

Safety Data Sheet as per EC Regulation No. 1907/2006



Eurosuper (Ethanol)
PdNr. 436070

Date of issue: 01.10.2007
Revision Date: 16.05.2018

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

1.1 Product identifier

Trade name	: Eurosuper (Ethanol)
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1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture

Intended usage	: Operation of Otto carburettor engines including those with systems for the reduction of pollutants.
Identified uses according to CSR (Chemical Safety Report)	: <u>Use at industrial sites</u> 01a - Distribution of substance 12a - Use as a fuel - Industrial <u>Formulation or re-packing</u> 02 - Formulation & (re)packing of substances and mixtures <u>Widespread use by professional workers</u> 12b - Use as a fuel - Professional <u>Consumer use</u> 12c - Use as a fuel - Consumer

For details related to the Uses please see Annex.

1.3 Details of the supplier of the safety data sheet

Full address Manufacturer, importer, supplier	: ОМВ БЪЛГАРИЯ ООД Бул. Цариградско шосе 90, Капитал Форт бизнес център, Сграда А, Ет. 20 1784 София България
Telephone	: +359 2 932 9710
E-mail address of the competent person	: info.msds@omv.com

1.4 Emergency telephone number

+359 2 932 9710	Mon - Fri: 09:00 - 17:00
+359 2 9154 409	National Toxicology Center, Hospital for Active Medical Treatment and Emergency Medicine "N.I. Pirogov" / 24 hr

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (EC Regulation No 1272/2008)

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

For the full text of classifications referred to in this section and H-phrases, see Section 16.

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2.2 Label elements

Labelling (EC Regulation No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements :
H224 Extremely flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H336 May cause drowsiness or dizziness.
H340 May cause genetic defects.
H350 May cause cancer.
H361d Suspected of damaging the unborn child.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements :
Prevention:
P201 Obtain special instructions before use.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P331 Do NOT induce vomiting.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
Disposal:
P501 Dispose of contents/container according to the disposal routes specified by law.

Additional Labelling:

Restricted to professional users due to classification as carcinogenic Category 1B, except for fuel uses.

2.3 Other hazards

Remarks : Particular danger of slipping caused by the escaped or spilled product.
Further dangers to man and environment caused by the product are not known.
According to the results of current assessment(s), contains no substance assessed to be a PBT or a vPvB

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

not applicable

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3.2 Mixtures

Chemical nature	Complex mixture of volatile hydrocarbons, that contains paraffins, naphthenes, olefins and aromatics with C-number predominantly from 4 to 12. Can contain oxygenates. Can also contain small amounts of proprietary performance-enhancing additives.
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Hazardous ingredients

Chemical Name	<u>Index-No.</u> <u>CAS-No.</u> <u>ENECS-No./ELINCS No.</u> <u>Registration number</u>	Classification (EC Regulation No 1272/2008)	Concentration [%W/W]
Gasoline	649-378-00-4 86290-81-5 289-220-8 01-2119471335-39-0144	Flam. Liq. 1; H224 Skin Irrit. 2; H315 Asp. Tox. 1; H304 Repr. 2; H361d Muta. 1B; H340 Carc. 1B; H350 STOT SE 3; Inhalation H336 Aquatic Chronic 2; H411	>= 85,00
2-ethoxy-2-methylpropane (ETBE)	- 637-92-3 211-309-7 01-2119452785-29-0015	Flam. Liq. 2; H225 STOT SE 3; Inhalation H336	<= 15,00
tert-butyl methyl ether (MTBE)	603-181-00-X 1634-04-4 216-653-1 01-2119452786-27	Flam. Liq. 2; H225 Skin Irrit. 2; H315	<= 15,00
Ethanol	603-002-00-5 64-17-5 200-578-6 01-2119457610-43	Flam. Liq. 2; H225 Eye Irrit. 2; H319	<= 5,00

These values do not represent any product specification / max. possible mass percentages for classification
For the full text of classifications referred to in this section and H-phrases, see Section 16.

Marker for classification

Chemical Name	<u>Index-No.</u> <u>CAS-No.</u> <u>ENECS-No./ELINCS No.</u>	Classification (EC Regulation No 1272/2008)	Concentration [%W/W]
Toluene	601-021-00-3 108-88-3 203-625-9	Flam. Liq. 2; H225 Skin Irrit. 2; H315 Asp. Tox. 1; H304 Repr. 2; H361d STOT SE 3; Inhalation H336 STOT RE 2; H373 Aquatic Chronic 3; H412	>= 3,00

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Chemical Name	<u>Index-No.</u> <u>CAS-No.</u> <u>ELINCS-No./ELINCS No.</u>	Classification (EC Regulation No 1272/2008)	Concentration [%W/W]
n-hexane	601-037-00-0 110-54-3 203-777-6	Flam. Liq. 2; H225 Repr. 2; H361f Asp. Tox. 1; H304 STOT RE 2; H373 Skin Irrit. 2; H315 STOT SE 3; Inhalation H336 Aquatic Chronic 2; H411	< 3,00
Benzene	601-020-00-8 71-43-2 200-753-7	Flam. Liq. 2; H225 Carc. 1A; H350 Muta. 1B; H340 STOT RE 1; H372 Asp. Tox. 1; H304 Eye Irrit. 2; H319 Skin Irrit. 2; H315 Aquatic Chronic 3; H412	>= 0,10

These values indicate the mass fractions with reference to the relevant classification limits
For the full text of classifications referred to in this section and H-phrases, see Section 16.

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SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice	: Always assess scene safety prior to attempting to rescue casualties and administering first aid. Own protection of the first responders to be considered. Always call for help prior to helping the casualty. Before attempting to rescue casualties, isolate area from all potential sources of ignition including disconnecting electrical supply, except for the critical areas. Ensure adequate ventilation and check that a safe, breathable atmosphere is present before entry into confined spaces. Drench contaminated clothing with water before removing to avoid risk of sparks from static electricity.
Inhalation	: After inhaling the vapours during an accident affected persons are to be taken to the fresh air. Keep warm and at rest. If the casualty is conscious, place in the recovery position. (upright or leaning slightly forward in a sitting position). If casualty is unconscious and not breathing: Ensure that there is no obstruction to breathing and give artificial respiration by trained personnel. If necessary, give external cardiac massage and obtain medical advice. If casualty is unconscious and breathing: place in the recovery position and keep the head below the level of the torso. Administer oxygen if necessary. Obtain medical attention if casualty has an altered state of consciousness or if symptoms do not resolve.
Skin contact	: Remove contaminated clothing, contaminated footwear and dispose of safely. Wash affected area with soap and water. (10 to 15 minutes). Never use gasoline, kerosene or other solvents for washing of contaminated skin. Seek medical attention if skin irritation, swelling or redness develops and persists. When using high-pressure equipment, injection of product can occur. If high-pressure injuries occur, immediately seek professional medical attention. Do not wait for symptoms to develop. For minor thermal burns: Cool the burn. Hold the burned area under cold running water for at least five minutes, or until the pain subsides. However, body hypothermia must be avoided.
Eye contact	: Upon the contact with the eye rinse it under running water and with the lids forced apart or by means of the eye rinsing bottle for 15 minutes. Remove contact lenses if safe and easy to do so and continue rinsing. Avoid contaminated water coming into contact with the other eye or face. In case of persistent discomforts an ophthalmologist is to be consulted.
Ingestion, Intake into the Lungs	: In case of ingestion, always assume that aspiration has occurred. The casualty should be sent immediately to hospital. Do not wait for symptoms to develop. Ingestion (swallowing) of this material may result in an altered state of consciousness and loss of coordination. Do not induce vomiting as there is high risk of aspiration. If vomiting occurs, the head should be kept low so that the vomit does not enter the lungs (aspiration). In case of suspicion (vomiting, coughing, breathing troubles) a doctor is to be consulted. Do not give anything by mouth to an unconscious person.

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4.2 Most important symptoms and effects, both acute and delayed

Symptoms	: Nausea, vomiting, and diarrhea as well as the danger of a chemical pneumonitis due to the aspiration during the swallowing or vomiting. Product vapours in high concentrations may cause irritations of the eyes and mucous skins (nose, throat). Upon a long-term inhalation of concentrated vapours headache, vertigo, euphoria, excitation, tremors, tonic-clonic spasms, unconsciousness, circulatory insufficiency, and paralysis of the central respiratory system may occur. Very high concentrations lead to unconsciousness after short-term exposure already. Skin Contact Symptoms: reddening, irritation. Eye Contact Symptoms: slight irritation (unspecific).
Effects	: Upon aspiration risk of a chemical pneumonitis.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	: If necessary, in-patient treatment in a hospital to be initiated. Upon the intake of doses of more than 1 to 2 ml per kg of body weight activated carbon (approx. 50 g) is to be given and the person hospitalised. Sedative medicaments (upon medical advice) to be applied in the case of strong excitation.
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SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	: In the case of a small source of fire: dry extinguishing powder; carbon dioxide, other inert gases (subject to regulations). Sand or earth. In the case of a large source of fire: foam or water in a spraying jet. Foam (trained personnel only); Water fog (trained personnel only);
Unsuitable extinguishing media	: Water in a full jet; (could cause splattering and spread the fire); Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

5.2 Special hazards arising from the substance or mixture

Particular hazards due to the substance or the mixture, its products of combustion, or the gases produced during the combustion	: This substance will float and can be reignited on surface water. Evaporated product is heavier than air and rests close to the bottom. The vapours can produce an explosive mixture together with air. Prevent the penetration into the sewer system and rooms at low levels. Prevent the penetration into the soil and waters. Sources of ignition to be kept off. Use explosion-proof and solvent resistant devices only. This substance can propagate on the surface and reignite. (Incomplete) combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates and gases, including carbon monoxide and unidentified organic and inorganic compounds.
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5.3 Advice for firefighters

Special protecting equipment	: In case of a large fire or in confined or poorly ventilated spaces, wear full fire resistant and chemical resistant protective clothing and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
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Further information	:	Containers in the close environment are to be cooled immediately using water spraying and removed from the dangerous zone, if possible. Fire residues and contaminated extinguishing water have to be properly disposed of in accordance with the local official regulations. Ensure a reserve of extinguishing water.
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SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Approaching only in the direction of the wind (changes of the wind directions to be considered). Stop or contain leak at the source if safe to do so. Remove all the sources of ignition in the close environment. Avoid direct contact with released material. Stay upwind. In case of large spillages, alert occupants in downwind areas. Make explosimeter measurements for determining the dangerous zone and cordon it off. Keep unconcerned persons off the site. Alert emergency personnel. Except in case of small spillages: The feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency. If required, notify relevant authorities according to all applicable regulations. Personal protection equipment for emergency responders. Small spillages: normal antistatic working clothes are usually adequate. Large spillages: full body suit of chemically resistant and antistatic material; if necessary heat resistant and insulated. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons. Note: gloves made of PVA (Polyvinyl Alcohol) are not water-resistant, and are not suitable for emergency use. Work helmet. Antistatic non-skid safety shoes or boots. Goggles and/or face shield, if splashes or contact with eyes is possible or anticipated. Respiratory protection: A half or full-face respirator with filter(s) for organic vapours or a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used. Affected rooms to be ventilated thoroughly. Avoid contact with the skin. Avoid the formation of sparks. Eliminate all ignition sources if safe to do so (e.g. electricity, sparks, fires, flares). In the dangerous zone non explosion-proof machinery, devices, and vehicles are to be stopped, no smoking, no actuation of any switch or electrical device that may produce a spark. Evaporated product is heavier than air and propagates close to the ground.
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6.2 Environmental precautions

Environmental precautions	:	Escaping point to be sealed. When inside buildings or confined spaces, ensure adequate ventilation. Preventing the penetration into the sewer system, surface waters, and the groundwater by erecting sand and/or earth blockings or by means of other suitable blocking measures. In the case of escapes into surface waters, the sewer system, or into the soil the competent authorities are to be informed.
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6.3 Methods and materials for containment and cleaning up

Suitable processes for cleaning or absorption or containment	: Major amounts to be aspirated or pumped over. Residual amounts to be absorbed and/or contained using non-flammable absorbing material like e.g. sand, earth, or oil binding agents. Large spillages may be cautiously covered with foam, if available, to limit vapour cloud formation. Do not use direct jets. Note: When the binding agent is completely loaded the evaporation rate increases and thus, the risk of a fire. In case of soil contamination, remove contaminated soil and treat in accordance with local regulations. 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. Large spillages in open waters should be contained with floating barriers or other mechanical means and recovered, only if this is strictly necessary and if fire/explosion risks can be adequately prevented. Otherwise control the spreading of the spillage, and let the substance evaporate naturally. The use of dispersants should be advised by an expert, and, if required, approved by local authorities. All waste is to be filled in properly marked hazardous goods containers and disposed of in accordance with the official regulations.
Unsuitable processes for cleaning or absorption or containment	: No data available

6.4 Reference to other sections

See also section 8 (personal protective equipment) and 13 (disposal).

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Information on the safe handling	: Obtain special instructions before use. Only to be used within a closed system. Vapours to be aspirated at the outlet point. Exhaust gas and exhaust air to be evacuated into the atmosphere only via suitable separators and/or scrubbers. If required ventilation of the room at the bottom level. Contact with the skin, eyes, and clothing to be avoided. Do not ingest. Vapours must not be inhaled. Use personal protective equipment as required. Spilling of the product to be avoided.
Advice on protection against fire and explosion	: Evaporated product is heavier than air and rests close to the bottom. The vapours can produce an explosive mixture together with air. Prevent the penetration into the sewer system and rooms at low levels. Prevent the penetration into the soil and waters. Measures against electrostatical charging to be taken. All devices to be earthed or connected via conductors. Sources of ignition to be kept off. Explosion-proof devices / valves and non-sparking tools to be used. Do not use compressed air for filling, discharging, or handling operations. Ensure that all relevant regulations regarding explosive atmospheres, and handling and storage facilities of flammable products, are followed.

See also section 8 (personal protective equipment) and 13 (disposal).

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7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	: Storage area layout, tank design, equipment and operating procedures must comply with the relevant European, national or local legislation. Storage installations should be designed with adequate bunds so as to prevent ground and water pollution in case of leaks or spills. Containers to be kept tightly closed and at a thoroughly ventilated place. Only approved stationary containers to be used. All tanks and devices to be earthed or connected via conductors. Storage upon a suitable underground. Normally, a tightly sealed and resistant storage room is required. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations. Before entering storage tanks and beginning work in enclosed spaces, the air must be tested for oxygen content, air pollutants and explosive atmosphere. Recommended materials: For containers, or container linings use mild steel, stainless steel. Unsuitable materials: Some synthetic materials may be unsuitable for containers or container linings depending on the material specification and intended use. Compatibility should be checked with the manufacturer. If the product is supplied in containers: Keep only in the original container. Keep containers properly labelled. Protect from the sunlight. Light hydrocarbon vapours can build up in the headspace of containers. These can cause flammability / explosion hazards. Open slowly in order to control possible pressure release. Emptied containers may contain residues of flammable product. Do not weld, solder, drill, cut or incinerate empty containers, unless they have been properly cleaned. Attention! In particular in fully emptied containers, residues of flammable products can lead to the formation of explosive atmospheres.
Further information on storage conditions	: Heat influences to be avoided. Sources of ignition to be kept off.

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Advice on common storage	:	Do not store together with: explosive hazardous substances (LGK 1), gases (LGK 2 A), other explosive hazardous substances (LGK 4.1 A), flammable solid hazardous substances (LGK 4.1 B), pyrophoric or self-heating hazardous substances (LGK 4.2), hazardous substances which develop flammable gases upon contact with water (LGK 4.3), highly oxidising hazardous substances (LGK 5.1 A), ammonium nitrate and preparations containing ammonium nitrate (LGK 5.1 C), organic peroxides and self-reactive hazardous substances (LGK 5.2), non-combustible, acutely toxic cat. 1 and 2 / very toxic hazardous substances (LGK 6.1 B), infectious substances (LGK 6.2), radioactive substances (LGK 7), Restrictions for storage with: oxidising hazardous substances (LGK 5.1 B), non-combustible hazardous substances that are of acute toxicity cat. 3 / toxic or with chronic effects (LGK 6.1 D), combustible solids (LGK 11), other combustible and non-combustible substances (LGK 10-13), Due to specific storage instructions and because of particular properties of the substances within a storage facility, other restrictions may result from the assessment of the hazards. TRGS 509 resp. 510 must be observed.
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7.3 Specific end use(s)

Information relating to special applications	:	To be used only for the intended purpose, as mentioned in Section 1.2. For information on specific uses refer to the exposure scenarios in the annex.
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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational limit value of the product

No data known

Occupational limit value of the components

Components: Intentional ingredients of mixtures and/or markers for substance classification

tert-butyl methyl ether (MTBE) - CAS-No.: 1634-04-4 - EINECS-No.: 216-653-1

Type	mg/m ³	ppm	Exceeding coefficient	Note	Source
Exposure limit at the workplace (8 hr)	183,5	50	-	-	Directive 2009/161/EU

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Type	mg/m3	ppm	Exceeding coefficient	Note	Source
Short-term exposure level (STEL) at the workplace (15 min)	367	100	-	-	Directive 2009/161/EU

Toluene - CAS-No.: 108-88-3 - EINECS-No.: 203-625-9

Type	mg/m3	ppm	Exceeding coefficient	Note	Source
Exposure limit at the workplace (8 hr)	192	50	-	H	Directive 2006/15 EC
Short-term exposure level (STEL) at the workplace (15 min)	384	100	-	H	Directive 2006/15 EC

Benzene - CAS-No.: 71-43-2 - EINECS-No.: 200-753-7

Type	mg/m3	ppm	Exceeding coefficient	Note	Source
EC limit value (8 hr)	3,25	1	-	H	Directive 2004/37/EC

A Fraction passing the alveoles
E Inhalable fraction
H Skin resorptive
Y A risk of teratogenic effects need not be feared when the occupational exposure limit and the biological limit value (BLV) are respected.
Z A risk of teratogenic effects cannot be excluded even if the OEL and the BLV are respected.
Sh danger of skin sensitisation
SP danger of photo contact sensitisation
Sa respiratory sensitiser
Sah Risk of sensitisation of the respiratory tract and skin
X carcinogenic substance of the Cat. 1A/1B

Biological limit values of the product

No data known

Biological limit values of the components

No data known

DNEL or DMEL of product

Not applicable for mixtures.

DNEL or DMEL of components

Gasoline	:	Exposure routes: Worker, acute exposure, systemic, inhalation Value: 1300 mg/m3 DNEL, Most sensitive endpoint: (by inhalation) LOAEL 4320 mg/m3
	:	Exposure routes: Worker, acute exposure, local, inhalation Value: 1100 mg/m3 DNEL, Most sensitive endpoint: irritation (respiratory tract) LOAEL 2400 mg/m3

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	Exposure routes: Worker, long-term exposure, local, inhalation Value: 840 mg/m3 DNEL, Most sensitive endpoint: irritation (respiratory tract) NOAEL 10000 mg/m3
	Exposure routes: General population, acute exposure, systemic, inhalation Value: 1200 mg/m3 DNEL, Most sensitive endpoint: (by inhalation) LOAEL 4320 mg/m3
	Exposure routes: General population, acute exposure, local, inhalation Value: 640 mg/m3 DNEL, Most sensitive endpoint: irritation (respiratory tract) LOAEL 2400 mg/m3
	Exposure routes: General population, long-term exposure, local, inhalation Value: 180 mg/m3 DNEL, Most sensitive endpoint: irritation (respiratory tract) NOAEL 10000 mg/m3

PNEC of product

Not applicable for mixtures.

PNEC of compounds

Gasoline	:	For the product category no single PNEC can be given because it is a hydrocarbon UVCB.
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8.2 Exposure controls

To be used only for the intended purpose, as mentioned in Section 1.2., For information on specific uses refer to the exposure scenarios in the annex.

General safety measures

Hygiene measures	:	Ensure that proper housekeeping measures are in place. Any contact with the eyes, the skin, and clothing to be avoided. Drench contaminated clothing with water before removing to avoid risk of sparks from static electricity. Clothing contaminated by that substance to be changed immediately and not to be reused before its cleaning.
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Personal protective equipment

Respiratory protection	:	When vapours are produced: respiratory protecting and filtering device with gas filter A, characteristic colour: brown (A1 up to 0,1 % vv, A2 up to 0,5 % vv, A3 up to 1 % vv) to be used. In the case of high concentrations and ambiguous situations a respiratory protecting device independent from the ambient air (breathing apparatus) to be used.
Hand protection	:	Because of the great number of influence factors (e.g. temperature, mechanical stress) the duration of use of the recommended chemical protection gloves can be shorter than the penetration time determined in accordance with EN 374. In case of possible hand contact, wear liquid-proof protective gloves. Material: Nitrile ; Break through time: 10 min Strength of material: 0,40 mm Test method: DIN EN 374 Material: Viton; Break through time: 480 min Strength of material: 0,70 mm Test method: DIN EN 374 Material: Butyl; Break through time: 10 min Strength of material: 0,70 mm Test method: DIN EN 374 Material: Polychloroprene; Break through time: 10 min Strength of material: 0,60 mm Test method: DIN EN 374
Eye/face protection	:	Fully protecting goggles or protecting screen if there is a danger of splashing. Otherwise protecting goggles with lateral protection.
Body protection	:	Wear permanently flame resistant and permanently antistatical and solvent resistant and tight protective clothing. Work helmet. Antistatic non-skid safety shoes or boots. If necessary heat-resistant.

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Limitations and supervision of the exposure of the environment

Limitations and supervision of the exposure of the environment	: Only use within closed apparatuses. At risk of exposure, suitable extraction should be carried out. Emission limits to be respected, cleaning of the exhaust air to be provided (if required). Also refer to section 6 "Measures in the cases of accidental release" When transported in vessels that may break suitable outer containers are to be used.
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8.3 Additional advice

In a concrete case and following an individual assessment of the hazards another personal protecting equipment may be required.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	: liquid
Aggregate condition	: liquid
Colour	: clear as water to yellowish
Odour	: like gasoline
Odour threshold	: Odour clearly perceptible

Characteristics	Values	Method	Note
pH			not applicable
Melting point/Freezing point			not determined
start of boiling	< 35 °C	EN ISO 3405	
final boiling point	≤ 210 °C	EN ISO 3405	
Flash point	< 0 °C	EN 57	
Evaporation rate			not determined
Phase transition solid, gaseous			---
Lower explosion limit	ca. 0,6 %(V)		Literature data
Upper explosion limit	ca. 8 %(V)		Literature data
Vapour pressure	450 - 900 hPa at 37,8 °C	EN 13016-1	
Vapour density			no data available
Density	720 - 775 kg/m ³ at 15 °C	EN ISO 12185	
Relative density			not relevant;
Water solubility			practically insoluble
Solubility(ies)			Fat solubility: not determined
Partition coefficient (n-octanol/water)			no data available
Auto-ignition temperature	> 250 °C		Literature data

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Decomposition temperature			not determined
Viscosity, kinematic	ca. 0,6 mm ² /s at 20 °C	EN ISO 3104	
Viscosity, dynamic			not determined
Explosive properties		Derivation from chemical structure	not explosive
Oxidising properties		Derivation from chemical structure	not oxidising

9.2 Other information

no data available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

chemically stable

10.2 Chemical stability

chemically stable

10.3 Possibility of hazardous reactions

Hazardous reactions : The formation of explosive mixtures of vapours and air is possible.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : strong acids and oxidizing agents;

10.6 Hazardous decomposition products

Hazardous decomposition products : none if correctly stored and handled

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10.7 Additional advice

Invisible vapour, heavier than air

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Acute oral effect	:	for the mixture no data available;
Acute oral effect Gasoline	:	LD50 rat Dose: > 5.000 mg/kg Method: OECD 401 Test substance: 86290-81-5
Acute inhaling effect	:	for the mixture no data available;
Acute inhaling effect Gasoline	:	LC50 rat Dose: > 5.610 mg/m ³ Method: OECD 403 Test substance: 86290-81-5
Acute dermal effect	:	for the mixture no data available;
Acute dermal effect Gasoline	:	LD50 rabbit Dose: > 2.000 mg/kg Method: OECD 402 Test substance: 86290-81-5
Acute effect (other)	:	for the mixture no data available;
Acute effect (other) Gasoline	:	no data available
Other effects	:	for the mixture no data available;

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Other effects Gasoline	: no information
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Skin corrosion/irritation

Skin irritation	: for the mixture no data available;
Skin irritation Gasoline	: Rabbit skin Result: irritating Method: OECD 404 Test substance: 86290-81-5 Dose: 0,5 ml/4h

Serious eye damage/eye irritation

Eye irritation	: for the mixture no data available; Temporary irritation possible
Eye irritation Gasoline	: Rabbit eye Result: not irritating Method: OECD 405 Test substance: 86290-81-5 Dose: 0,1 ml/1-2 s

Respiratory or skin sensitisation

sensitisation	: for the mixture no data available;
sensitisation Gasoline	: Skin sensitisation guinea pig Result: not sensitising Method: OECD 406 Test substance: 86290-81-5 Dose: 0,5 ml/24h

Germ cell mutagenicity

Genotoxicity in vitro	: Remarks: for the mixture no data available;
Genotoxicity in vitro Gasoline	: Ames test Result: negative Method: OECD 471 Test substance: 86290-81-5
Genotoxicity in vitro 2-ethoxy-2-methylpropane (ETBE)	: Ames test Result: negative Method: OECD 471
Genotoxicity in vitro tert-butyl methyl ether (MTBE)	: Ames test Result: negative Method: OECD 471

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Genotoxicity in vitro Ethanol	: Gene mutation test Result: negative Method: OECD 476
Genotoxicity in vitro Toluene	: Ames test Result: negative Method: EU Method B.13/14
Genotoxicity in vitro Benzene	: Ames test Result: negative Method: OECD 471
Genotoxicity in vivo	: Remarks: for the mixture no data available;
Genotoxicity in vivo Gasoline	: micronucleus assay (clastogenicity) Test substance: 86290-81-5 Method: EPA OPPTS 870.5395 Result: negative
Genotoxicity in vivo 2-ethoxy-2-methylpropane (ETBE)	: micronucleus assay (clastogenicity) Method: Guidelines for Screening Mutagenicity Testing Of Chemicals Guideline for micronucleus test in rodents, 21 November 2003 Result: negative
Genotoxicity in vivo tert-butyl methyl ether (MTBE)	: micronucleus assay (clastogenicity) Method: EPA OPPTS 870.5385 Result: negative
Genotoxicity in vivo Ethanol	: Chromosome aberration test Method: OECD 478 Result: negative
Genotoxicity in vivo Toluene	: Chromosome aberration test Species: rat Method: rat bone marrow cytogenetic analysis Result: negative
Genotoxicity in vivo Benzene	: micronucleus assay (clastogenicity) Method: OECD 474 Result: Positive upon exposure with 100 and 200 ppm
Toxicological Assessment Germ cell mutagenicity	: Components of this mixture are classified as mutagenic in REACH, Annex XVII, paragraph 29 (benzene content >= 0,1% w/w)
Toxicological Assessment Germ cell mutagenicity Gasoline	: The substance is classified as mutagenic in REACH, Annex XVII, paragraph 29 (benzene content >= 0,1% w/w)
Toxicological Assessment Germ cell mutagenicity 2-ethoxy-2-methylpropane (ETBE)	: no indication for germ cell mutagenicity

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Toxicological Assessment Germ cell mutagenicity tert-butyl methyl ether (MTBE)	: no indication for germ cell mutagenicity
Toxicological Assessment Germ cell mutagenicity Ethanol	: No classification criteria for mutagenicity.
Toxicological Assessment Germ cell mutagenicity Toluene	: Based on the available data is not classified as mutagenic.
Toxicological Assessment Germ cell mutagenicity Benzene	: Germ cell mutagenicity, Muta. 1B H340, May cause genetic defects.

Carcinogenicity

Carcinogenic effect	: for the mixture no data available;
Carcinogenic effect Gasoline	: Dose: 0,05 ml Test substance: 86290-81-5 Method: OECD 451 NOAEL dermal, exposure time: 102 w weeks;
Carcinogenic effect 2-ethoxy-2-methylpropane (ETBE)	: Dose: 500 ppm Method: OECD 453 NOAEC: exposure time: 104 w weeks;
Carcinogenic effect tert-butyl methyl ether (MTBE)	: Dose: 400 ppm Method: EPA OTS 798.3300 NOAEC: exposure time: 104 w weeks;
Carcinogenic effect Ethanol	: Method: OECD 451 NOAEL Dose: > 3000 mg/kg/d exposure time: 104 w weeks;
Carcinogenic effect Toluene	: Dose: NOAEC: 1.131 mg/m3 Method: OECD 453 exposure time: 104 w weeks;
Carcinogenic effect Benzene	: Method: EPA OPP 83-5 exposure time: 103 w weeks; LOAEL Dose: 25 mg/kg (f), 50mg/kg (m)
Toxicological Assessment Carcinogenicity	: Components of this mixture are classified as carcinogenic in REACH, Annex XVII, paragraph 28 (benzene content >= 0,1% w lw)

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Toxicological Assessment Carcinogenicity Gasoline	: The substance is classified as carcinogenic in REACH, Annex XVII, paragraph 28 (benzene content $\geq 0,1\%$ w/w)
Toxicological Assessment Carcinogenicity 2-ethoxy-2-methylpropane (ETBE)	: no indication for carcinogenicity
Toxicological Assessment Carcinogenicity tert-butyl methyl ether (MTBE)	: no indication for carcinogenicity
Toxicological Assessment Carcinogenicity Ethanol	: No classification criteria for carcinogenicity.
Toxicological Assessment Carcinogenicity Toluene	: Based on the available data is not classified as carcinogenic.
Toxicological Assessment Carcinogenicity Benzene	: Carcinogenicity, Carc. 1A H350, May cause cancer.

Toxicity to reproduction

Reproduction toxicity/fertility	: for the mixture no data available;
Reproduction toxicity/fertility Gasoline	: Test substance: 64741-66-8 Method: OECD 421 NOAEL: >24700 mg/m ³ (P, F1)
Reproduction toxicity/fertility 2-ethoxy-2-methylpropane (ETBE)	: Method: OECD 415 NOAEL: Dose 300 mg/kg/d (P, F1)
Reproduction toxicity/fertility tert-butyl methyl ether (MTBE)	: Method: not determined NOAEC Dose: 8000 ppm (P, F1)
Reproduction toxicity/fertility Ethanol	: Method: OECD 416 NOAEL (P, F1) Dose: 20,7 g/kg/d
Reproduction toxicity/fertility Toluene	: Method: OECD 416 NOAEC (P); Dose: 7500 mg/m ³ NOAEC (F1); Dose: 1875 mg/m ³
Reproduction toxicity/fertility Benzene	: Method: OECD 415 NOAEC (P) Dose: 960 mg/m ³
Developmental toxicity/teratogenicity	: for the mixture no data available;
Developmental toxicity/teratogenicity Gasoline	: Test substance: most likely 68514-15-8 Method: OECD 414 NOAEL: 23900 mg/m ³
Developmental toxicity/teratogenicity 2-ethoxy-2-methylpropane (ETBE)	: Method: OECD 414 NOAEL Dose: 1000 mg/kg/d
Developmental toxicity/teratogenicity tert-butyl methyl ether (MTBE)	: Method: EPA OTS 798.4350 NOAEC (Development toxicity F1, F2); Dose: 4.000 ppm
Developmental toxicity/teratogenicity Ethanol	: Method: OECD 414 NOAEL Dose: > 20000 ppm
Developmental toxicity/teratogenicity Toluene	: Method: EPA OTS 798.4350 NOAEC Dose: 2812 mg/m ³ /20d
Developmental toxicity/teratogenicity Benzene	: Method: OECD 414 NOAEC Dose: 128 mg/m ³

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Toxicological Assessment Developmental toxicity/teratogenicity Reproduction toxicity/fertility	:	Based on the available data the product is classified as toxic to reproduction (fertility). Based on the available data, classified as toxic to development or teratogenic.
Toxicological Assessment Developmental toxicity/teratogenicity Reproduction toxicity/fertility Gasoline	:	Classified as toxic to reproduction (development) due to toluene content $\geq 3\%$ w/w Classified as toxic to reproduction (fertility) due to n-hexane content $\geq 3\%$ w/w
Toxicological Assessment Developmental toxicity/teratogenicity Reproduction toxicity/fertility 2-ethoxy-2-methylpropane (ETBE)	:	No reproduction toxicity or teratogenicity
Toxicological Assessment Developmental toxicity/teratogenicity Reproduction toxicity/fertility tert-butyl methyl ether (MTBE)	:	No reproduction toxicity or teratogenicity
Toxicological Assessment Developmental toxicity/teratogenicity Reproduction toxicity/fertility Ethanol	:	No notable risk to humans when TLV-value is observed
Toxicological Assessment Developmental toxicity/teratogenicity Reproduction toxicity/fertility Toluene	:	Based on the available data is not classified as toxic to reproduction (fertility). Based on the available data is classified as teratogenic.
Toxicological Assessment Developmental toxicity/teratogenicity Reproduction toxicity/fertility Benzene	:	Based on the available data is not classified as toxic to reproduction (fertility). Based on the available data, not classified as toxic to development or teratogenic.

Specific Target Organ Toxicity - Single exposure

Specific Target Organ Toxicity - Single exposure	:	for the mixture no data available;
Specific Target Organ Toxicity - Single exposure Gasoline	:	Target organs: Central nervous system May cause drowsiness or dizziness (Inhalation).

Specific Target Organ Toxicity - Repeated exposure

Effect upon repeated or longtime exposure	:	for the mixture no data available;
Effect upon repeated or longtime exposure Gasoline	:	NOAEC rat inhalative, Dose: 9840 mg/m ³ , method: OECD 412, test substance: 86290-81-5
Effect upon repeated or longtime exposure Gasoline	:	Repeated skin contact may lead to symptoms of irritation and/or inflammatory reactions (dermatitis).

Aspiration hazard

Aspiration toxicity	:	for the mixture no data available;
Aspiration toxicity Gasoline	:	May be fatal if swallowed and enters airways.

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Neurological effects

Neurological effects	:	for the mixture no data available;
Neurological effects Gasoline	:	Repeated exposure at lower, occupational levels of gasoline produced little evidence of chronic neurological effects in humans or in experimental animals., Exposure to high levels of gasoline can produce acute central nervous system depression in humans and experimental animals.
Narcotic effect	:	for the mixture no data available;
Narcotic effect Gasoline	:	Vapours may cause drowsiness and dizziness.

Toxicological Assessment

Acute effects	:	for the mixture no data available;
Acute effects Gasoline	:	Based on the available data, is not classified as acutely toxic.
Sensitization	:	for the mixture no data available;
Sensitization Gasoline	:	Based on the available data, is not classified as sensitising.
Repeated dose toxicity	:	for the mixture no data available;
Repeated dose toxicity Gasoline	:	Based on the available data, is not classified in respect to specific target organ toxicity upon repeated exposure.

11.2 Additional advice

for the mixture no data available;

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Acute toxicity

Acute toxicity for fish	:	for the mixture no data available;
Acute toxicity for fish Gasoline	:	LL50 Species: Oncorhynchus mykiss (rainbow trout) Dose: 10 mg/l Exposure time: 96 h Test substance: Naphtha (petroleum), isomerization Method: OECD 203
Acute toxicity for aquatic invertebrates	:	for the mixture no data available;

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Acute toxicity for aquatic invertebrates Gasoline	: EL50 Species: Daphnia magna (large water flea) Dose: 4,5 mg/l Exposure time: 48 h Test substance: Straight-run light gasoline Method: OECD 202
Toxicity for algae and aquatic plants	: for the mixture no data available;
Toxicity for algae and aquatic plants Gasoline	: EL50 Species: Pseudokirchneriella subcapitata Dose: 3,1 mg/l Exposure time: 72 h Test substance: Blended gasoline Method: OECD 201
Toxicity for micro-organisms	: for the mixture no data available;
Toxicity for micro-organisms Gasoline	: EC50 Species: Tetrahymena pyriformis Dose: 15,41 mg/l Exposure time: 40 h Method: QSAR PETROTOX computer model
Toxicity to edaphic organisms	: for the mixture no data available;
Toxicity to edaphic organisms Gasoline	: no data available
Toxicity for terrestrial plants	: for the mixture no data available;
Toxicity for terrestrial plants Gasoline	: no data available
Toxicity to other terrestrial non -mammalian organisms	: for the mixture no data available;
Toxicity to other terrestrial non -mammalian organisms Gasoline	: no data available

Chronic toxicity

Toxicity to fish (Chronic toxicity)	: for the mixture no data available;
Toxicity to fish (Chronic toxicity) Gasoline	: LL50 Species: Pimephales promelas Dose: 5,2 mg/l Exposure time: 14 d Test substance: light catalytically reformed naphtha Method: OECD 204

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Toxicity to daphnia and other aquatic invertebrates. (Chronic toxicity)	:	Remarks: for the mixture no data available;
Toxicity to daphnia and other aquatic invertebrates. (Chronic toxicity) Gasoline	:	EL50 Species: Daphnia magna Dose: 10 mg/l Exposure time: 21 d Test substance: Light alkylate naphtha Method: OECD 211

Ecotoxicological Assessment

Aquatic Acute	:	for the mixture no data available;
Aquatic Acute Gasoline	:	conclusive but not sufficient for classification
Aquatic Chronic	:	for the mixture no data available;
Aquatic Chronic Gasoline	:	Toxic to aquatic life with long lasting effects.
Toxicity Data on Soil	:	for the mixture no data available;
Toxicity Data on Soil Gasoline	:	no data available
Other organisms relevant to the environment	:	for the mixture no data available;
Other organisms relevant to the environment Gasoline	:	no data available

12.2 Persistence and degradability

Persistence, Biodegradability	:	for the mixture no data available;
Persistence, Biodegradability Gasoline	:	inherently biodegradable.
Persistence, Biodegradability 2-ethoxy-2-methylpropane (ETBE)	:	Not readily biodegradable.
Persistence, Biodegradability tert-butyl methyl ether (MTBE)	:	Not readily biodegradable.
Persistence, Biodegradability Ethanol	:	Readily biodegradable.
Persistence, Biodegradability Toluene	:	ready biodegradability 86 % Method: APHA method no 219

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Persistence, Biodegradability Benzene	: Readily biodegradable.
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12.3 Bioaccumulative potential

Bioaccumulation	: for the mixture no data available; Bioaccumulative potential (Partition coefficient (n-octanol/water)): no data available
Bioaccumulation Gasoline	: Bioconcentration factor (BCF): 10 - 2.500 modelled data
Bioaccumulation 2-ethoxy-2-methylpropane (ETBE)	: Not potentially bioaccumulative, (log Kow = 1,48 - 1,56)
Bioaccumulation tert-butyl methyl ether (MTBE)	: Bioconcentration factor (BCF): <= 2.000 Not potentially bioaccumulative, (log Kow = 1,06)
Bioaccumulation Ethanol	: Not potentially bioaccumulative, (log Kow <= 4,5)
Bioaccumulation Toluene	: Species: Leuciscus idus melanotus Exposure time: 3 d Bioconcentration factor (BCF): 90 Method: Exposure to single concentration in closed static system. Whole body concentration., Measurement by radioactive markers., (log Kow = 2,73 at 20°)
Bioaccumulation Benzene	: Bioconcentration factor (BCF): 13 Not expected to bioaccumulate due to the low log Kow < 3

12.4 Mobility in soil

Mobility	: Remarks: for the mixture no data available;
Mobility Gasoline	: Remarks: Koc >60,7 <229,2 log Koc >1,783 <2,36 (=2)
Mobility 2-ethoxy-2-methylpropane (ETBE)	: Remarks: no data available
Mobility tert-butyl methyl ether (MTBE)	: Remarks: no data available
Mobility Ethanol	: Remarks: no significant adsorption on soils (read-across methanol)
Mobility Toluene	: Method: OECD 312 Remarks: Koc = 34 - 120

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Mobility Benzene	:	Method: QSAR Remarks: Koc = 134,1 l/kg
Transport between environmental compartments	:	The product evaporates readily. Component substances partition primarily to air when emitted to the environment.
Physical-chemical eliminability	:	for the mixture no data available;
Physical-chemical eliminability Gasoline	:	The product is insoluble and floats on water. May be separated mechanically in wastewater plants.

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	:	for the mixture no data available;
Results of PBT and vPvB assessment Gasoline	:	No structures relevant to naphthas were found to meet the PBT or vPvB criteria except for anthracene (a known PBT), which, however, is not present in the substance at greater than 0,1%
Results of PBT and vPvB assessment 2-ethoxy-2-methylpropane (ETBE)	:	The substance is not considered a PBT or vPvB.
Results of PBT and vPvB assessment tert-butyl methyl ether (MTBE)	:	The substance is not considered a PBT or vPvB.
Results of PBT and vPvB assessment Ethanol	:	The substance is not considered a PBT or vPvB.

12.6 Other adverse effects

Effects upon sewage treatment plants	:	no information
Effects upon sewage treatment plants Gasoline	:	no information
Other adverse effects	:	for the mixture no data available;
Other adverse effects Gasoline	:	Do not discharge liquid hydrocarbons into sewer system, water bodies and prevent from entering the ground. In the case of accidents call for assistance by professional oil-fighting forces. Potentially harmful to drinking water if major amounts penetrate into the soil and waters.

12.7 Further information

Further information	:	for the mixture no data available;
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SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Information on the disposal of the product	:	Product residues are to be disposed of in accordance with the legal stipulations.
Contaminated packaging	:	If the product has been supplied within a packaging, the empty original containers are to be reused preferably or, if this is not possible, they are to be recycled preferably. Empty containers may contain flammable product residues. Do not weld, solder, drill, cut or incinerate empty containers, unless they have been properly cleaned.
Disposal key according to European disposal index when using as described in Section 1.:		
Waste from residues	:	13 07 02* petrol
Contaminated packaging	:	15 01 10* packaging which contain residues of hazardous substances or which are contaminated by hazardous substances

13.2 Additional advice

The Waste Code depends on the origin of the waste and can deviate from the above data in a specific case.

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SECTION 14: TRANSPORT INFORMATION



Road transport (ADR)

14.1	UN 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	:	yes
14.6	Special precautions for user	:	See section 7 and references therein.

Further information

Number to designate the hazard	:	33
ADR/RID-Labels	:	3
Classification Code	:	F1
Tunnel restriction code	:	(D/E)
Advice	:	Danger Label No 3, Fish and tree - Environmentally hazardous substance mark

Rail transport (RID)

14.1	UN 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	:	yes
14.6	Special precautions for user	:	See section 7 and references therein.

Further information

Number to designate the hazard	:	33
ADR/RID-Labels	:	3

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Classification Code	:	F1
Advice	:	Danger Label No 3, Fish and tree - Environmentally hazardous substance mark

Inland navigation with tanker barges (ADN)

14.1	UN 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	:	yes
14.6	Special precautions for user	:	See section 7 and references therein.

Further information

Advice	:	(N2+CMR+F)
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Sea transport (IMDG)

14.1	UN number	:	1203
14.2	UN proper shipping name	:	GASOLINE
14.3	Transport hazard class(es)	:	3
14.4	Packing group	:	II
14.5	Marine pollutant	:	yes
14.6	Special precautions for user	:	See section 7 and references therein.
14.7	Transport in bulk according to Annex II of MARPOL and the IBC Code	:	MARPOL Annex 1

Further information

ICAO hazard labels	:	3
EmS	:	F-E, S-E

Air transport (ICAO-TI/IATA-DGR)

14.1	UN 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	:	yes
14.6	Special precautions for user	:	See section 7 and references therein.

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Further information

ICAO hazard labels	:	3
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Additional advice

In case of need further information on the transport classification can be requested from the producer.

SECTION 15: REGULATORY INFORMATION

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

Community provisions on the protection of the health and the environment

Directive 2010/75/EU on industrial emissions (integrated pollution prevention and control) - Chapter V - Special provisions for installations and activities using organic solvents.	:	When properly used, product is not subject to VOC-Guideline (see Section 1.2).
European Parliament and Council Directive 94/63/EC of 20 December 1994 on the control of volatile organic compound (VOC) emissions resulting from the storage of petrol and its distribution from terminals to service stations.	:	The legislation regarding the control of volatile organic compound (VOC) emissions resulting from the storage of petrol and its distribution from terminals to service stations apply to this product.
Directive 2009/126/EC of the European Parliament and of the Council of 21 October 2009 on Stage II petrol vapour recovery during refuelling of motor vehicles at service stations	:	The legislation regarding the control of volatile organic compound (VOC) emissions resulting from the storage of petrol and its distribution from terminals to service stations apply to this product.
Regulation (EC) no. 1907/2006, Annex XVII (REACH-regulation)	:	no. 28 Carcinogenic substances of the categories 1A and/or 1 or the categories 1B and/or 2 no. 29 Mutagenic substances of the categories 1A and/or 1 or the categories 1B and/or 2;
Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC (SEVESO III).	:	Annex I, Part 1: P5a FLAMMABLE LIQUIDS Section "E" – ENVIRONMENTAL HAZARDS E2 Hazardous to the Aquatic Environment in Category Chronic 2. Annex I Part 2: 34. Petroleum products and alternative fuels. (a) gasolines and naphthas
Council Directive 92/85/EEC of 19 October 1992 on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding (tenth individual Directive within the meaning of Article 16 (1) of Directive 89/391/EEC)	:	This product is subject to the restrictions set by the national legislation transposing the Directive.

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Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work	: This product is subject to the restrictions set by the national legislation transposing the Directive.
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Other regulations:

Chemical Substances and Preparations Harmful Exposure Protection Act (title amended, The State Gazette No. 114/2003.)
Healthful and Safe Work Conditions Act (Promulgated in The State Gazette No. 124/23.12.1997)
Waste Management Act (Promulgated in The State Gazette No. 86/30.19.2003)
European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) (Promulgated in The State Gazette No. 73/18.08.1995).
International Railway Transportation Agreement (COTIF) signed May 9, 1980 in Bern, Switzerland (Ratified by Ordinance No. 1439 of The State Council of Bulgaria of June 8th 1982. - The State Gazette No. 46/1982) in force for Republic of Bulgaria as of 01/05/1985.
European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) (ratified by Act, adopted by 40th People's Assembly of Republic of Bulgaria, 18 January 2006 The State Gazette No. 9/2006) in force for Republic of Bulgaria as of 29 February 2008) Promulgated in The State Gazette.
The State Gazette No. 9/2006) in force for Republic of Bulgaria as of 29 February 2008) Promulgated in The State Gazette No. 43 / 29 April 2008.
Regulations on Procedure of Classification, Packaging and Labelling of Chemical Substances and Preparations (Promulgated in The State Gazette No. 68/ 31 August 2010).
Environmental Law (state gazette 91 / 25.09.2002)
Ordinance No.3 for waste classification (state gazette 44 / 25.05.2004)
Ordinance No.10 from September 26, 2003 on the protection of workers from the risks related to carcinogens and mutagens at work (state gazette 94 / 24.10.2003)
Ordinance No.13 from December 30, 2003 on the protection of workers from the risks related to exposure to chemical agents at work (state gazette 8 / 30.01.2004)
Ordinance to prevent major accidents involving hazardous substances and limiting their consequences (state gazette 76 / 05.10.2012)
Ordinance on safe storage of dangerous chemical substances and mixtures (state gazette 43 / 07.06.2011)

15.2 Chemical Safety Assessment

A chemical safety assessment for the main constituent was performed within the framework of the REACH registration. It was verified that control of the main constituent as a lead substance ensures appropriate control of all other constituents of the mixture. Therefore, the relevant scenarios for the main substance are attached in the annex.

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

Aquatic Chronic	Chronic aquatic toxicity
Asp. Tox.	Aspiration hazard
Carc.	Carcinogenicity
Eye Irrit.	Serious eye damage / Eye irritation
Flam. Liq.	Flammable liquids
Muta.	Germ cell mutagenicity
Repr.	Reproductive toxicity
Skin Irrit.	Skin corrosion/irritation
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure
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.

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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.
H361f	Suspected of damaging fertility.
H372	Causes damage to organs (haematopoietic system) through prolonged or repeated exposure (oral, inhalation and dermal).
H373	May cause damage to organs (central nervous system) through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Further information

Other information	: Overall updates from the previous main version, not marked as stated at Additional advice, have been implemented in: Section 1 and Annex Sections 4 - 8 Sections 11 - 16
	List of acronyms: (Q)SAR = Quantitative Structure Activity Relationship ADN = European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road ATE = Acute Toxicity Estimate BCF = bioconcentration factor CAS-No = Chemical Abstracts Service number CMR = Carcinogen, Mutagen, or toxic to Reproduction CSA = Chemical Safety Assessment CSR = Chemical Safety Report DMEL = Derived Minimal Effect Level DNEL = Derived No Effect Level EC50 = The effective concentration of substance that causes 50% of the maximum response. ECHA = European Chemicals Agency EC-Number = EINECS and ELINCS Number (see also EINECS and ELINCS) EINECS = European Inventory of Existing Commercial Chemical Substances EL50 = effective load 50% ELINCS = European List of notified Chemical Substances EPA = Environmental Protection Agency (U.S.) GES = Generic Exposure Scenario IATA = International Air Transport Association IC50 = inhibition concentration 50% ICAO-TI = Technical Instructions for the Safe Transport of Dangerous Goods by Air IMDG = International Maritime Dangerous Goods Kow = octanol-water partition coefficient Koc = soil organic carbon-water partitioning coefficient LC50 = Lethal Concentration to 50 % of a test population LD50 = Lethal Dose to 50% of a test population (Median Lethal Dose) LL50 = Lethal Load 50% LOAEC = Lowest Observed Adverse Effect Concentration LOAEL = Lowest Observed Adverse Effect Level NOAEC = No Observed Adverse Effect Concentration NOAEL = No Observed Adverse Effect Level NOEC = No Observed Effect Concentration NOEL = No Observed Effect Level

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	OECD = Organization for Economic Co-operation and Development BLV = Biological Limit Value OEL = Occupational Exposure Limit OSHA = European Agency for Safety and Health at work PBT = Persistent, Bioaccumulative and Toxic substance PEC = Predicted Effect Concentration PNEC = Predicted No Effect Concentration RID = Regulations concerning the International Carriage of Dangerous Goods by Rail RMM = Risk Management Measure SVHC = Substances of Very High Concern TRA = Targeted Risk Assessment TLV = Threshold Limit Value STEL = Short term exposure limit TWA = Time-Weighted Average UVCB = substance of unknown or variable composition, complex reaction products or biological materials vPvB = very Persistent and very Bioaccumulative LGK = Storage class TRGS = Technical Rules for Hazardous Substances (Germany)
Sources of information	: Chemical Safety Report (CSR)
	Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]: Flam. Liq. 1 H224 - On basis of test data Skin Irrit. 2 H315 - Calculation method Asp. Tox. 1 H304 - On basis of test data Repr. 2 H361fd - Calculation method Muta. 1B H340 - Calculation method Carc. 1B H350 - Calculation method STOT SE 3 H336 - Calculation method Aquatic Chronic 2 H411 - Calculation method

Markings (I) in the left border and/or text in red indicate changes in the previous main version.

The above data are in accordance with our knowledge and experience at the given date of revision and exclusively refer to the product in its as-delivered condition as it is unambiguously identifiable by the product number. In the case of usages deviating from those given in section 1 or when the product is mixed with other materials or is altered in the course of a production process, the statements given in the material safety data sheet may not apply without restrictions or even not at all any more. The data are not applicable to other products of the same or a similar designation.

The product should not be used other than for the stated application or applications without seeking advice from the supplier.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations.

You can contact the supplier to ensure that this document is the most current available.

Alteration of this document is strictly prohibited.

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Annex

The exposure scenarios for the most frequent applications are listed below. If required, other exposure scenarios will be provided upon request.

1. Brief title of the Exposure Scenario: 01a - Distribution of substance

Life-cycle stage	: IS: Use at industrial sites
Process category	: PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC15: Use as laboratory reagent
Environmental release category	: ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) ERC5: Use at industrial site leading to inclusion into/onto article ERC6a: Use of intermediate ERC6b: Use of reactive processing aid at industrial site (no inclusion into or onto article) ERC6c: Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article) ERC6d: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article) ERC7: Use of functional fluid at industrial site
Further information	: Specific Environmental Release Category ESVOC SpERC 1.1b.v1
Processes, tasks, activities covered	: Bulk loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading and associated laboratory activities. Excludes emissions during transport. Gasoline (content of benzene < 1 %)

2.1 Contributing scenario controlling environmental exposure for:

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ERC4, Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

ERC5, Use at industrial site leading to inclusion into/onto article

ERC6a, Use of intermediate

ERC6b, Use of reactive processing aid at industrial site (no inclusion into or onto article)

ERC6c, Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)

ERC6d, Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)

ERC7, Use of functional fluid at industrial site

Amount used

Remarks : Substance is complex UVCB. Predominantly hydrophobic.

Regional use tonnage : 11 10E6 t/y
Annual site tonnage (tonnes/year) : 22.000
Maximum daily site tonnage (kg/day) : 72.000
Fraction of EU tonnage used in region : 0,1
Fraction of Regional tonnage used locally : 0,002
MSafe (maximum allowable site tonnage) : 2,6 10E6 kg/day
Remarks : Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal

Frequency and duration of use

Continuous exposure : 300 Emission days (days/year),
Continuous release.

Environmental factors not influenced by risk management

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

Other given operational conditions affecting environmental exposure

Continuous release.
Emission or Release Factor: Air : 0,1 %
Emission or Release Factor: Water : 0,001 %
Emission or Release Factor: Soil : 0,001 %
Remarks : All release factors refer to initial release prior to RMM. Release to water is release to wastewater.
Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical conditions and measures / Organizational measures;

Air : Treat air emission to provide a typical removal efficiency of:
90 %
Water : Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%):
0 %
Water : If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=:
0 %
Remarks : Risk from environmental exposure is driven by freshwater. No wastewater treatment required.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Domestic treatment plant

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Flow rate of sewage treatment plant effluent : 2.000 m³/d
Effectiveness (STP) : 96,1 %
Total removal from wastewater according to internal and external location measures : 96,1 %
Sludge Treatment : Organisation measures to prevent/limit release from site: Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Remarks : Conditions and measures related to municipal sewage treatment plant: Not applicable as there is no release to wastewater.

Conditions and measures related to external treatment of waste for disposal

Waste treatment : External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery Methods : External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2 Contributing scenario controlling worker exposure for:

- PROC1 : Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
- PROC2 : Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
- PROC3 : Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
- PROC8a : Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
- PROC8b : Transfer of substance or mixture (charging and discharging) at dedicated facilities
- PROC15 : Use as laboratory reagent

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)

Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa at STP

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently, Assumes a good basic standard of occupational hygiene is implemented

Amount used

not applicable :

Frequency and duration of use

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

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Technical conditions and measures

G18 General Measures (carcinogens).

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general / local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean / flush equipment, where possible, prior to maintenance.

CS15 General exposures (closed systems). CS56 With sample collection.

Handle substance within closed systems. Sample via a closed loop or other system intended to avoid exposure.

CS15 General exposures (closed systems). OC9 Outdoor.

Handle substance within closed systems.

CS2 Process sampling

Sample via a closed loop or other system intended to avoid exposure.

CS36 Laboratory activities

Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.

CS501 Bulk closed loading and unloading.

Ensure material transfers are under containment or extract ventilation.

CS39 Equipment cleaning and maintenance.

Drain down and flush system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle.

CS67 Storage.

Ensure operation is undertaken outdoors. Store substance within a closed system.

Organisational measures to prevent/limit releases, dispersion and exposure:

G19 General measures (skin irritants)

Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop.

G18 General Measures (carcinogens).

Where there is potential for exposure: Restrict access to authorised staff; provide specific activity training to operators to minimise exposures. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance.

Conditions and measures related to personal protection, hygiene and health evaluation

G19 General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off skin contamination immediately.

G18 General Measures (carcinogens).

Where there is potential for exposure: Wear suitable gloves (tested to EN374) and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios. Clear up spills immediately and dispose of waste safely.

CS15 General exposures (closed systems). CS56 With sample collection.

Wear suitable gloves tested to EN374.

CS39 Equipment cleaning and maintenance.

Clear spills immediately. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

3. Exposure estimation and reference to its source

3.1. Health:

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

3.2. Environment:

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

4.1. Health:

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

4.2. Environment:

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

Maximum Risk Characterisation Ratio for Air Emissions RCR_{air}

0,01

Maximum Risk Characterisation Ratio for Wastewater Emissions RCR_{water}

0,028

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1. Brief title of the Exposure Scenario: 02 - Formulation & (re)packing of substances and mixtures

Life-cycle stage	: F: Formulation or re-packing
Process category	: PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC15: Use as laboratory reagent
Environmental release category	: ERC2: Formulation into mixture
Further information	: Specific Environmental Release Category ESVOC SpERC 2.2.v1
Processes, tasks, activities covered	: Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities. Gasoline (content of benzene < 1 %)

2.1 Contributing scenario controlling environmental exposure for:

ERC2, Formulation into mixture

Amount used

Remarks	: Substance is complex UVCB. Predominantly hydrophobic.
Regional use tonnage	: 10 10E6 t/y
Annual site tonnage (tonnes/year)	: 30.000
Maximum daily site tonnage (kg/day)	: 100.000
Fraction of EU tonnage used in region	: 0,1
Fraction of Regional tonnage used locally	: 0,003
MSafe (maximum allowable site tonnage)	: 110.000 kg/day
Remarks	: Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal

Frequency and duration of use

Continuous exposure	: 300 Emission days (days/year), Continuous release.
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Environmental factors not influenced by risk management

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

Other given operational conditions affecting environmental exposure

Continuous release.

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Emission or Release Factor: Air : 2,5 %
Emission or Release Factor: Water : 0,064 %
Emission or Release Factor: Soil : 0,01 %
Remarks : Release factors water and soil refer to initial release prior to RMM. Release fraction to air from process (after typical onsite RMMs consistent with EU Solvent Emissions Directive requirements) Release to water is release to wastewater.
Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical conditions and measures / Organizational measures;

Air : Treat air emission to provide a typical removal efficiency of:
0 %
Water : Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%):
95,7 %
Water : If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):
0,0 %
Remarks : Prevent discharge of undissolved substance to or recover from onsite wastewater. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required. Risk from environmental exposure is driven by freshwater sediment.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Domestic treatment plant
Flow rate of sewage treatment plant effluent : 2.000 m3/d
Effectiveness (STP) : 96,1 %
Total removal from wastewater according to internal and external location measures : 96,1 %
Sludge Treatment : Organisation measures to prevent/limit release from site: Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Remarks : Conditions and measures related to municipal sewage treatment plant: Not applicable as there is no release to wastewater.

Conditions and measures related to external treatment of waste for disposal

Waste treatment : External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery Methods : External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2 Contributing scenario controlling worker exposure for:

- PROC1 : Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
PROC2 : Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC3 : Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC8a : Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b : Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC15 : Use as laboratory reagent

Product characteristics

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Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)
Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa at STP
Remarks : Assumes a good basic standard of occupational hygiene is implemented, Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Amount used
not applicable :

Frequency and duration of use
Covers daily exposures up to 8 hours : 8 h
(unless stated differently)

Technical conditions and measures

G18 General Measures (carcinogens).

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general / local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean / flush equipment, where possible, prior to maintenance.

CS15 General exposures (closed systems). CS56 With sample collection.

Handle substance within closed systems. Sample via a closed loop or other system intended to avoid exposure.

CS15 General exposures (closed systems). OC9 Outdoor.

Handle substance within closed systems.

CS2 Process sampling

Sample via a closed loop or other system intended to avoid exposure.

CS36 Laboratory activities

Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.

CS14 Bulk Transfers.

Ensure material transfers are under containment or extract ventilation

CS8 Drum / batch transfers

Ensure material transfers are under containment or extract ventilation.

CS39 Equipment cleaning and maintenance.

Drain down and flush system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle.

CS67 Storage.

Store substance within a closed system.

Organisational measures to prevent/limit releases, dispersion and exposure:

G19 General measures (skin irritants)

Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop.

G18 General Measures (carcinogens).

Where there is potential for exposure: Restrict access to authorised staff; provide specific activity training to operators to minimise exposures. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance.

Conditions and measures related to personal protection, hygiene and health evaluation

G19 General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off skin contamination immediately.

G18 General Measures (carcinogens).

Where there is potential for exposure: Wear suitable gloves (tested to EN374) and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely.

CS15 General exposures (closed systems). CS56 With sample collection.

Wear suitable gloves tested to EN374.

CS39 Equipment cleaning and maintenance.

Clear spills immediately. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

CS67 Storage.

Wear suitable gloves tested to EN374.

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3. Exposure estimation and reference to its source

3.1. Health:

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

3.2. Environment:

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

4.1. Health:

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

4.2. Environment:

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

Maximum Risk Characterisation Ratio for Air Emissions RCR_{air}

0,18

Maximum Risk Characterisation Ratio for Wastewater Emissions RCR_{water}

0,91

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1. Brief title of the Exposure Scenario: 12a - Use as a fuel - Industrial

Life-cycle stage	: IS: Use at industrial sites
Process category	: PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC16: Use of fuels
Environmental release category	: ERC7: Use of functional fluid at industrial site
Further information	: Specific Environmental Release Category ESVOC SpERC 7.12a.v1
Processes, tasks, activities covered	: Covers the use as a fuel or in fuels (or fuel additives and additive components) and includes activities associated with its transfer, use, equipment maintenance and handling of waste. Gasoline (content of benzene < 1 %)

2.1 Contributing scenario controlling environmental exposure for:

ERC7, Use of functional fluid at industrial site

Amount used

Remarks	: Substance is complex UVCB. Predominantly hydrophobic.
Regional use tonnage	: 1 10E6 t/y
Annual site tonnage	: 1 10E6 t/y
Maximum daily site tonnage	: 3,3 10E6 kg/day
Fraction of EU tonnage used in region	: 0,1
Fraction of Regional tonnage used locally	: 1,0
MSafe (maximum allowable site tonnage)	: 5,3 10E6 kg/day
Remarks	: Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal

Frequency and duration of use

Continuous exposure	: 300 Emission days (days/year), Continuous release.
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Environmental factors not influenced by risk management

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

Other given operational conditions affecting environmental exposure

Continuous release.	
Emission or Release Factor: Air	: 5 %
Emission or Release Factor: Water	: 0,001 %

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Emission or Release Factor: Soil : 0 %
Remarks : All release factors refer to initial release prior to RMM. Release to water is release to wastewater.
Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical conditions and measures / Organizational measures;

Air : Treat air emission to provide a typical removal efficiency of: 95 %
Water : Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%): 91,7 %
Water : If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%): 0 %
Remarks : Risk from environmental exposure is driven by humans via indirect exposure (primarily inhalation). If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Domestic treatment plant
Flow rate of sewage treatment plant effluent : 2.000 m3/d
Effectiveness (STP) : 96,1 %
Total removal from wastewater according to internal and external location measures : 96,1 %
Sludge Treatment : Organisation measures to prevent/limit release from site: Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Remarks : Conditions and measures related to municipal sewage treatment plant: Not applicable as there is no release to wastewater.

Conditions and measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

2.2 Contributing scenario controlling worker exposure for:

- PROC1 : Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
- PROC2 : Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
- PROC3 : Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
- PROC8a : Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
- PROC8b : Transfer of substance or mixture (charging and discharging) at dedicated facilities
- PROC16 : Use of fuels

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)

Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa at STP

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Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented

Amount used
not applicable

:

Frequency and duration of use

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

Technical conditions and measures

G18 General Measures (carcinogens).

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general / local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean / flush equipment, where possible, prior to maintenance.

CS502 Bulk closed unloading

Ensure material transfers are under containment or extract ventilation.

CS8 Drum/batch transfers

Ensure material transfers are under containment or extract ventilation.

CS507 Refuelling

Ensure material transfers are under containment or extract ventilation.

CS508 Refuelling aircraft

Ensure material transfers are under containment or extract ventilation

CS15 General exposures (closed systems).

Handle substance within closed systems. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

GEST 12I Use as a fuel, CS107 (closed systems)

Handle substance within closed systems.

CS39 Equipment cleaning and maintenance.

Drain down system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

CS67 Storage.

Store substance within a closed system. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Organisational measures to prevent/limit releases, dispersion and exposure:

G19 General measures (skin irritants)

Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop.

G18 General Measures (carcinogens).

Where there is potential for exposure: Restrict access to authorised staff; provide specific activity training to operators to minimise exposures. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance.

CS8 Drum/batch transfers

No specific measures identified.

CS507 Refuelling

No specific measures identified.

CS508 Refuelling aircraft

No specific measures identified.

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Conditions and measures related to personal protection, hygiene and health evaluation

G19 General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off skin contamination immediately.

G18 General Measures (carcinogens).

Where there is potential for exposure: Wear suitable gloves (tested to EN374) and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely.

CS8 Drum/batch transfers

No specific measures identified.

CS507 Refuelling

No specific measures identified.

CS508 Refuelling aircraft

No specific measures identified.

CS39 Equipment cleaning and maintenance.

Clear spills immediately. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

3. Exposure estimation and reference to its source

3.1. Health:

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

3.2. Environment:

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

4.1. Health:

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

4.2. Environment:

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

Maximum Risk Characterisation Ratio for Air Emissions RCR_{air}

0,59

Maximum Risk Characterisation Ratio for Wastewater Emissions RCR_{water}

0,47

Safety Data Sheet as per EC Regulation No. 1907/2006



Eurosuper (Ethanol)
PdNr. 436070

Date of issue: 01.10.2007
Revision Date: 16.05.2018

1. Brief title of the Exposure Scenario: 12b - Use as a fuel - Professional

Life-cycle stage	: PW: Widespread use by professional workers
Process category	: PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC16: Use of fuels
Environmental release category	: ERC9a: Widespread use of functional fluid (indoor) ERC9b: Widespread use of functional fluid (outdoor)
Further information	: Specific Environmental Release Category ESVOC SpERC 9.12b.v1
Processes, tasks, activities covered	: Covers the use as a fuel or in fuels (or fuel additives and additive components) and includes activities associated with its transfer, use, equipment maintenance and handling of waste. Gasoline (content of benzene < 1 %)

2.1 Contributing scenario controlling environmental exposure for:

ERC9a, Widespread use of functional fluid (indoor)

ERC9b, Widespread use of functional fluid (outdoor)

Amount used

Remarks	: Substance is complex UVCB. Predominantly hydrophobic.
Regional use tonnage	: 950.000 t/y
Annual site tonnage (tonnes/year)	: 480
Maximum daily site tonnage (kg/day)	: 1.300
Fraction of EU tonnage used in region	: 0,1
Fraction of Regional tonnage used locally	: 0,0005
MSafe (maximum allowable site tonnage)	: 64.000 kg/day
Remarks	: Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal

Frequency and duration of use

Continuous exposure	: 365 Emission days (days/year), Continuous release.
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Environmental factors not influenced by risk management

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

Other given operational conditions affecting environmental exposure

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Eurosuper (Ethanol)
PdNr. 436070

Date of issue: 01.10.2007
Revision Date: 16.05.2018

Emission or Release Factor: Air : 1 %
Emission or Release Factor: Water : 0,001 %
Emission or Release Factor: Soil : 0,001 %
Remarks : All release factors refer to release from wide dispersive use. Release to water is release to wastewater. Release factors for air and soil refer to regional use only.
Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical conditions and measures / Organizational measures;

Air : Treat air emission to provide a typical removal efficiency of %: not applicable:
Water : Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency >= (%):
0 %
Water : If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%):
0 %
Remarks : Risk from environmental exposure is driven by freshwater. No wastewater treatment required.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Domestic treatment plant
Flow rate of sewage treatment plant effluent : 2.000 m³/d
Effectiveness (STP) : 96,1 %
Total removal from wastewater according to internal and external location measures : 96,1 %
Sludge Treatment : Organisation measures to prevent/limit release from site: Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Remarks : Conditions and measures related to municipal sewage treatment plant: Not applicable as there is no release to wastewater.

Conditions and measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

2.2 Contributing scenario controlling worker exposure for:

- PROC1 : Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
PROC2 : Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC3 : Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC8a : Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b : Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC16 : Use of fuels

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)

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Date of issue: 01.10.2007
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Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa at STP
Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented

Amount used
not applicable

Frequency and duration of use
Covers daily exposures up to 8 hours : 8 h
(unless stated differently)

Technical conditions and measures

G18 General Measures (carcinogens).

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general / local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean / flush equipment, where possible, prior to maintenance.

CS15 General exposures (closed systems). OC9 Outdoor.

Handle substance within a closed system.

GEST_12I Use as a fuel, CS107 (closed systems)

Handle substance within closed systems.

CS502 Bulk closed unloading

Ensure material transfers are under containment or extract ventilation.

CS8 Drum/batch transfers

Ensure material transfers are under containment or extract ventilation.

CS507 Refuelling

Ensure material transfers are under containment or extract ventilation.

CS5 Equipment maintenance

Drain down system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

CS67 Storage.

Store substance within a closed system. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Organisational measures to prevent/limit releases, dispersion and exposure:

G19 General measures (skin irritants)

Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop.

G18 General Measures (carcinogens).

Where there is potential for exposure: Restrict access to authorised staff; provide specific activity training to operators to minimise exposures. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance.

GEST_12I Use as a fuel, CS107 (closed systems)

No specific measures identified.

CS8 Drum/batch transfers

No specific measures identified.

CS507 Refuelling

No specific measures identified.

CS5 Equipment maintenance

Ensure operatives are trained to minimise exposures.

Safety Data Sheet as per EC Regulation No. 1907/2006



Eurosuper (Ethanol)
PdNr. 436070

Date of issue: 01.10.2007
Revision Date: 16.05.2018

Conditions and measures related to personal protection, hygiene and health evaluation

G19 General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off skin contamination immediately.

G18 General Measures (carcinogens).

Where there is potential for exposure: Wear suitable gloves (tested to EN374) and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely.

GEST_12I Use as a fuel, CS107 (closed systems)

No specific measures identified.

CS8 Drum/batch transfers

No specific measures identified.

CS507 Refuelling

No specific measures identified.

CS5 Equipment maintenance

Clear spills immediately.

3. Exposure estimation and reference to its source

3.1. Health:

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

3.2. Environment:

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

4.1. Health:

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

4.2. Environment:

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

Maximum Risk Characterisation Ratio for Air Emissions RCR_{air}

0,0095

Maximum Risk Characterisation Ratio for Wastewater Emissions RCR_{water}

0,02

Safety Data Sheet as per EC Regulation No. 1907/2006



Eurosuper (Ethanol)
PdNr. 436070

Date of issue: 01.10.2007
Revision Date: 16.05.2018

1. Brief title of the Exposure Scenario: 12c - Use as a fuel - Consumer

Life-cycle stage	: C: Consumer use
Process category	: PC13: Fuels
Environmental release category	: ERC9a: Widespread use of functional fluid (indoor) ERC9b: Widespread use of functional fluid (outdoor)
Further information	: Specific Environmental Release Category ESVOC SpERC 9.12c.v1
Processes, tasks, activities covered	: Covers consumer uses in fuels. Gasoline (content of benzene < 1 %)

2.1 Contributing scenario controlling environmental exposure for:

ERC9a, Widespread use of functional fluid (indoor)

ERC9b, Widespread use of functional fluid (outdoor)

Product characteristics

Amount used

Remarks	: Substance is complex UVCB. Predominantly hydrophobic.
Regional use tonnage	: 8,2 10E6 t/y
Annual site tonnage (tonnes/year)	: 4.100
Maximum daily site tonnage (kg/day)	: 11.000
Fraction of EU tonnage used in region	: 0,1
Fraction of Regional tonnage used locally	: 0,0005
MSafe (maximum allow able site tonnage)	: 530.000 kg/day
Remarks	: Maximum allow able site tonnage (MSafe) based on release follow ing total w astewater treatment removal

Frequency and duration of use

Continuous exposure	: 365 Emission days (days/year), Continuous release.
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Environmental factors not influenced by risk management

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

Other given operational conditions affecting environmental exposure

Continuous release (FD2).	
Emission or Release Factor: Air	: 1 %
Emission or Release Factor: Water	: 0,001 %
Emission or Release Factor: Soil	: 0,001 %
Remarks	: All release factors refer to release from wide dispersive use. Release factors for air and soil refer to regional use only. Release to water is release to wastewater.

Conditions and measures related to municipal sewage treatment plant

Flow rate of sewage treatment plant effluent	: 2.000 m3/d
Effectiveness (STP)	: 96,1 %
Remarks	: Conditions and measures related to municipal sewage treatment plant:., Not applicable as there is no release to wastewater.

Safety Data Sheet as per EC Regulation No. 1907/2006



Eurosuper (Ethanol)
PdNr. 436070

Date of issue: 01.10.2007
Revision Date: 16.05.2018

Conditions and measures related to external treatment of waste for disposal

Waste treatment : Combustion emissions limited by required exhaust emission controls., External treatment and disposal of waste should comply with applicable local and/or national regulations.

Remarks : Combustion emissions considered in regional exposure assessment.

Conditions and measures related to external recovery of waste

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

2.2 Contributing scenario controlling consumer exposure for:

PC13 : Fuels

Product characteristics

Concentration of the Substance in Mixture/Article : Unless otherwise stated, cover concentrations up to 100%
Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa at STP
Remarks : Unless otherwise stated assumes use at ambient temperatures. Assumes use in a 20 m³ room. Assumes use with typical ventilation.

Amount used

Unless otherwise stated, covers use amounts up to : 37.500 g

Frequency and duration of use

For each use event, covers exposure up to : 2 h
2 hr/event.
Frequency of use : Unless otherwise stated, covers use frequency up to 0,143 times per day (ConsOC4);

Human factors not influenced by risk management:

Exposed skin area : Covers skin contact area up to 420cm².

Other given operational conditions affecting consumers exposure

Activity (outdoor/indoor) : PC13:Fuels--Liquid - subcategories added: Automotive Refuelling
Remarks : Covers use up to 52 days/year., Covers use up to 1 time/on day of use., Covers skin contact area up to 210 cm²., For each use event, covers use amounts up to 37500g., Covers outdoor use., covers use in room size of 100m³., For each use event, covers exposure up to 0,05hr/event.
Activity (outdoor/indoor) : PC13:Fuels--Liquid - subcategories added: Scooter Refuelling
Remarks : Covers use up to 52 days/year., Covers use up to 1 time/on day of use., Covers skin contact area up to 210 cm²., For each use event, covers use amounts up to 3750g., Covers outdoor use., covers use in room size of 100m³., For each use event, covers exposure up to 0,03hr/event.
Activity (outdoor/indoor) : PC13:Fuels--Liquid - subcategories added: Garden Equipment - Use
Remarks : Covers use up to 26 days/year., Covers use up to 1 time/on day of use., For each use event, covers use amounts up to 750g., Covers outdoor use., covers use in room size of 100m³., For each use event, covers exposure up to 2 hr/event.
Activity (outdoor/indoor) : PC13:Fuels--Liquid (subcategories added): Garden Equipment - Refuelling
Remarks : Covers use up to 26 days/year., Covers use up to 1 time/on day of use., Covers skin contact area up to 420cm²., For each use event, covers use amounts up to 750g., Covers use in a one car garage (34m³) under typical ventilation., covers use in room size of 34m³., For each use event, covers exposure up to 0,03hr/event.

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Application Route : PC13:Fuels--Liquid - subcategories added: Automotive Refuelling

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Date of issue: 01.10.2007
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Remarks	: No specific RMMs developed beyond those OCs stated
Application Route	: PC13:Fuels--Liquid - subcategories added: Scooter Refuelling
Remarks	: No specific RMMs developed beyond those OCs stated
Application Route	: PC13:Fuels--Liquid - subcategories added: Garden Equipment - Use
Remarks	: No specific RMMs developed beyond those OCs stated
Application Route	: PC13:Fuels--Liquid (subcategories added): Garden Equipment - Refuelling
Remarks	: No specific RMMs developed beyond those OCs stated

3. Exposure estimation and reference to its source

3.1. Health:

The ECETOC TRA tool has been used to estimate consumer exposures, consistent with the content of ECETOC report 107 and the Chapter R15 of the IR&CSA TGD. Where exposure determinants differ to these sources, then they are indicated.

3.2. Environment:

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

4.1. Health:

Predicted exposures are not expected to exceed the applicable consumer reference values when the operational conditions/risk management measures given in section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

4.2. Environment:

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

Maximum Risk Characterisation Ratio for Air Emissions RCR_{air}

0,0096

Maximum Risk Characterisation Ratio for Wastewater Emissions RCR_{water}

0,021