Effects on or via lactation: Not classified. Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

Product/ingredient name	Result

SECTION 11: Toxicological information

Gasoline	STOT SE 3, H336 (Narcotic effects)
toluene	STOT SE 3, H336 (Narcotic effects)
2-ethoxy-2-methylpropane	STOT SE 3, H336 (Narcotic effects)
2-methoxy-2-methylbutane	STOT SE 3, H336 (Narcotic effects)
Isobutanol	STOT SE 3, H335 (Respiratory tract irritation) STOT SE 3, H336 (Narcotic effects)
n-hexane	STOT SE 3, H336 (Narcotic effects)
methanol	STOT SE 1, H370 (central nervous system (CNS), optic nerve)
cumene	STOT SE 3, H335 (Respiratory tract irritation)

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Result
toluene	STOT RE 2, H373 (central nervous system (CNS))
n-hexane	STOT RE 1, H372 (nervous system)
benzene	STOT RE 1, H372 (blood system)

Aspiration hazard

Product/ingredient name	Result
Gasoline	ASPIRATION HAZARD - Category 1
toluene	ASPIRATION HAZARD - Category 1
n-hexane	ASPIRATION HAZARD - Category 1
benzene	ASPIRATION HAZARD - Category 1
cumene	ASPIRATION HAZARD - Category 1

Information on likely routes of exposure Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

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

Ingestion Irritating to mouth, throat and stomach. Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs.

Skin contact Causes skin irritation.

Eye contact Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Ingestion Adverse symptoms may include the following:
nausea or vomiting

Skin contact Adverse symptoms may include the following:
irritation
redness

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

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

Inhalation Solvent "sniffing" (abuse) or intentional overexposure to vapours can produce serious central nervous system effects, including unconsciousness, and possibly death. May be harmful by inhalation if exposure to vapour, mists or fumes resulting from thermal decomposition products occurs. Vapour, mist or fume may irritate the nose, mouth and respiratory tract.

Ingestion If swallowed, may irritate the mouth, throat and digestive system. If swallowed, may cause abdominal pain, stomach cramps, nausea, vomiting, diarrhoea, dizziness and drowsiness.

Skin contact Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.

Eye contact Vapour, mist or fume may cause eye irritation. Exposure to vapour, mist or fume may cause stinging, redness and watering of the eyes.

SECTION 11: Toxicological information

General
This product contains n-hexane. Overexposure to n-hexane may cause progressive and potentially irreversible damage to the peripheral nervous system, particularly in the arms and legs. Animal studies have also shown that n-hexane overexposure may cause testicular injury. However, animal studies conducted with commercial hexane, containing 53% n-hexane, showed neither peripheral nervous system damage nor testicular injury at inhalation exposures up to 9000 ppm. Solvent "sniffing" (abuse) or intentional overexposure to vapours can produce serious central nervous system effects, including unconsciousness, and possibly death.

Carcinogenicity
May cause cancer. Risk of cancer depends on duration and level of exposure. Exposure to benzene may result in effects to the hematopoietic system causing blood disorders including anaemia and leukaemia.
Benzene is classified by EEC as a category 1 carcinogen - substances known to be carcinogenic to man.
IARC assessment: benzene - carcinogenic to humans (Group 1)

Mutagenicity
May cause genetic defects.

Developmental effects
Suspected of damaging the unborn child.

Fertility effects
No known significant effects or critical hazards.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Conclusion/Summary [Product]
This substance/mixture does not contain any components that are considered to have endocrine disrupting properties.

11.2.2 Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result
Gasoline	**Acute - EC50 - Fresh water** Modelled data Micro-organism 15.41 mg/l - Nominal [40 hours] Effect: growth inhibition **Acute - LL50 - Fresh water** OECD 203 Fish 10 mg/l - Nominal [96 hours] Effect: Mortality Based on Naphtha (petroleum), isomerisation **Acute - LL50 - Fresh water** EPA 66013-75-009 Fish 8.2 mg/l - Nominal [96 hours] Effect: Mortality Based on Naphtha (petroleum), light alkylate **Chronic - NOELR - Fresh water** OECD 204 Fish 2.6 mg/l - Nominal [14 days] Effect: Mortality Based on Naphtha (petroleum), light catalytic reformed **Chronic - LL50 - Fresh water** OECD 204 Fish 5.2 mg/l - Nominal [14 days] Effect: Mortality Based on Naphtha (petroleum), light catalytic reformed **Acute - EL50 - Fresh water** OECD 202 Daphnia 4.5 mg/l - Nominal [48 hours] Effect: Mobility Based on straight-run light gasoline

SECTION 12: Ecological information

Acute - NOELR - Fresh water
OECD 202
Daphnia
0.5 mg/l - Nominal [48 hours]
Effect: Mobility
Based on Straight run gas oil

Chronic - NOELR - Fresh water
OECD 211
Daphnia
2.6 mg/l - Nominal [21 days]
Effect: Reproduction
Based on Naphtha (petroleum), light alkylate

Chronic - EL50 - Fresh water
OECD 211
Daphnia
10 mg/l - Nominal [21 days]
Effect: Reproduction
Based on Naphtha (petroleum), light alkylate

Chronic - NOELR - Fresh water
OECD 211
Daphnia
16 mg/l - Nominal [21 days]
Effect: Mobility
Based on Naphtha (petroleum), light alkylate

Chronic - EL50 - Fresh water
OECD 211
Daphnia
>40 mg/l - Nominal [21 days]
Effect: Mobility
Based on Naphtha (petroleum), light alkylate

Acute - EL50 - Fresh water
OECD 201
Algae
3.1 mg/l - Nominal [72 hours]
Effect: (growth rate)
Based on Gasoline

Acute - NOELR - Fresh water
OECD 201
Algae
0.5 mg/l - Nominal [72 hours]
Effect: (growth rate)
Based on Gasoline

Acute - EL50 - Fresh water
OECD 201
Algae
3.7 mg/l - Nominal [96 hours]
Effect: (growth rate)
Based on Gasoline

Chronic - PNEC
Modelled data
soil, plants
>0.4 mg/kg

Chronic - NOELR - Fresh water
OECD 211 [Daphnia Magna Reproduction Test]
Fish
2.6 mg/l - Nominal [21 days]
Effect: Reproduction
Based on: Naphtha (petroleum), light alkylate; read across between species

Chronic - EL50 - Fresh water
OECD 211 [Daphnia Magna Reproduction Test]

SECTION 12: Ecological information

	Fish 10 mg/l - Nominal [21 days] Effect: Reproduction Based on: Naphtha (petroleum), light alkylate; read across between species
toluene	**Acute - LC50 - Fresh water** not guideline Fish 5.5 mg/l - Mean measured [96 hours] Effect: Mortality **Chronic - NOEC - Fresh water** not guideline Fish 1.4 mg/l - Mean measured [40 days] Effect: (growth rate) **Acute - EC50 - Fresh water** EPA 600/4-91-003 Daphnia 3.78 mg/l - Mean measured [48 hours] Effect: Mortality **Chronic - NOEC - Fresh water** EPA 600/4-91-003 Daphnia 0.74 mg/l - Mean measured [7 days] Effect: Reproduction **Acute - EC50 - Fresh water** not guideline Algae 134 mg/l - Nominal [3 hours] Effect: photosynthesis rate **IC50 - Fresh water** not guideline Micro-organism 84 mg/l - Nominal [24 hours] Effect: nitrification rate
tert-butyl methyl ether	**Acute - LC50 - Fresh water** EPA 1981 Fish 672 mg/l [96 hours] **Acute - LC50 - Marine water** OECD 203 Fish 574 mg/l [96 hours] **Acute - EC50 - Fresh water** EPA OPPTS 850.1010 Daphnia 472 mg/l [48 hours] **Acute - LC50 - Marine water** EPA OPPTS 850.1010 Crustaceans 200 mg/l [96 hours] **Chronic - NOEC - Fresh water** EPA OPPTS 850.1010 Daphnia 51 mg/l [21 days] **Chronic - NOEC - Marine water** EPA OPPTS 850.1010 Crustaceans 26 mg/l [28 days]

SECTION 12: Ecological information

2-ethoxy-2-methylpropane	**Acute - LC50 - Fresh water** OECD 203 Fish >974.1 mg/l [96 hours] Effect: Mortality **Chronic - NOEC - Fresh water** ASTM E1241-92 Fish 299 mg/l - Measured [31 days - Mortality] Effect: Mortality **Acute - EC50 - Fresh water** OECD 202 Daphnia 110 mg/l - Nominal [48 hours] Effect: Immobilisation **Acute - NOEC - Marine water** EPA OTS 797.1930 Crustaceans 25 mg/l [96 hours] **Chronic - NOEC - Fresh water** EPA OPPTS 850.1300 Daphnia 51 mg/l - Measured [21 days] Effect: Reproduction **Chronic - NOEC - Marine water** EPA OPPTS 850.1350 Crustaceans 3.39 mg/l - Measured [28 days] Effect: Reproduction **Acute - NOEC - Fresh water** OECD 201 Algae 7.5 mg/l - Measured [72 hours] Effect: (growth rate)
ethanol	**Acute - LC50 - Fresh water** EPA E03 - 05 Fish 15.3 g/l [96 hours] Based on Ethanol **Acute - LC50 - Fresh water** EPA E03 - 05 Fish 14.2 g/l [96 hours] Based on Ethanol **Acute - LC50 - Fresh water** ASTM E729 - 80 Daphnia 5012 mg/l [48 hours] Based on Ethanol **Chronic - LC50** not guideline Daphnia 2 mg/l [10 days] Based on Ethanol **Chronic - LC50** not guideline Daphnia 9.6 mg/l [9 days] Based on Ethanol **EC50**

SECTION 12: Ecological information

	Equivalent to OECD 201 Algae 675 mg/l [4 days] Based on Ethanol **EC50** EPA OTS 797.1160 Aquatic plants 4432 mg/l [7 days] Based on Ethanol
methanol	**Acute - LC50 - Fresh water** EPA 660/3-75-009 Fish 15400 mg/l [96 hours] Based on methanol **Acute - EC50 - Fresh water** DIN 38412 Teil 11 Other >10000 mg/l [48 hours] Based on methanol **Acute - EC50 - Fresh water** OECD 201 Algae 22000 mg/l [96 hours] Based on methanol **Acute - EC50 - Fresh water** EPA 850.54 Algae 22000 mg/l [96 hours] Based on methanol

Environmental hazards Toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Expected to be biodegradable. Non-persistent per IMO criteria

Product/ingredient name	Result
toluene	not guideline 50% [2.59 days] Phototransformation in Air **Aerobic** ASTM D1252-67 69% [5 days] - Readily **Aerobic** APHA 219 80% [20 days] - Readily **Aerobic** APHA 219 86% [20 days] - Readily **Aerobic** OECD 301 C 100% [14 days] - Readily
tert-butyl methyl ether	**Aerobic** OECD 301 D 1.8% [28 days] - Not readily OECD 301 D 9.24% [28 days] - Not readily not guideline 100% [1.25 days] Rapid degradation by adapted microbes. **Aerobic**

SECTION 12: Ecological information

	OECD 301 D 0% [28 days] - Not readily **Aerobic** Modelled data 61 to 69% [151 days] Biodegradation in Soil-Aerobic **Anaerobic** Modelled data 0% [250 days] Biodegradation in Soil-Anaerobic
2-ethoxy-2-methylpropane	**<178 gO_2/g** OECD 301 D 6.6% [7 days] - Not readily not guideline 100% [1.25 days] Rapid degradation by adapted microbes. not guideline 0% [244 days] Sediment / Water not guideline 66 to 71% [151 days] Biodegradation in Soil
ethanol	EPA 74% [5 days] - Readily Based on Ethanol EPA 74% [10 days] - Readily Based on Ethanol EPA 95% [15 days] - Readily Based on Ethanol EPA 84% [20 days] - Readily Based on Ethanol
methanol	not guideline 82.7% [5 days] - Readily Based on methanol not guideline 82.7% [10 days] - Readily Based on methanol not guideline 82.7% [15 days] - Readily Based on methanol not guideline 82.7% [20 days] - Readily Based on methanol

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
tert-butyl methyl ether	101.6 days [Soil] [20 °C]	-	-
Isobutanol	-	-	Readily
cumene	-	-	Readily

12.3 Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

SECTION 12: Ecological information

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Gasoline	2 to 7	-	High
toluene	2.73	90	Low
tert-butyl methyl ether	1.04	1.5	Low
2-ethoxy-2-methylpropane	1.48	-	Low
ethanol	-0.35	-	Low
2-methoxy-2-methylbutane	1.55	-	Low
Isobutanol	1	-	Low
n-hexane	4	-	High
methanol	-0.77	<10	Low
benzene	2.13	11	Low
cumene	3.55	-	Low

12.4 Mobility in soil

Soil/water partition coefficient

Product/ingredient name	Value
toluene	logKoc: 2.1 Koc: 117.115
tert-butyl methyl ether	logKoc: 1.3 Koc: 18.7752
2-ethoxy-2-methylpropane	logKoc: 1.5 Koc: 31.4026
ethanol	logKoc: 0.2 Koc: 1.59008
2-methoxy-2-methylbutane	logKoc: 1.7 Koc: 53.372
Isobutanol	logKoc: 1.1 Koc: 12.0246
n-hexane	logKoc: 2.2 Koc: 165.951
methanol	logKoc: 0.44 Koc: 2.75443
benzene	logKoc: 1.7 Koc: 56.1326
cumene	logKoc: 2.7 Koc: 521.484

Results of PMT and vPvM assessment

Product/ingredient name	PMT	P	M	T	vPvM	vP	vM
Gasoline	No	No	No	No	No	No	No
toluene	No	No	No	No	No	No	No
tert-butyl methyl ether	No	No	No	No	No	No	No
2-ethoxy-2-methylpropane	No	No	No	No	No	No	No
ethanol	No	No	No	No	No	No	No
2-methoxy-2-methylbutane	No	No	No	No	No	No	No
Isobutanol	No	No	No	No	No	No	No
n-hexane	No	No	No	No	No	No	No
methanol	No	No	No	No	No	No	No
benzene	No	No	No	No	No	No	No
cumene	No	No	No	No	No	No	No

Mobility Spillages may penetrate the soil causing ground water contamination.

Conclusion/Summary The product does not meet the criteria to be considered as a PMT or vPvM.

12.5 Results of PBT and vPvB assessment

Regulation (EC) No. 1907/2006 [REACH]

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
Gasoline	N/A	N/A	N/A	Yes	N/A	N/A	N/A
toluene	No	N/A	No	Yes	No	N/A	No
tert-butyl methyl ether	No	No	No	No	No	No	No
2-ethoxy-2-methylpropane	No	N/A	N/A	No	N/A	N/A	N/A
ethanol	No	N/A	N/A	No	N/A	N/A	N/A
2-methoxy-2-methylbutane	No	N/A	N/A	No	N/A	N/A	N/A
Isobutanol	No	N/A	N/A	No	N/A	N/A	N/A
n-hexane	N/A	N/A	N/A	Yes	N/A	N/A	N/A
methanol	No	N/A	No	No	No	N/A	No
benzene	No	N/A	No	Yes	No	N/A	No
cumene	N/A	N/A	N/A	Yes	N/A	N/A	N/A

SECTION 12: Ecological information

Regulation (EC) No. 1272/2008 [CLP]

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
Gasoline	No	No	No	No	No	No	No
toluene	No	No	No	No	No	No	No
tert-butyl methyl ether	No	No	No	No	No	No	No
2-ethoxy-2-methylpropane	No	No	No	No	No	No	No
ethanol	No	No	No	No	No	No	No
2-methoxy-2-methylbutane	No	No	No	No	No	No	No
Isobutanol	No	No	No	No	No	No	No
n-hexane	No	No	No	No	No	No	No
methanol	No	No	No	No	No	No	No
benzene	No	No	No	No	No	No	No
cumene	No	No	No	No	No	No	No

Conclusion/Summary Regulation (EC) No. 1272/2008 [CLP] The product does not meet the criteria to be considered as a PBT or vPvB.

12.6 Endocrine disrupting properties

Conclusion/Summary [Product] This substance/mixture does not contain any components that are considered to have endocrine disrupting properties.

Other ecological information Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

12.7 Other adverse effects No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal Where possible, arrange for product to be recycled. Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations.

Hazardous waste Yes.

European waste catalogue (EWC)

Waste code	Waste designation
13 07 02*	Petrol

However, deviation from the intended use and/or the presence of any potential contaminants may require an alternative waste disposal code to be assigned by the end user.

Packaging

Methods of disposal Where possible, arrange for product to be recycled. Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations.

Special precautions This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Empty containers represent a fire hazard as they may contain flammable product residues and vapour. Never weld, solder or braze empty containers. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Empty packages may contain some remaining product. Hazard warning labels are a guide to the safe handling of empty packaging and should not be removed.

References Commission 2014/955/EU
Directive 2008/98/EC

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number or ID number	UN1203	UN1203	UN1203	UN1203
14.2 UN proper shipping name	GASOLINE or MOTOR SPIRIT	GASOLINE or MOTOR SPIRIT	GASOLINE or MOTOR SPIRIT. Marine pollutant	GASOLINE or MOTOR SPIRIT

SECTION 14: Transport information

14.3 Transport hazard class(es)	3 	3 	3 	3 
14.4 Packing group	II	II	II	II
14.5 Environmental hazards	Yes.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Additional information	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Hazard identification number** 33 **Tunnel code** D/E	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Remarks** Table: C. Danger: 3+N2+CMR+F	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Emergency schedules** F-E, S-E	The environmentally hazardous substance mark may appear if required by other transportation regulations.

14.6 Special precautions for user Not available.

ADR/RID Classification code: F1

ADN Classification code: F1

14.7 Maritime transport in bulk according to IMO instruments

Remarks MARPOL Annex 1 rules apply for bulk shipments by sea. Category: gasoline and spirits

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

Ingredient name	Intrinsic property	Status	Reference number	Date of revision
n-hexane	Substance of equivalent concern for human health	Candidate	D(2025) 7771-DC	2/4/2025

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Product/ingredient name	%	Designation [Usage]
Ottokraftstoff	≥90	3 3 [Lamp fuel] 3 [Grill lighter fluid] 28 29
Gasoline	<100	28 29
methanol	≤1	69

Labelling Restricted to professional users.

Other regulations

REACH Status The company, as identified in Section 1, sells this product in the EU in compliance with the current requirements of REACH.

United States inventory (TSCA 8b) Not determined.

Australia inventory (AIIC) Not determined.

Canada inventory Not determined.

SECTION 15: Regulatory information

China inventory (IECSC) Not determined.

Japan inventory (CSCL) Not determined.

Korea inventory (KECI) Not determined.

Philippines inventory (PICCS) Not determined.

Taiwan Chemical Substances Inventory (TCSI) Not determined.

Explosive precursors Not applicable.

Ozone depleting substances (EU 2024/590)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Ingredient name	Annex	Status
Benzene	Annex I - Part 1	Listed

Persistent Organic Pollutants

Not listed.

EU - Water framework directive - Priority substances

The following components are listed:

Benzene

Seveso Directive

This product is controlled under the Seveso Directive.

Named substances

Name
Petroleum products and alternative fuels (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams) (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)

National regulations

Hazardous incident ordinance

This product is controlled under the Germany Hazardous Incident Ordinance.

Named substances

Name	Reference number
Gasolines and Naphthas	2.3.1

Hazard class for water 3 (classified according AwSV)

Prohibited Chemicals Regulation (ChemVerbotsV) When placed on the market in Germany, this product is subject to the Prohibited Chemicals Regulation (ChemVerbotsV).

Occupational restrictions Observe employment restrictions in the following:
Gesetz zum Schutz der arbeitenden Jugend (Jugendarbeitsschutzgesetz – JArbSchG)
Gesetz zum Schutz von Müttern bei der Arbeit, in der Ausbildung und im Studium (Mutterschutzgesetz – MuSchG)

15.2 Chemical safety assessment A Chemical Safety Assessment has been carried out for one or more of the substances within this mixture. A Chemical Safety Assessment has not been carried out for the mixture itself.

SECTION 16: Other information

Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
CSA = Chemical Safety Assessment
CSR = Chemical Safety Report
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level

SECTION 16: Other information

EINECS = European Inventory of Existing Commercial chemical Substances
ES = Exposure Scenario
EUH statement = CLP-specific Hazard statement
EWC = European Waste Catalogue
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
OECD = Organisation for Economic Co-operation and Development
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SADT = Self-Accelerating Decomposition Temperature
SVHC = Substances of Very High Concern
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TWA = Time weighted average
UN = United Nations
UVCB = Complex hydrocarbon substance
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative
Varies = may contain one or more of the following 64741-88-4 / RRN 01-2119488706-23, 64741-89-5 / RRN 01-2119487067-30, 64741-95-3 / RRN 01-2119487081-40, 64741-96-4/ RRN 01-2119483621-38, 64742-01-4 / RRN 01-2119488707-21, 64742-44-5 / RRN 01-2119985177-24, 64742-45-6, 64742-52-5 / RRN 01-2119467170-45, 64742-53-6 / RRN 01-2119480375-34, 64742-54-7 / RRN 01-2119484627-25, 64742-55-8 / RRN 01-2119487077-29, 64742-56-9 / RRN 01-2119480132-48, 64742-57-0 / RRN 01-2119489287-22, 64742-58-1, 64742-62-7 / RRN 01-2119480472-38, 64742-63-8, 64742-65-0 / RRN 01-2119471299-27, 64742-70-7 / RRN 01-2119487080-42, 72623-85-9 / RRN 01-2119555262-43, 72623-86-0 / RRN 01-2119474878-16, 72623-87-1 / RRN 01-2119474889-13

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Flam. Liq. 1, H224	On basis of test data
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Muta. 1B, H340	Calculation method
Carc. 1B, H350	Calculation method
Repr. 2, H361d	Calculation method
STOT SE 3, H336	Calculation method
Asp. Tox. 1, H304	Calculation method
Aquatic Chronic 2, H411	Calculation method

Full text of abbreviated H statements

H224	Extremely flammable liquid and vapour.
H225	Highly flammable liquid and vapour.
H226	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.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H350	May cause cancer.
H361d	Suspected of damaging the unborn child.
H361f	Suspected of damaging fertility.
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.

SECTION 16: Other information

	H411	Toxic to aquatic life with long lasting effects.
	H412	Harmful to aquatic life with long lasting effects.
Full text of classifications [CLP/GHS]	Acute Tox. 3	ACUTE TOXICITY - Category 3
	Acute Tox. 4	ACUTE TOXICITY - Category 4
	Aquatic Chronic 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
	Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
	Asp. Tox. 1	ASPIRATION HAZARD - Category 1
	Carc. 1A	CARCINOGENICITY - Category 1A
	Carc. 1B	CARCINOGENICITY - Category 1B
	Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
	Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
	Flam. Liq. 1	FLAMMABLE LIQUIDS - Category 1
	Flam. Liq. 2	FLAMMABLE LIQUIDS - Category 2
	Flam. Liq. 3	FLAMMABLE LIQUIDS - Category 3
	Muta. 1B	GERM CELL MUTAGENICITY - Category 1B
	Repr. 2	REPRODUCTIVE TOXICITY - Category 2
	Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
	STOT RE 1	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1
	STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
	STOT SE 1	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 1
	STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

History

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Prepared by	Product Stewardship

Indicates information that has changed from previously issued version.

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