SAFETY DATA SHEET

RON92 unleaded gasoline

Document: DE-SDS-RON92-GASOLINE | Revision 1.2 | 20 March 2026 | English
Technical source: Burgas SDS 913668 v01 (21 December 2022).

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

1.1. Product identifier

Trade name or designation of the mixture	RON92 unleaded gasoline
Registration number	-
UFI:	3FDM-VM7P-3208-QE1A
Synonyms	Unleaded Gasoline

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

Identified uses	Use as a fuel. A complete list of registered uses for this product can be found in the table of content of the exposure scenario for communication, available as an annex to the eSDS.
Uses advised against	None known.

1.3. Details of the supplier of the safety data sheet

Supplier / distributor: Drakensberg Energy Europe EOOD | UIC 208760847
1st office, 5th floor, 9–11 Knyaginya Maria Luisa Blvd.
Vazrazhdane, 1000 Sofia, Bulgaria
Business telephone: +27 82 902 0083
SDS contact: gonnie@drakensbergenergy.com
Manufacturer: LUKOIL Neftohim Burgas AD, Burgas 8104, Bulgaria

1.4. Emergency telephone numbers
Bulgaria / EU emergency services: 112 (24 hours).
National Toxicology Centre, N. I. Pirogov, Sofia: +359 2 9154 233.
At destination, also contact the local emergency / poison service and activate the client site or vessel emergency response plan. Give this SDS to responders.
The business mobile above is not a medical emergency advisory service.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Physical hazards		
Flammable liquids	Category 1	H224 - Extremely flammable liquid and vapour.
Health hazards		
Skin corrosion/irritation	Category 2	H315 - Causes skin irritation.
Germ cell mutagenicity	Category 1B	H340 - May cause genetic defects.
Carcinogenicity	Category 1B	H350 - May cause cancer.
Reproductive toxicity	Category 2	H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child.
Specific target organ toxicity - single exposure	Category 3 narcotic effects	H336 - May cause drowsiness or dizziness.
Aspiration hazard	Category 1	H304 - May be fatal if swallowed and enters airways.
Environmental hazards		
Hazardous to the aquatic environment, long-term aquatic hazard	Category 2	H411 - Toxic to aquatic life with long lasting effects.

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2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Gasoline

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.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H350	May cause cancer.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261	Avoid breathing mist/vapour.
P273	Avoid release to the environment.
P201	Obtain special instructions before use.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response

P301 + P310	IF SWALLOWED: Immediately call a POISON CENTRE/doctor.
P331	Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P370 + P378	In case of fire: Use appropriate media to extinguish.
P391	Collect spillage.

Storage Not assigned.

Disposal Not assigned.

Supplemental information on the label Not applicable.

2.3. Other hazards

Hydrogen sulphide (H2S) can accumulate in the headspace of storage tanks and reach potentially hazardous concentrations.
This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.
The mixture does not contain any substances included in the list established in accordance with REACH Article 59(1) for having endocrine disrupting properties at a concentration equal to or greater than 0.1% by weight.
The mixture does not contain any substances having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0.1% by weight.

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SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Gasoline	≥ 85	86290-81-5 289-220-8	01-2119471335-39-0034	649-378-00-4	

Classification: Flam. Liq. 1;H224, Skin Irrit. 2;H315, Muta. 1B;H340, Carc. 1B;H350, Repr. 2;H361fd, STOT SE 3;H336, Asp. Tox. 1;H304, Aquatic Chronic 2;H411

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
tert-Butyl methyl ether	≤ 15	1634-04-4 216-653-1	01-2119452786-27-0028	603-181-00-X	#

Classification: Flam. Liq. 2;H225, Skin Irrit. 2;H315

List of abbreviations and symbols that may be used above

#: This substance has been assigned Union workplace exposure limit(s).

Composition comments Hydrogen sulphide (H2S) can accumulate in the headspace of storage tanks and reach potentially hazardous concentrations. The full text for all H-statements is displayed in section 16.
All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

General information Get medical attention if any discomfort develops.

4.1. Description of first aid measures

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Get medical attention if discomfort develops or persists.

If there is any suspicion of inhalation of H2S:
Rescuers must wear breathing apparatus, belt and safety rope, and follow rescue procedures.
Remove casualty to fresh air as quickly as possible.
Immediately begin artificial respiration if breathing has ceased.
Provision of oxygen may help.
Obtain medical advice for further treatment.

Skin contact Immediately remove contaminated clothing. Wash with soap and water. Continue to rinse for at least 15 minutes. In case of rashes, wounds or other skin disorders: Seek medical attention and bring along these instructions. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

Eye contact Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids wide apart. Get medical attention if irritation develops or persists.

Ingestion Rinse the mouth. Do not induce vomiting or give anything to drink. Obtain immediate medical or poison-centre advice and arrange urgent medical assessment. Keep the casualty under observation. If vomiting occurs, keep the head low to reduce aspiration risk. Never give anything by mouth to an unconscious person. Take this SDS to the medical team.

4.2. Most important symptoms and effects, both acute and delayed Irritation of eyes and mucous membranes. Skin irritation. Dermatitis. Ingestion may cause irritation and malaise. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

4.3. Indication of any immediate medical attention and special treatment needed Treat symptomatically. The effects might be delayed.

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SECTION 5: Firefighting measures

General fire hazards

The product is extremely flammable, and explosive vapour/air mixtures may be formed even at normal room temperatures. Material will float and can be re-ignited on surface of water.

5.1. Extinguishing media

Suitable extinguishing media

Dry chemical, CO2, sand, earth, water spray or regular foam.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

5.2. Special hazards arising from the substance or mixture

Thermal decomposition may produce smoke, oxides of carbon and lower molecular weight organic compounds whose composition have not been characterised. Sulfur Oxides (SOx). Nitrogen Oxides (NOx).

5.3. Advice for firefighters

Special protective equipment for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special fire fighting procedures

Move containers from fire area if you can do it without risk. Use water spray to cool unopened containers. Cool containers with flooding quantities of water until well after fire is out.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Keep upwind. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Avoid breathing mist or vapour. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear appropriate personal protective equipment.

For emergency responders

Use personal protection as recommended in section 8 of the SDS.

6.2. Environmental precautions

Prevent spreading over a wide area (e.g. by containment or oil barriers). Do not contaminate water. Contact local authorities in case of spillage to drain/aquatic environment.

6.3. Methods and material for containment and cleaning up

Remove sources of ignition. Beware of the explosion danger. Absorb spillage with non-combustible, absorbent material.

Large Spills: Stop the flow of material, if this is without risk. Dike far ahead of spill for later disposal. Remove with vacuum trucks or pump to storage/salvage vessels. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

Small Spills: Ensure that waste and contaminated materials are collected and removed from the work area as soon as possible in a suitably labelled container. Wash area with soap and water. If necessary dike the product with dry earth, sand or similar non-combustible materials.

6.4. Reference to other sections

For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Before entering storage tanks and commencing any operation in a confined area check the atmosphere for oxygen content and flammability. (Subject to applicability) If sulphur compounds are suspected to be present in the product, check the atmosphere for H2S content. Access to work area should be restricted to people handling the product only. Should be handled in closed systems, if possible. Avoid contact with eyes, skin, and clothing. Avoid inhalation of vapours. Wear appropriate personal protective equipment. The product is extremely flammable, and explosive vapour/air mixtures may be formed even at normal room temperatures. Ground container and transfer equipment to eliminate static electric sparks. Vapours are heavier than air and may travel along the floor and in the bottom of containers. Immediately change contaminated clothes. Do not eat, drink or smoke when using the product. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities

Follow rules for flammable liquids. Keep away from heat, sparks and open flame. Keep in a cool, well-ventilated place. Keep away from food, drink and animal feeding stuffs. Store away from incompatible materials.

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

ANNEX 1, PART 2 Named dangerous substances
- 34. Petroleum products and alternative fuels (Lower-tier requirements = 2 500 tonnes; Upper-tier requirements = 25 000 tonnes)

7.3. Specific end use(s)

For detailed information, see section 1.

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Agent / reference	8-hour TWA	15-minute STEL / note
Gasoline (cracked-gasoline entry)	300 mg/m³	—
Methyl tert-butyl ether, CAS 1634-04-4	183.5 mg/m³ / 50 ppm	367 mg/m³ / 100 ppm
Benzene, CAS 71-43-2	0.66 mg/m³ / 0.2 ppm	Skin notation; effective 5 April 2026
Hydrogen sulphide, CAS 7783-06-4	7 mg/m³ / 5 ppm	14 mg/m³ / 10 ppm

Statutory chemical-agent entries: Bulgarian Ordinance No 13, consolidated 2026 edition. Benzene: Bulgarian Ordinance No 10 and Directive (EU) 2022/431. The refinery DNELs/PNECs and other protective measures remain in Section 8 and the exposure annexes. An exposure limit is not a boundary between safe and harmful exposure. Control inhalation and skin contact and use the lower applicable risk-management value.

Hydrogen sulphide may accumulate in tank headspaces. Monitor the atmosphere before entry or opening. Odour is not a reliable warning. Air-purifying filters are unsuitable for oxygen-deficient atmospheres or uncontrolled H_2S concentrations; trained responders require suitable supplied-air protection.

Biological limit values No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no effect levels (DNELs)

General population

Components	Value	Assessment factor	Notes
Gasoline (CAS 86290-81-5)			
Long-term, Local, Inhalation	178,57 mg/m3	10	irritation respiratory tract
Long-term, Systemic, Inhalation	0,41 mg/m3		Repeated dose toxicity
Short-term, Local, Inhalation	640 mg/m3	15	irritation respiratory tract
Short-term, Systemic, Inhalation	1152 mg/m3	15	Neurotoxicity
tert-Butyl methyl ether (CAS 1634-04-4)			
Long-term, Systemic, Dermal	3570 mg/kg		Repeated dose toxicity
Long-term, Systemic, Inhalation	53,6 mg/m3	1,7	Repeated dose toxicity
Long-term, Systemic, Oral	7,1 mg/kg		Repeated dose toxicity
Short-term, Local, Inhalation	214 mg/m3	1,7	irritation respiratory tract

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Workers

Components	Value	Assessment factor	Notes
Gasoline (CAS 86290-81-5)			
Long-term, Local, Inhalation	837,5 mg/m3	6	irritation respiratory tract
Long-term, Systemic, Inhalation	1,9 mg/m3		Repeated dose toxicity
Short-term, Local, Inhalation	1066,67 mg/m3	9	irritation respiratory tract
Short-term, Systemic, Inhalation	1286,4 mg/m3	9	Neurotoxicity
tert-Butyl methyl ether (CAS 1634-04-4)			
Long-term, Systemic, Dermal	5100 mg/kg		Repeated dose toxicity
Long-term, Systemic, Inhalation	178,5 mg/m3		Repeated dose toxicity
Short-term, Local, Inhalation	357 mg/m3		irritation respiratory tract

Predicted no effect concentrations (PNECs)

Components	Value	Assessment factor	Notes
tert-Butyl methyl ether (CAS 1634-04-4)			
Freshwater	5,1 mg/l	10	
Marine water	0,26 mg/l	100	
Sediment (freshwater)	23 mg/kg		
Sediment (marine water)	1,17 mg/kg		
Soil	1,56 mg/kg	100	
STP	71 mg/l	10	

8.2. Exposure controls

Appropriate engineering controls: In the absence of occupational exposure limits for this product it is recommended that the above mentioned standards are followed. Provide adequate ventilation and minimise the risk of inhalation of vapours and oil mist. Provide easy access to water supply and eye wash facilities. Use explosion-proof equipment.

Individual protection measures, such as personal protective equipment

General information: Use personal protective equipment as required. Keep working clothes separately. Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection: Wear goggles/face shield. Eye protection should meet standard EN 166.

Skin protection

- Hand protection: Wear suitable gloves tested to EN374. Nitrile gloves are recommended, but be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

- Other: Protection suit must be worn. Anti-static and flame-retardant protective clothing is recommended.

Respiratory protection: In case of inadequate ventilation or when the product is heated, use suitable respiratory equipment with gas filter (type A2).

Thermal hazards: Wear appropriate thermal protective clothing, when necessary.

Hygiene measures: When using, do not eat, drink or smoke. Wash hands after handling. Launder contaminated clothing before reuse. Private clothes and working clothes should be kept separately. Handle in accordance with good industrial hygiene and safety practices. Observe any medical surveillance requirements.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid.

Form: Liquid.

Colour: Colourless.

Odour: Petroleum.

Melting point/freezing point: < -20 °C (< -4 °F)

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Boiling point or initial boiling point and boiling range	> 38 - < 210 °C (> 100,4 - < 410 °F)
Flammability	Extremely flammable liquid and vapour.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	1,4 %
Explosive limit – upper (%)	7,6 %
Flash point	< 55 °C (< 131 °F)
Auto-ignition temperature	> 280 - < 470 °C (> 536 - < 878 °F)
Decomposition temperature	Not determined.
pH	Not applicable.
Kinematic viscosity	<= 1 mm^2/s (37,8 °C (100,04 °F))
Solubility	
Solubility (water)	Insoluble in water.
Partition coefficient (n-octanol/water) (log value)	Not applicable.
Vapour pressure	> 4 - < 240 kPa (37,8°C/100°F)
Density and/or relative density	
Relative density	> 0,62 - < 0,88 (15 °C (59 °F))
Relative density temperature	15 °C (59 °F)
Vapour density	Not determined.
Particle characteristics	Not applicable, material is a liquid.
9.2. Other information	
9.2.1. Information with regard to physical hazard classes	No relevant additional information available.
9.2.2. Other safety characteristics	No relevant additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is non-reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Stable at normal conditions.
10.3. Possibility of hazardous reactions	Hazardous polymerisation does not occur. Hazardous reactions do not occur.
10.4. Conditions to avoid	Heat, sparks, flames, elevated temperatures. Contact with incompatible materials.
10.5. Incompatible materials	Strong acids. Strong oxidising agents.
10.6. Hazardous decomposition products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Inhalation	Breathing of high concentrations may cause dizziness, light-headedness, headache, nausea and loss of co-ordination. Continued inhalation may result in unconsciousness.
Skin contact	Causes skin irritation. Repeated exposure may cause skin dryness or cracking. May be absorbed through the skin.
Eye contact	May cause eye irritation on direct contact.
Ingestion	Ingestion may cause irritation and malaise.

Symptoms Skin irritation. Dermatitis. Irritation of eyes and mucous membranes. Irritation of nose and throat.

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

Acute toxicity

Breathing of high concentrations may cause dizziness, light-headedness, headache, nausea and loss of co-ordination. Continued inhalation may result in unconsciousness. Irritant effect on skin. May irritate and cause stomach pain, vomiting, diarrhoea and nausea. Human evidence indicates that the product has very low acute oral, dermal or inhalation toxicity. However, it can produce severe injury if taken into the lung as a liquid, and there may be profound central nervous system depression following prolonged exposure to high levels of vapour.

Components	Species	Test Results
Gasoline (CAS 86290-81-5)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Rat	> 5610 mg/m3
Oral		
LD50	Rat	> 5000 mg/kg

Skin corrosion/irritation

Causes skin irritation. Pre-existing skin conditions including dermatitis might be aggravated by exposure to this product.

Serious eye damage/eye irritation

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

Respiratory sensitisation

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

Skin sensitisation

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

Germ cell mutagenicity

May cause genetic defects.

Carcinogenicity

May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Gasoline (CAS 86290-81-5)	2B Possibly carcinogenic to humans.
tert-Butyl methyl ether (CAS 1634-04-4)	3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure

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

Aspiration hazard

Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Mixture versus substance information

Not available.

11.2. Information on other hazards

Endocrine disrupting properties

This mixture does not contain any substances having endocrine disrupting properties with respect to human health as assessed in accordance with the criteria set out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605, at a concentration equal to or greater than 0.1% by weight.

Other information

Components of the product may be absorbed into the body through the skin.

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SECTION 12: Ecological information

12.1. Toxicity Toxic to aquatic life with long lasting effects.

Components		Species	Test Results
Gasoline (CAS 86290-81-5)			
Aquatic			
Algae	EC50	Pseudokirchneriella subcapitata	3,1 mg/l, 72 Hours
Crustacea	EC50	Daphnia magna	4,5 mg/l, 48 Hours
Fish	LC50	Oncorhynchus mykiss	10 mg/l, 96 Hours
		Pimephales promelas	8,2 mg/l, 96 Hours
tert-Butyl methyl ether (CAS 1634-04-4)			
Aquatic			
Algae	EC50	Pseudokirchneriella subcapitata	491 mg/l, 96 Hours
Crustacea	EC50	Daphnia magna	472 mg/l, 48 Hours
		Mysid shrimp	106 mg/l, 48 Hours
Fish	LC50	Inland silverside (Menidia beryllina)	574 mg/l, 96 Hours

12.2. Persistence and degradability Expected to be inherently biodegradable.

12.3. Bioaccumulative potential Has the potential to bioaccumulate.

Partition coefficient n-octanol/water (log Kow)

tert-Butyl methyl ether (CAS 1634-04-4) 0,94

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil Based on the calculation model the product has a low potential of being absorbed in the soil.

Mobility in general The product is insoluble in water. It will spread on the water surface while some of the components will eventually sediment in water systems. The volatile components of the product will spread in the atmosphere.

12.5. Results of PBT and vPvB assessment This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.

12.6. Endocrine disrupting properties This mixture does not contain any substances having endocrine disrupting properties with respect to the environment as assessed in accordance with the criteria set out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605, at a concentration equal to or greater than 0.1% by weight.

12.7. Other adverse effects The product contains volatile organic compounds which have a photochemical ozone creation potential. Oil spills are generally hazardous to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste Dispose in accordance with local regulations.

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied.

EU waste code 13 07 02*
13 07 03* The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Disposal methods/information Dispose in accordance with all applicable regulations. This material and/or its container must be disposed of as hazardous waste.

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SECTION 14: Transport information

ADR

14.1. UN number	UN1203
14.2. UN proper shipping name	GASOLINE
14.3. Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Hazard No. (ADR)	33
Tunnel restriction code	D/E
14.4. Packing group	II
14.5. Environmental hazards	Yes
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

RID

14.1. UN number	UN1203
14.2. UN proper shipping name	GASOLINE
14.3. Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
14.4. Packing group	II
14.5. Environmental hazards	Yes
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

ADN

14.1. UN number	UN1203
14.2. UN proper shipping name	GASOLINE
14.3. Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
14.4. Packing group	II
14.5. Environmental hazards	Yes

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14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

14.1. UN number	UN1203
14.2. UN proper shipping name	GASOLINE
14.3. Transport hazard class(es)	
Class	3
Subsidiary risk	-
14.4. Packing group	II
14.5. Environmental hazards	Yes
ERG Code	3H
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

14.1. UN number	UN1203
14.2. UN proper shipping name	GASOLINE
14.3. Transport hazard class(es)	
Class	3
Subsidiary risk	-
14.4. Packing group	II
14.5. Environmental hazards	
Marine pollutant	Yes
EmS	F-E, S-E
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
14.7. Maritime transport in bulk according to IMO instruments	This product is considered to fall under the scope of Annex I to Marpol 73/78 and is subject to the requirements of that Annex if carried in bulk.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations specific to the product
This supplier edition uses the REACH Regulation (EC) No 1907/2006, Annex II as amended by Regulation (EU) 2020/878, and the CLP Regulation (EC) No 1272/2008, as amended. Classification and composition are retained from the identified refinery SDS.

Bulgaria: apply Ordinance No 13 on protection against chemical agents at work, and Ordinance No 10 on carcinogens, mutagens and reprotoxic substances, as amended. The occupational limits and control references used in this edition appear in Section 8.1 and its continuation. Apply workplace risk assessment, exposure minimisation, appropriate medical surveillance and relevant national waste and environmental rules.

The source identifies carcinogenic and/or mutagenic substances. REACH Annex XVII restrictions and the applicable industrial/professional-use conditions must be observed. Worker protection under Directive 2004/37/EC, as amended, applies to relevant CMR exposure.

Observe national provisions implementing Directive 94/33/EC for young workers and Directive 92/85/EEC for pregnant, recently delivered or breastfeeding workers, including the required workplace risk assessment and restrictions.

Major-accident control: the petroleum-products provisions in Annex I, Part 2 of Directive 2012/18/EU (Seveso III) are relevant. Site obligations depend on the inventory and the applicable aggregation rules.

Transport instruments for road and sea carriage are identified in Section 14. This English edition accompanies international trade; a Bulgarian-language SDS is required for supply on the Bulgarian market.

15.2. Chemical safety assessment
The refinery source states that no chemical safety assessment has been carried out for the mixture.

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SECTION 16: Other information

List of abbreviations

UVCB: Substances of Unknown or Variable composition, Complex reaction products or Biological materials.
DNEL: Derived No-Effect Level.
PNEC: Predicted No-Effect Concentration.
PBT: Persistent, bioaccumulative and toxic.
vPvB: Very Persistent and very Bioaccumulative.
LD50: Lethal Dose, 50%.
LC50: Lethal Concentration, 50%.
EC50: Effective Concentration, 50%.

References

IARC Monographs. Overall Evaluation of Carcinogenicity
IUCLID
Chemical safety report.

Information on evaluation method leading to the classification of mixture

The mixture is classified based on test data for physical hazards. The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available. For details, refer to Sections 9, 11 and 12.

Full text of any statements, which are not written out in full under sections 2 to 15

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.
H336 May cause drowsiness or dizziness.
H340 May cause genetic defects.
H350 May cause cancer.
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
H411 Toxic to aquatic life with long lasting effects.

This SDS contains revisions in the following section(s):

1, 2, 3, 6, 7, 8, 9, 11, 12, 14, 15, 16.

Training information

Follow training instructions when handling this material.

This information concerns the identified product and its safe handling. Product-source attribution and the supplier revision record appear in Section 16.

Document control

Supplier edition 1.2 | 20 March 2026 | English | Bulgaria

Product scope. Refinery RON92 unleaded gasoline represented by UFI 3FDM-VM7P-3208-QE1A and the composition in Section 3.

Technical source. LUKOIL Neftohim Burgas AD, SDS 913668, version 01, 21 December 2022. Refinery source. The source technical data and exposure annexes, where provided, are retained.

Changes in this supplier edition. EU supplier and emergency contacts; English document control and product identification; Bulgarian exposure-limit references and national regulatory information; ingestion first-aid wording aligned with chemical-emergency guidance. Classification and composition are unchanged.

Emergency reference: Bulgarian Ministry of Environment and Water. Workplace limits: Ordinance No 13; Ordinance No 10. First aid: CDC chemical-emergency guidance.

The SDS describes health, safety and environmental precautions for the identified product. It is not a batch quality certificate. Read it together with the applicable cargo documents and exposure-scenario conditions.

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Annex to the extended Safety Data Sheet (eSDS)

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1 - Exposure Scenario Worker

1. Manufacture of Low Boiling Point Naphthas

List of use descriptors	
Sector(s) of Use	SU3: Industrial uses
Name of contributing environmental scenario and corresponding ERC	ERC1: Manufacture of the substance
List of names of contributing worker scenarios and corresponding PROCs	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/discharging) at non dedicated-facilities PROC8b: Transfer of substance or mixture (charging/discharging) at dedicated facilities PROC15: Use as laboratory reagent
Further explanations	
Other Process or activity	Manufacture of the substance or use as a process chemical or extraction agent within closed or contained systems. Includes incidental exposures during recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).

2.1.1. Contributing scenario controlling environmental exposure for Manufacture of the substance

Product characteristics	
Physical state	Liquid. Substance is complex UVCB. Predominantly hydrophobic
Amounts used	
Fraction of EU tonnage used in region	1
Regional use tonnage	2200000 tonnes/year
Fraction of regional tonnage used locally	1
Annual amount per site	600000 tonnes/day
Maximum daily site tonnage	2000000 kg/day
Frequency and duration of use	
Batch process	Not applicable.
Continuous process	Emission days (days/year): 300
Environment factors not influenced by risk management	
Local freshwater dilution factor:	10

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Local marine water dilution factor:	100

Other given operational conditions affecting environmental exposure

	Emission days	Emission factors			
Type	**(days/year)**	**Air**	**Soil**	**Water**	**Remarks**
initial release prior to RMM	300 days per year	0,05	0,0001	0,003	

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used.

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

Air	Not available.
Soil	Not available.
Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of ≥ (%): 99.9. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of ≥ (%): 96.9.
Sediment	Not available.
Organisational measures to prevent/limit release from site	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/treatment plant (m3/d)

Type	Municipal Sewage Treatment Plant
Discharge rate	10000 m^3/day
Treatment effectiveness	95,8 %
Sludge treatment technique	Not available.
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	99,8 %

Conditions and measures related to external treatment of waste for disposal

Fraction of used amount transferred to external waste treatment

Suitable waste treatment	During manufacturing no waste of the substance is generated.
Treatment effectiveness	Not available.

Conditions and measures related to external recovery of waste

Fraction of used amount transferred to external waste treatment

Suitable recover operations	During manufacturing no waste of the substance is generated.

2.2.1. Contributing scenario controlling worker exposure for Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Product characteristics

Concentration of the substance in a mixture	Covers percentage substance in the product up to 100 %.

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Physical form of the product	Liquid, vapour pressure > 10 kPa at Standard Temperature and Pressure
vapour pressure	Not available.
Process temperature	Assumes use at not more than 20°C above ambient temperature.

Amounts used

Not available.

Frequency and duration of use

Covers daily exposures up to 8 hours

Human factors not influenced by risk management

Other given operational conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented

Other relevant operational conditions

Not available.

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	General exposures (closed systems) With sample collection, Continuous process, Batch process: Handle substance within a closed system.
Technical conditions and measures to control dispersion from source towards the worker	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. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves 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. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. General exposures (closed systems) With sample collection: Sample via a closed loop or other system to avoid exposure. General exposures (closed systems): Ensure operation is undertaken outdoors. Laboratory activities: Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure.
Organizational measures to prevent/limit releases, dispersion and exposure	Bulk transfers: Ensure material transfers are under containment or extract ventilation. 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. Clear spills immediately. Storage: Ensure operation is undertaken outdoors. Store substance within a closed system.
Conditions and measures related to personal protection, hygiene and health evaluations	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 any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. General exposures (closed systems) with sample collection: Wear suitable gloves tested to EN374. Equipment cleaning and maintenance: Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

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3. Exposure Estimation

Environment

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

Health

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

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

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. 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.

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 on-site 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). Scaled local assessments for EU refineries have been performed using site-specific data and are attached in PETRORISK file - "Site-Specific Production" worksheet. For refinery sites where scaling revealed a condition of unsafe use (i.e., RCRs > 1), a site-specific chemical safety assessment was required. Consequently a Tier 2 assessment was performed in an attempt to refine conservative exposure assumptions and improve risk estimates. The Tier 2 that involved the correction of the fence-line ambient air concentrations taking into account EU air monitoring data analysis demonstrates that no refineries have RCRs > 1 (see PETRORISK file in IUCLID section 13 – "Site-Specific Prod Naphtha T2" worksheet and the Appendix PETRORISK Higher Tier in IUCLID section 13).

2 - Exposure Scenario Worker

1. Distribution of Low Boiling Point Naphthas (Gasoline) – Industrial

List of use descriptors	
Sector(s) of Use	SU3: Industrial uses
Name of contributing environmental scenario and corresponding ERC	ERC1: Manufacture of the substance ERC2: Formulation into mixture ERC3: Formulation into solid matrix 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 Specific Environmental Release Category: ESVOC SpERC 1.1b.v1
List of names of contributing worker scenarios and corresponding PROCs	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/discharging) at non dedicated-facilities PROC8b: Transfer of substance or mixture (charging/discharging) at dedicated facilities PROC15: Use as laboratory reagent

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2.1.1. Contributing scenario controlling environmental exposure for Manufacture of the substance

Product characteristics

Physical state Substance is complex UVCB. Predominantly hydrophobic

Amounts used

Fraction of EU tonnage used in region	0,1
Regional use tonnage	187000 tonnes/year
Fraction of regional tonnage used locally	0,002
Annual amount per site	37500 tonnes/year
Maximum daily site tonnage	120000 kg/day

Frequency and duration of use

Batch process	Not applicable.
Continuous process	Emission days (days/year): 300

Environment factors not influenced by risk management

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

Other given operational conditions affecting environmental exposure

	Emission days	Emission factors			
Type	**(days/year)**	**Air**	**Soil**	**Water**	**Remarks**
initial release prior to RMM	300 days per year	0,001	0,00001	0,00001	

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used.

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

Air	Treat air emission to provide a typical removal efficiency of (%): 90
Soil	Not available.
Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of ≥ (%): 12. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of ≥ (%): 0
Sediment	Not available.
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.

Organisational measures to prevent/limit release from site	Not available.

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Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/treatment plant (m3/d)

Type	Municipal Sewage Treatment Plant
Discharge rate	2000 m^3/day
Treatment effectiveness	95,5 %
Sludge treatment technique	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Remarks	Maximum allowable site tonnage (MSafe) 1,1e6 kg/d
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	95,5 %

Conditions and measures related to external treatment of waste for disposal

Fraction of used amount transferred to external waste treatment

Suitable waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
Treatment effectiveness	Not available.

Conditions and measures related to external recovery of waste

Fraction of used amount transferred to external waste treatment

Suitable recover operations	External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2.1. Contributing scenario controlling worker exposure for Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Product characteristics

Physical form of the product	Liquid, vapour pressure > 10 kPa at Standard Temperature and Pressure
vapour pressure	Not available.

Amounts used

Covers percentage substance in the product up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours

Human factors not influenced by risk management

Other given operational conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented.

Other relevant operational conditions

Assumes use at not more than 20°C above ambient temperature.

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	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. Clear spills immediately. Storage: Ensure operation is undertaken outdoors. Store substance within a closed system.

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Technical conditions and measures to control dispersion from source towards the worker	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. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves 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. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. Process sampling: Sample via a closed loop or other system to avoid exposure. Laboratory activities: Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure. Bulk closed loading and unloading: Ensure material transfers are under containment or extract ventilation.
Organizational measures to prevent/limit releases, dispersion and exposure	Not available.
Conditions and measures related to personal protection, hygiene and health evaluations	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 any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. General exposures (closed systems) With sample collection: Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure. Wear suitable gloves tested to EN374. General exposures (closed systems): Handle substance within a closed system.

3. Exposure Estimation

Environment

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

Health

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

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

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 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.

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 on-site 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).

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3 - Exposure Scenario Worker

1. Formulation & (re)packing of Low Boiling Point Naphthas (Gasoline) – Industrial

List of use descriptors

Sector(s) of Use	SU3: Industrial uses SU10: Formulation [mixing] of preparations and/or re-packaging
Name of contributing environmental scenario and corresponding ERC	ERC2: Formulation into mixture Specific Environmental Release Category: ESVOC SpERC 2.2.v1
List of names of contributing worker scenarios and corresponding PROCs	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/discharging) at non dedicated-facilities PROC8b: Transfer of substance or mixture (charging/discharging) at dedicated facilities PROC15: Use as laboratory reagent

2.1.1. Contributing scenario controlling environmental exposure for Formulation into mixture

Product characteristics

Physical state	Substance is complex UVCB. Predominantly hydrophobic

Amounts used

Fraction of EU tonnage used in region	0,1
Regional use tonnage	1,65 e7
Fraction of regional tonnage used locally	0,0018
Annual amount per site	30000 tonnes/year
Maximum daily site tonnage	100000 kg/day

Frequency and duration of use

Batch process	Not applicable.
Continuous process	Emission days (days/year): 300

Environment factors not influenced by risk management

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

Other given operational conditions affecting environmental exposure

	Emission days	Emission factors			
Type	**(days/year)**	**Air**	**Soil**	**Water**	**Remarks**
initial release prior to RMM	300 days per year	0,025	0,0001	0,002	

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	Not available.

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

Air	Treat air emission to provide a typical removal efficiency of (%): 56.5
Soil	Not available.
Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of ≥ (%): 94.7. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of ≥ (%): 0
Sediment	Not available.

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Remarks	Prevent discharge of undissolved substance to or recover from onsite wastewater. 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.
Organisational measures to prevent/limit release from site	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/treatment plant (m3/d)

Type	Municipal Sewage Treatment Plant
Discharge rate	2000 m^3/day
Treatment effectiveness	95,5 %
Sludge treatment technique	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Remarks	Maximum allowable site tonnage (MSafe) 1,0e5 kg/d
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	95,5 %

Conditions and measures related to external treatment of waste for disposal

Fraction of used amount transferred to external waste treatment

Suitable waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
Treatment effectiveness	Not available.

Conditions and measures related to external recovery of waste

Fraction of used amount transferred to external waste treatment

Suitable recover operations	External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2.1. Contributing scenario controlling worker exposure for Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Product characteristics

Physical form of the product	Liquid, vapour pressure > 10 kPa at Standard Temperature and Pressure
vapour pressure	Not available.

Amounts used

Covers percentage substance in the product up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours

Human factors not influenced by risk management

Other given operational conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented.

Other relevant operational conditions

Assumes use at not more than 20°C above ambient temperature.

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	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. Clear spills immediately.

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	Storage: Store substance within a closed system.
Technical conditions and measures to control dispersion from source towards the worker	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. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves 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. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. Process sampling: Sample via a closed loop or other system to avoid exposure. Laboratory activities: Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure. Bulk closed loading and unloading. Bulk transfers. Drum/batch transfers: Ensure material transfers are under containment or extract ventilation.
Organizational measures to prevent/limit releases, dispersion and exposure	Not available.
Conditions and measures related to personal protection, hygiene and health evaluations	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 any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. General exposures (closed systems) With sample collection: Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure. Wear suitable gloves tested to EN374. General exposures (closed systems) Outdoor.: Handle substance within a closed system.

3. Exposure Estimation

Environment

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

Health

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

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

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 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.

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 on-site 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).

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4 - Exposure Scenario Worker

1. Use of Low Boiling Point Naphthas (Gasoline) as a fuel – Industrial

List of use descriptors

Sector(s) of Use	SU3: Industrial uses
Name of contributing environmental scenario and corresponding ERC	ERC7: Use of functional fluid at industrial site
List of names of contributing worker scenarios and corresponding PROCs	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/discharging) at non dedicated-facilities PROC8b: Transfer of substance or mixture (charging/discharging) at dedicated facilities PROC16: Use of fuels

2.1.1. Contributing scenario controlling environmental exposure for Use of functional fluid at industrial site

Product characteristics

Physical state	Substance is complex UVCB. Predominantly hydrophobic

Amounts used

Fraction of EU tonnage used in region	0,1
Regional use tonnage	1400000 tonnes/year
Fraction of regional tonnage used locally	1
Annual amount per site	1400000 tonnes/year
Maximum daily site tonnage	4600000 kg/day

Frequency and duration of use

Batch process	Not applicable.
Continuous process	Emission days (days/year): 300

Environment factors not influenced by risk management

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

Other given operational conditions affecting environmental exposure

	Emission days	Emission factors			
Type	**(days/year)**	**Air**	**Soil**	**Water**	**Remarks**
initial release prior to RMM	300 days per year	0,0025	0	0,00001	

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used.

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

Air	Treat air emission to provide a typical removal efficiency of (%): 99.4
Soil	Not available.

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Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of ≥ (%): 76.9. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of ≥ (%): 0
Sediment	Not available.
Remarks	Prevent discharge of undissolved substance to or recover from onsite wastewater. 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.
Organisational measures to prevent/limit release from site	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/treatment plant (m3/d)

Type	Municipal Sewage Treatment Plant
Discharge rate	2000 m^3/day
Treatment effectiveness	95,5 %
Sludge treatment technique	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Remarks	Maximum allowable site tonnage (MSafe) 4,6e6 kg/d
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	95,5 %

Conditions and measures related to external treatment of waste for disposal

Fraction of used amount transferred to external waste treatment

Suitable waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
Treatment effectiveness	Not available.

Conditions and measures related to external recovery of waste

Fraction of used amount transferred to external waste treatment

Suitable recover operations	External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2.1. Contributing scenario controlling worker exposure for Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Product characteristics

Physical form of the product	Liquid, vapour pressure > 10 kPa at Standard Temperature and Pressure
vapour pressure	Not available.

Amounts used

Covers percentage substance in the product up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours

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Human factors not influenced by risk management

Other given operational conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented.

Other relevant operational conditions

Assumes use at not more than 20°C above ambient temperature.

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	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. Clear spills immediately. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. General exposures (closed systems): Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Storage Store substance within a closed system. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Technical conditions and measures to control dispersion from source towards the worker	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. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves 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. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. Bulk closed unloading . Drum/batch transfers. Refuelling. Refuelling aircraft: Ensure material transfers are under containment or extract ventilation.
Organizational measures to prevent/limit releases, dispersion and exposure	Not available.
Conditions and measures related to personal protection, hygiene and health evaluations	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 any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. General exposures (closed systems). Use as a fuel: Handle substance within a closed system.

3. Exposure Estimation

Environment

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

Health

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

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

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 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.

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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 on-site 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).

5 - Exposure Scenario Worker

1. Use of Low Boiling Point Naphthas (Gasoline) as a fuel – Professional

List of use descriptors

Sector(s) of Use	SU22: Professional uses
Name of contributing environmental scenario and corresponding ERC	ERC9a: Widespread use of functional fluid (indoor) ERC9b: Widespread use of functional fluid (outdoor)
List of names of contributing worker scenarios and corresponding PROCs	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/discharging) at non dedicated-facilities PROC8b: Transfer of substance or mixture (charging/discharging) at dedicated facilities PROC16: Use of fuels

2.1.1. Contributing scenario controlling environmental exposure for Widespread use of functional fluid (indoor)

Product characteristics

Physical state	Substance is complex UVCB. Predominantly hydrophobic
Amounts used	
Fraction of EU tonnage used in region	0,1
Regional use tonnage	1190000 tonnes/year
Fraction of regional tonnage used locally	0,0005
Annual amount per site	590 tonnes/year
Maximum daily site tonnage	1600 kg/day
Frequency and duration of use	
Batch process	Not applicable.
Continuous process	Emission days (days/year): 365
Environment factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100

Other given operational conditions affecting environmental exposure

	Emission days	Emission factors			
Type	**(days/year)**	**Air**	**Soil**	**Water**	**Remarks**
initial release prior to RMM	365 days per year	0,01	0,00001	0,00001	

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Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used.

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

Air	Treat air emission to provide a typical removal efficiency of (%): N/A
Soil	Not available.
Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of ≥ (%): 3.4. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of ≥ (%): 0
Sediment	Not available.
Remarks	Prevent discharge of undissolved substance to or recover from onsite wastewater. 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.
Organisational measures to prevent/limit release from site	Not available.

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/treatment plant (m3/d)

Type	Municipal Sewage Treatment Plant
Discharge rate	2000 m^3/day
Treatment effectiveness	95,5 %
Sludge treatment technique	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Remarks	Maximum allowable site tonnage (MSafe) 1,5e4 kg/d
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	95,5 %

Conditions and measures related to external treatment of waste for disposal

Fraction of used amount transferred to external waste treatment

Suitable waste treatment	Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment.
Treatment effectiveness	Not available.

Conditions and measures related to external recovery of waste

Fraction of used amount transferred to external waste treatment

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

2.2.1. Contributing scenario controlling worker exposure for Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Product characteristics

Physical form of the product	Liquid, vapour pressure > 10 kPa at Standard Temperature and Pressure
vapour pressure	Not available.

Amounts used

Covers percentage substance in the product up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours

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Human factors not influenced by risk management

Other given operational conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented.

Other relevant operational conditions

Assumes use at not more than 20°C above ambient temperature.

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	Equipment maintenance: Drain down system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Clear spills immediately. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Ensure operatives are trained to minimise exposures. Storage: Store substance within a closed system. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Technical conditions and measures to control dispersion from source towards the worker	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. Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves 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. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. Bulk closed unloading . Drum/batch transfers. Refuelling: Ensure material transfers are under containment or extract ventilation.
Organizational measures to prevent/limit releases, dispersion and exposure	Not available.
Conditions and measures related to personal protection, hygiene and health evaluations	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 any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. General exposures (closed systems). Use as a fuel: Handle substance within a closed system.

3. Exposure Estimation

Environment

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

Health

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

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

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 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.

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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 on-site 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).

6 - Exposure Scenario Consumer

1. Use of Low Boiling Point Naphthas (Gasoline) as a fuel – Consumer

List of use descriptors

Sector(s) of Use	SU21: Consumer uses
Name of contributing environmental scenario and corresponding ERC	ERC9a: Widespread use of functional fluid (indoor) ERC9b: Widespread use of functional fluid (outdoor)
List of names of contributing consumer scenarios and corresponding PROCs	PC13: Fuels

2.1.1. Contributing scenario controlling environmental exposure for Widespread use of functional fluid (indoor)

Product characteristics

Physical state	Substance is complex UVCB. Predominantly hydrophobic
Amounts used	
Fraction of EU tonnage used in region	0,1
Regional use tonnage	1,39 e7
Fraction of regional tonnage used locally	0,0005
Annual amount per site	7000 tonnes/year
Maximum daily site tonnage	19000 kg/day
Frequency and duration of use	
Batch process	Not applicable.
Continuous process	Emission days (days/year): 365
Environment factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100

Other given operational conditions affecting environmental exposure

	Emission days	Emission factors			
Type	**(days/year)**	**Air**	**Soil**	**Water**	**Remarks**
initial release prior to RMM	365	0,01	0,00001	0,00001	

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	Not available.

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Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/treatment plant (m3/d)

Type	Domestic Sewage Treatment Plant
Discharge rate	2000 m^3/day
Treatment effectiveness	95,5 %
Sludge treatment technique	Not applicable.
Measures to limit air emissions	Not applicable.
Remarks	Maximum allowable site tonnage (MSafe) 1,8e5 kg/d

Conditions and measures related to external treatment of waste for disposal

Fraction of used amount transferred to external waste treatment

Suitable waste treatment	Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment.
Treatment effectiveness	Not available.

Conditions and measures related to external recovery of waste

Fraction of used amount transferred to external waste treatment

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

2.2.1. Contributing exposure scenario controlling consumer exposure for Fuels

Product characteristics

Physical form of the product	Liquid, vapour pressure > 10 kPa at Standard Temperature and Pressure
vapour pressure	Not available.
Process temperature	Assumes activities are at ambient temperature (unless stated differently).

Amounts used

Liquid: automotive refuelling	<= 37500 g Covers percentage substance in the product up to 1 %.
Liquid: scooter refuelling	<= 3750 g Covers percentage substance in the product up to 1 %.
Liquid: garden equipment - use	<= 750 g Covers percentage substance in the product up to 1 %.
Liquid: garden equipment - refuelling	<= 750 g Covers percentage substance in the product up to 1 %.

Frequency and duration of use

	Duration	Frequency of use	Remarks
Liquid: automotive refuelling	<= 0,05	52 days per year	(Duration unit = hour)
Liquid: scooter refuelling	<= 0,03	52 days per year	(Duration unit = hour)
Liquid: garden equipment - use	<= 2	26 days per year	(Duration unit = hour)
Liquid: garden equipment - refuelling	<= 0,03	26 days per year	(Duration unit = hour)

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Human factors not influenced by risk management

Exposed skin areas

Liquid: automotive refuelling Covers skin contact area up to 210 cm2
Liquid: scooter refuelling Covers skin contact area up to 210 cm2
Liquid: garden equipment - refuelling Covers skin contact area up to 210 cm2
Liquid: garden equipment - use Covers skin contact area up to 420 cm2

Other given operational conditions affecting consumer exposure

Area of use	Room size	Temperature	Ventilation rate	Remarks
Liquid: automotive refuelling	100 m^3			Outdoor use
Liquid: scooter refuelling	100 m^3			Outdoor use
Liquid: garden equipment - use	100 m^3			Outdoor use
Liquid: garden equipment - refuelling	34 m^3			Indoor use

Other relevant operational conditions

Not available.

Risk management measures (RMM)

Conditions and measures related to information and behavioral advice to consumers

Not available.

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

No specific risk management measure identified beyond those operational conditions stated.

3. Exposure Estimation

Environment

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

Health

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

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

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.

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. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

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