Safety Data Sheet

according to Regulation (EC) No 453/2010

GASOLINE

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

1.1 Product identifier	Gasoline CAS No. 86290-81-5
Registration No. under REACH Regulation	01-2119471335-39-0026
Other means of identification	ALTO 101, EFIX GASOLINE, UNLEADED EURO PLUS GASOLINE, UNLEADED EURO SUPER 98 GASOLINE, NATURAL GASOLINE TYPE 92
1.2 Relevant identified uses of the substance or mixture and uses advised against	As Fuel oil for spark ignition engine
1.3 Details of the supplier of the safety data sheet	**ROMPETROL REFINING SA** (A COMPANY OF ROMPETROL GROUP) 215 Navodari Blv, Administrative Pavilion, 905700 Navodari, County of Constanta, Romania Phone No: + (40) 241 506 656 Fax No: + (40) 241 506 933 cristina.iancu@rompetrol.com
1.4 Emergency telephone number:	+ (40)-241-506 158 (between hours 08:00-16:00) + (40)-241-506 040 (between hours 16:00-08:00)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance/mixture

2.1.1 Classification of the substance according to 67/548/EEC Directive	Highly Flammable, F Carcinogenic Category 2, T
Risk phrases	R11: Highly Flammable R45:May cause cancer R46:May cause heritable genetic damage R62:Possible risk of impaired fertility R38:Irritating to skin R65:Harmful; may cause lung damage if swallowed R67:Vapours may cause drowsiness and dizziness
Safety phrases	S23: Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer) S24: Avoid contact with skin S29: Do not empty into drains S36/37: Wear suitable protective clothing and gloves S43: In case of fire, use suitable extinguishing media S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible) S51: Use only in well-ventilated areas S53: Avoid exposure – obtain special instructions before use S61:Avoid release to the environment. Refer to special instructions/ Safety data sheets S62: If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label
Physical/ Chemical hazards	Flammable Liquid: Low boiling point naphthas are liquids of variable flash point / initial boiling points. Typical value for flash point is < 0°C, Initial boiling point <35°C

Human health hazards	Skin irritation-slight to moderate Eye irritation-minimal redness and/or swelling Gasoline can contain benzene, a constituent that is classified as a human carcinogen.
Environment hazards	Acute aquatic toxicity studies with fish, invertebrates and algae on samples of gasoline and low boiling point naphtha streams show acute toxicity values in the range 1-10 mg/l.
2.1.2 Classification of the substance according to CLP Regulation (EC No.1272/2008)	Flammable Liquid Category 2 Carcinogenicity, hazard categories 1B Aspiration hazard, hazard category 1 Note H, P

2.2 Label elements

In accordance with Regulation (EC) No 1272/2008

Hazard pictogram(s) GHS08, GHS02

Signal word(s)

Code(s)

Danger

Hazard statement(s)	H225-Highly flammable liquid and vapour H350- May cause cancer H304- May be fatal if swallowed and enters airways
Precautionary statement(s) Prevention	P201:Obtain special instructions before use. P210:Keep away from heat/sparks/open flames/hot surfaces. – No smoking. P280:Wear protective gloves/protective clothing/eye protection/face protection
Precautionary statement(s) Intervention	P301 + P310: IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician.
Precautionary statement(s) Storage	P403 + P233: Store in a well-ventilated place. Keep container tightly closed
Precautionary statement(s) Disposal	P501:Dispose of contents/container to authorised companies
2.3 Other hazards	Restricted to professional users

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances/Mixtures

Gasoline is placed on the market as a mixture of gasoline, oxygenated compounds like MTBE, ethanol and additives which improve the octane number

A complex combination of hydrocarbons consisting primarily of paraffins, cycloparaffins, aromatic and olefinic hydrocarbons having carbon numbers predominantly C3-C12 and boiling in the range of 30°C to 260°C (86°F to 500°F).The aromatic fraction contains benzene <3%

The commercial gasoline is a mixture which also contains oxygenated compounds Methyl Tertiary-Butyl Ether (MTBE), bio-ethanol, blended and their use is likely the octane numbers
Additives used in gasolines include the following types: anti-knock agents (octane improvers), anti-oxidants, corrosion inhibitors, metal de-activators, combustion chamber scavengers, Inlet system detergents. The specific identity of additives is proprietary information of the supplier.

Substance	Ratio	EC	CAS
Gasoline	<100 %	289-220-8	86290-81-5

Of which:			
Bio-Ethanol	max 5%	200-578-6	64-17-5
MTBE	max 15%	216-653-1	1634-04-4
Light naphtha type A (only for internal market and/or 50 ppm gasoline)	max.3%	265-151-9	64742-49-0

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

4.1.1. First aid instructions provided by relevant routes of exposure

Eye contact: Slight irritation (unspecific).
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. If irritation, blurred vision or swelling occurs and persists, obtain medical advice from a specialist.

Skin contact: Reddening, irritation
Remove contaminated clothing and footwear, and dispose of safely
Wash affected area with soap and water
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
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.

In case of swallowing: Few or no symptoms expected. If any, nausea and diarrhoea might occur
Ingestion (swallowing) of this material may result in an altered state of consciousness and loss of coordination
In case of ingestion, always assume that aspiration has occurred .The casualty should be sent immediately to a hospital. Do not wait for symptoms to develop.
Do not induce vomiting as there is high risk of aspiration.
Do not give anything by mouth to an unconscious person.

In case of inhalation: Inhalation of vapours may cause headache, nausea, vomiting and an altered state of consciousness
If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
If the 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 assistance.
* 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
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.

4.1.2. Advice provided to: See information provided in each section applicable

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

- See information provided in each section applicable

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

- See information provided in each section applicable

SECTION 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media	This substance will float and can be reignited on surface water - Foam (Specifically trained personnel only) - Water fog (Specifically trained personnel only) - Dry chemical powder - Carbon dioxide - Other inert gases (subject to regulations) - Sand or earth
Unsuitable extinguishing media	- Do not use direct water jets on the burning product; they 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

Combustion Products	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. If sulphur compounds are present in appreciable amounts, combustion products may include also H2S and SOx (sulfur oxides) or sulfuric acid.

5.3. Advice for fire-fighters

In case of a large fire or in confined or poorly ventilated spaces wear full fire resistant protective clothing and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel	Stop or contain leak at the source if safe to do so. Avoid direct contact with released material. Stay upwind. In case of large spillages, alert occupants in downwind areas. Keep non-involved personnel away from the area of spillage. 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. Eliminate all ignition sources if safe to do so (e.g. electricity, sparks, fires, flares). (Subject to applicability): In those cases when the presence of dangerous amounts of H2S around the spilled product is suspected or proved, additional or special actions may be warranted, including access restrictions, use of special protection equipment, procedures and personnel training If required, notify relevant authorities according to all applicable regulations.
6.1.2. For emergency responders	- Small spillages: normal antistatic working clothes are usually adequate. Large spillages: full body suit of chemically resistant and antistatic material - Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons. Note: gloves made of PVA are not water-resistant, and are not suitable for emergency use. - Work helmet. Antistatic non-skid safety shoes or boots - Goggles 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 (and when applicable for H2S) 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.

6.2. Environmental precautions

Spillages onto land	Prevent product from entering sewers, rivers, waterways or other bodies of water - If necessary dike the product with dry earth, sand or similar non-combustible materials.

- Large spillages may be cautiously covered with foam, if available, to limit vapour cloud formation. Do not use direct jets
- When inside buildings or confined spaces, ensure adequate ventilation.
- Absorb spilled product with suitable non-combustible materials.
- Collect free product with suitable means. Transfer collected product and other contaminated materials to suitable containers for recovery or safe disposal
- In case of soil contamination, remove contaminated soil and treat in accordance with local regulations.

Spillages on water or at sea

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.
- Collect all waste materials in suitable tanks or containers for recovery or safe disposal.

6.3. Methods and material for containment and cleaning up

6.3.1. Advice on how to contain a spill - See section 6.2

6.3.2. Advice on how to clean-up a spill - See section 6.2

6.3.3. Other information relating to spills and releases

Note: recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave/current direction and speed) may significantly influence the choice of appropriate actions. For this reason, local experts should be consulted when necessary. Local regulations may also prescribe or limit actions to be taken.
- (Subject to applicability): Concentration of H2S in tank headspaces may reach hazardous values, especially in case of prolonged storage. This situation is especially relevant for those operations which involve direct exposure to the vapours in the tank.
- (Subject to applicability): Spillages of limited amounts of products, especially in the open air when vapours will be usually quickly dispersed, are dynamic situations, which are unlikely to entail exposure to dangerous concentrations. As H2S has a density greater than ambient air, a possible exception may regard the build-up of dangerous concentrations in specific spots, like trenches, depressions or confined spaces. In all these circumstances, however, the correct actions should be assessed on a case-by-case basis.

6.4. Reference to other sections - NA

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

7.1.1. Recommendations for safe handling

Take precautionary measures against static electricity. Ground/bond containers, tanks and transfer/receiving equipment. Use explosion-proof electrical/ ventilating/ lighting equipment. Use only non-sparking tools
The vapour is heavier than air. Beware of accumulation in pits and confined spaces.
Use only bottom loading of tankers, in compliance with European legislation.
Do not use compressed air for filling, discharging, or handling operations.
Avoid contact with skin and eyes. Do not ingest. Do not breathe vapours.
Use personal protective equipment as required.
For more information regarding protective equipment and operational conditions see Exposure scenarios.

7.1.2. Advice on general occupational hygiene

Ensure that proper housekeeping measures are in place.
Contaminated materials should not be allowed to accumulate in the workplace and should never be kept inside the pockets.

Keep away from food and beverages.
Do not eat, drink or smoke when using this product.
Wash the hands thoroughly after handling.
Change contaminated clothes at the end of working shift.

7.2. Conditions for safe storage, including any incompatibilities

Storage	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. - Cleaning, inspection and maintenance of the 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 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. - Store separately from oxidizing agents.
Containers advice	If the product is supplied in containers: - Keep only in the original container, or in an approved container for this kind of product. - Keep containers tightly closed and 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. - Empty containers may contain flammable product residues. Do not weld, solder, drill, cut or incinerate empty containers, unless they have been properly cleaned.
Recommended materials for containers	Recommended materials: For containers, or container linings use mild steel, stainless steel
Unrecommended materials for containers	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
7.3 Specific use(s)	As Fuel oil for spark ignition engine

If Applicable – Substance registered as isolated intermediate under SCC) This substance is handled under Strictly Controlled Conditions in accordance with REACH regulation Article 17(3) for on-site isolated intermediates and, in case the substance is transported to other sites for further processing, the substance should be handled at these sites under the Strictly Controlled Conditions as specified in REACH regulation Article 18(4). Site documentation to support safe handling arrangements including the selection of engineering, administrative and personal protective equipment controls in accordance with risk-based management systems is available at each manufacturing site.
(If Applicable) - Written confirmation of application of Strictly Controlled Conditions has been received from every affected Distributor and Downstream Processor/User of the Registrant's intermediate

SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION

8.1. Control parameters

Gasoline
USA, ACGIH TLV-TWA of 890 mg/m3(300 ppm) and a short term exposure limit(1-LV-STEL) of 1480 mg/m3 (500 ppm) over a period of 15 minutes.
In Sweden an 8-hour TLV-TWA of 220 mg/m3(70 ppm) and a STEL of 300 mg/m3(about 100 ppm) have been set

Benzene
Short term exposure/8 h: 3.25 mg/m3 / 1 ppm

MTBE
(US) ACGH TWA 50 ppm
(RO) OEL STEL 300mg/m3
OEL TWA 100 mg/m3

Ethanol
(US) ACGH TWA 1000 ppm
(RO) OEL STEL 5000 ppm/ 9500 mg/m3
(GR) OEL TWA 1000 ppm/1900 mg/m3
(RO) OEL TWA 1000 ppm/1900 mg/m3

8.2. Exposure controls

Handle substance within closed systems. .
Sample via a closed loop or other system intended to avoid exposure.
Wear suitable gloves tested to EN374.

8.2.1 Appropriate engineering controls

Both local exhaust and good general room ventilation must be provided not only to control exposure, but also to prevent formation or flammable mixtures

8.2.2. Individual protection measures, such as personal protective equipment

8.2.2.1. Use of personal protective equipment

Always personnel and adequate protection equipment should be worn.
Selection of appropriate personal protective equipment should be based on an evaluation of performance characteristics, present conditions, duration of use and the hazards /potential hazards that may be encountered during use. Emergency eyes wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use personal good hygiene practices

8.2.2.2. Detailed specifications on protective equipment type

(a) Eye / face protection	Face shields should be worn(according to exposure scenarios no. 9.1.1b and 9.1.1c)
(b) Skin protection	Wear suitable gloves tested to EN374
(i) Hand protection	Wear suitable gloves tested to EN374
(ii) Other	
(c) Respiratory protection	Air supplied breathing apparatus
(d) Thermal hazards	NA
8.2.3 Environmental exposure controls	Good ventilation, standing outside of vapour plumes, exposure monitoring and avoidance of spillages

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

(a) Appearance	clear, colourless liquid	
(b) Odour	Oily (specific odour of petroleum product)	
(c) Odour threshold	No data	
(d) pH	NA	
(e) Melting point/freezing point	NA (not relevant for this category of products)	
(f) Initial boiling point and boiling range	35 ÷ 210 °C	EN ISO 3405
(g) Flash point	<35 °C	EN ISO 2719
(h) Evaporation rate	No data	
(i) Flammability (solid, gas)	not relevant. The product is liquid	
(j) Upper/lower flammability or explosive limits	7,6 % / 1,4 %	
(k) Vapour pressure	summer 45,0 ÷ 60,0 kPa winter 60,0 ÷ 90,0 kPa transition 45,0 ÷ 90,0 kPa	EN 13016-1
(l) Vapour density	No data	
(m) Density at 15 °C	720 – 775 kg/m3	EN ISO 3675 / EN ISO 12185
(n) Solubility(ies) - Water solubility	Low - less then 1mg/l	CONCAVE Documents
(o) Partition coefficient: n-octanol/water	>3 (test is not applicable to petroleum substances but individual constituents have values between 3 and 6)	
(p) Self-ignition temperature	>200 degrees C	CONCAVE Documents
(q) Decomposition temperature	no data	
(r) Viscosity at 40°C	< 7mm2/s	CONCAVE Documents
(s) Explosive properties	the product does not meet the criteria to be classified as explosive - CONCAVE Documents	
(t) Oxidising properties	doesn't act as an oxidising agent	
9.2 Other information	there are not	

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity	Gasoline is a liquid Low boiling point naphthas do not react exothermically Typical value for flash point is < 0°C, Initial boiling point < 35°C
10.2. Chemical stability	Low boiling point naphthas are not self-reactive. They do not undergo exothermic decomposition when heated
10.3. Possibility of hazardous reactions	NA
10.4. Conditions to avoid	oxidising agents, heat, sparks, flames
10.5. Incompatible 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
10.6. Hazardous decomposition products	Gases like : CO, CO2, particulates , SOx

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

11.1.1. Substances

11.1.1.1. Relevant hazard classes	Carcinogen of category 1B Aspiration hazard, hazard category 1
(a) acute toxicity	Samples of gasoline and a number of low boiling point naphtha streams have been tested in acute oral, dermal and inhalation studies. Results indicate the following: Rat oral : LD50 > 5000 mg/kg bodyweight (UBTL Inc., 1986a) Rat inhalation: LC50 > 5.2 mg/l (UBTL Inc., 1992g) Rabbit dermal :LD50 > 2000 mg/kg bodyweight (UBTL Inc., 1986d)
(b) skin corrosion/irritation	Samples of gasoline and a number of low boiling point naphtha streams have been tested in rabbit skin irritation studies. The majority of the data were derived using a 24 hour occluded exposure protocol. The degree of dermal irritation observed was variable, ranging from slight to moderate/severe, normally persisting for up to 14 days. There was no evidence of skin corrosion. Heavier, aromatic materials caused more irritation than lighter, paraffinic streams (API, 1995).
(c) serious eye damage/irritation	The effects of gasoline and low boiling point naphtha streams on the eye have been investigated in rabbits using a number of samples. None of the samples tested showed more than minimal redness and swelling, which resolved quickly (UBTL Inc., 1985a).
(d) respiratory or skin sensitisation	Tests in guinea pigs with gasoline and a number of low boiling point naphtha streams showed no evidence of skin sensitization (UBTL Inc., 1986m). There are no reports available to indicate that gasoline or low boiling point naphthas have the potential to cause respiratory sensitization.
(e) germ cell mutagenicity	The mutagenic potential of gasoline and low boiling point naphthas has been extensively studied in a range of in vivo and in vitro assays. The majority of the studies showed no evidence of mutagenic activity. Gasoline and low boiling point naphthas can contain benzene, a constituent that is classified as a germ cell mutagen (API, 1977; Huntingdon Life Sciences, 2005).
(f) carcinogenicity	The carcinogenic potential of gasoline has been investigated in rats and mice following inhalation exposure for 2 years. In rats, there was an increased incidence of kidney tumours in males and in mice there was an increased incidence of liver tumours in females; further work has shown that these tumours are sex and species specific and are not considered relevant to humans (Short BG et al, 1989). Results of 2 year skin painting studies with gasoline or low boiling point naphthas have shown either no, or weak potential (low incidence and long latent period) for the development of skin tumours. Additional work has shown that where tumours arise they are most likely a result of a non-

	genotoxic response due to dermal irritation (API, 1983b). Gasoline and low boiling point naphthas can contain benzene, a constituent that is classified as a human carcinogen.
(g) reproductive toxicity	Results of guideline developmental toxicity studies on gasolines and OECD developmental toxicity screening studies with low boiling point naphtha streams showed no evidence of developmental toxicity in rats (Roberts et al, 2001). Similarly, studies in rats with gasoline did not show any effect on reproductive performance (McKee et al, 2000). Gasoline and low boiling point naphthas can contain amounts of toluene and/or n-hexane, constituents that are classified as reprotoxicants.
(h) STOT-single exposure	Acute exposure studies show no evidence of systemic toxicity, other than a potential to cause narcosis / CNS depression at higher exposure concentrations (Drinker et al, 1943; Davis et al 1960).
(i) STOT-repeated exposure	The repeat dose toxicity of gasoline and low boiling point naphthas has been studied in rats following dermal and inhalation exposure for periods between 10 days and up to 2 years. The effects of repeated inhalation exposure of primates to gasoline have also been studied. In dermal studies, no systemic toxicity has been seen; the only effect observed was moderate to severe dermal irritation. Repeated inhalation exposure causes 'light hydrocarbon nephropathy' in male rats, an effect which is considered to be both sex and species specific. (Halder CA et al, 1985; API, 2005; UBTL Inc, 1985b)
(j) aspiration hazard	Gasoline and low boiling point naphthas are low viscosity, mobile hydrocarbon liquids with a viscosity at 40°C of < 7 mm^2/s

11.1.2. Mixtures - According to Sections 2 and 11.1

11.1.7. Information on likely routes of exposure - Aspiration hazard

11.1.8. Symptoms related to the physical, chemical and toxicological characteristics
- See sections 2 and 11.1

11.1.9. Delayed and immediate effects as well as chronic effects from short and long-term exposure
- See sections 2 and 11.1

11.1.13. Other information NA

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity	
- acute toxicity	**Acute aquatic toxicity** studies with fish, invertebrates and algae on samples of gasoline and low boiling point naphtha streams show acute toxicity values in the range **1-10 mg/l.** These tests were carried out on water accommodated fractions, and in closed systems to prevent evaporative loss. (Concawe 1995a, 1995h, 1995o, 1996a, PPSC 1995a)
-chronic toxicity	**Chronic aquatic toxicity:** A chronic toxicity study in daphnia with an alkylate naphtha stream gave a NOELR of 2.6 mg/l (Springborn Laboratories 1999d).
12.2. Persistence and degradability	Substance is a hydrocarbon UVCB. Standard tests for biodegradation / bioaccumulation are intended for single substances and are not appropriate for complex substances. Based on compositional information available and measured or predicted data on key constituents, gasoline and gasoline naphthas are not expected to meet the criteria for ready degradability but are inherently biodegradable.
12.3. Bioaccumulative potential	Constituents of gasoline naphthas show measured or predicted values for log $K_{ow} \geq 3$ and are considered potentially bioaccumulative.
12.4. Mobility in soil	NA
12.5. Results of PBT and vPvB assessment	NA
12.6. Other adverse effects	NA

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods	Gasolines are primarily used as fuels and it is seldom necessary to dispose of large quantities. When disposal is necessary, for example, from a spillage or tank cleaning, this should be done by combustion. Contaminated soil may be treatable by land farming.
Contaminated packaging	Highly contaminated materials should be incinerated. Less contaminated materials may be acceptable for authorized land fill sites.

SECTION 14: TRANSPORT INFORMATION

14.1. UN number	UN 1203
14.2. UN proper shipping name	GASOLINE FOR AUTOMOBILE MOTORS
14.3. Transport hazard class(es)	3
14.4. Packing group	II
14.5. Environmental hazards	Yes
14.6. Special precautions for user	
Remarks hazard identification number	33
Labels	3
Tunnel restriction code	D/E – Note: ADR requirement only

Product shall be transported by auto or railway tanks/ships, in good technical condition, **having signalling panels for danger and danger label with RID/ADR/IMDG requirements (see Fig no.1 and 2).**
Vehicles should have execution licenses, approval certificate for product transportation and ADR professional training certificate.

Fig.1

Fig.2

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code - NA

SECTION 15: REGULATORY INFORMATION

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

- Regulation (EC)no. 453/2010
- Regulation Reach no.1907/2006 for registration, evaluation restriction of chemicals and authorisation of substance
- GO 1408/2008 Classification, packaging and labelling of hazardous substances
- Law no.319/2006, The Law of security and work health.
- HG no. 1048/2006 regarding the establishment of minumum security and work health measures for the workers' usage of the induvidual protection equipment at the working spot.
- HG no. 355/2007 regarding the workers health surveillance
- Regulation (EC) 1272/2008 on the classification, labelling and packaging of substances mixtures, which modifies and amends Directives 67/548/EEC and 1999/45/EC

15.2. Chemical safety assessment Has been carried out by CONCAWE -See Annex

SECTION 16: OTHER INFORMATION

16.1. Information which has been added, erased or modified
It was revised the entire SDS according to Regulation (EC) No 453/2010
16.2. List of relevant R phrases, hazard statements, safety phrases and/or precautionary statements
According to 67/548/EEC

R11: Highly Flammable
R45:May cause cancer
R46:May cause heritable genetic damage
R62:Possible risk of impaired fertility
R38:Irritating to skin
R65:Harmful; may cause lung damage if swallowed
R67:Vapours may cause drowsiness and dizziness

According to CLP Regulation- Hazard Statement

H225-Highly flammable liquid and vapour
H350- May cause cancer
H304- May be fatal if swallowed and enters airways

Precautionary statements:

P201: Obtain special instructions before use.
P210: Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P280:Wear protective gloves/protective clothing/eye protection/face protection
P301 + P310: IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician.
P403 + P233: Store in a well-ventilated place. Keep container tightly closed
P501:Dispose of contents/container to authorised companies

16.3. Key literature references and sources for data

- Regulation 453/2010
- REACH Regulation (CE) 1907/2006
- Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances
- Rules for international railway transportation of dangerous goods (RID)
- European Agreement for International road transportation of dangerous goods (ADR)
- International maritime Code for dangerous goods (IMDG)
- European Agreement for International transportation of dangerous goods by inland waterways (ADN).
- International Chemical Safety Cards
- The 89/656/CEE Directive regarding the establishment of minimum security and health measures for the workers' usage of the individual protection equipment at the working spot. (the 3rd specific directive by meaning of the 16th article alin. (1) from Directive 89/391/CEE], published in the Official Journal of the European comunities no. (JOCE) nr. L393/1989
- Low Boiling Point (Gasoline) Naphtas CSR
- Low boiling point naphtha - Concave documents
- Standard Specification

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- ISO 9001:2008
- ISO 14001:2004
- BS OHSAS 18001:2007

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ANNEX

9.1. Manufacture of Low Boiling Point Naphthas (Gasoline) – Industrial

9.1.1a. Exposure Scenario

Section 1 Exposure Scenario Title Low boiling point naphthas (Gasoline) that is *NOT* classified as R45, R46, R62 or R63; (containing less than 0.1% benzene)	
Title	
Manufacture of substances	
Use Descriptor	
Sector(s) of Use	3, 8, 9
Process Categories	1, 2, 3, 4, 8a, 8b, 15 Further information on the mapping and allocation of PROC codes is contained in Table 9.1
Environmental Release Categories	1, 4
Specific Environmental Release Category	ESVOC SpERC 1.1.v1
Processes, tasks, activities covered	
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).	
Assessment Method	
See Section 3.	
Section 2 Operational conditions and risk management measures	
Section 2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Liquid, vapour pressure > 10 kPa at STP OC5.
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) G13.
Amount used	Not applicable
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) G2.
Human factors not influenced by risk management	Not applicable
Other Operational Conditions affecting exposure	Operation is carried out at elevated temperature (> 20°C above ambient temperature). OC7. Assumes a good basic standard of occupational hygiene is implemented G1.
Contributing Scenarios	**Specific Risk Management Measures and Operating Conditions**
General Measures (skin irritants). G19.	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. Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop. E3
CS15 General exposures (closed systems).	No other specific measures identified. EI20.
CS15 General exposures (closed systems) + CS56 With sample collection.	No other specific measures identified. EI20.
CS16 General exposures (open systems).	Provide extract ventilation to points where emissions occur. E54.
CS29 Mixing operations (closed systems).	No other specific measures identified. EI20.
CS2 Process sampling	No other specific measures identified. EI20.

CS36 Laboratory activities	Handle in a fume cupboard or under extract ventilation. E83.
CS14 Bulk transfers	No other specific measures identified. EI20.
CS8 Drum/batch transfers	No other specific measures identified. EI20.
CS5 Equipment maintenance	No other specific measures identified. EI20.
CS67 Storage.	No other specific measures identified. EI20.
Additional information on the basis for the allocation of the identified OCs and RMMs is contained in Appendices 1 to 3	
Section 2.2 Control of environmental exposure	
Product characteristics	
Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].	
Amounts used	
Fraction of EU tonnage used in region	0.1
Regional use tonnage (tonnes/year)	1.87E7
Fraction of Regional tonnage used locally	0.032
Annual site tonnage (tonnes/year)	6.0e5
Maximum daily site tonnage (kg/day)	2.0e6
Frequency and duration of use	
Continuous release [FD2].	
Emission days (days/year)	300
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	
Release fraction to air from process (initial release prior to RMM)	0.05
Release fraction to wastewater from process (initial release prior to RMM)	0.003
Release fraction to soil from process (initial release prior to RMM)	0.0001
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used [TCS1].	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Prevent discharge of undissolved substance to or recover from wastewater [TCR14]. Risk from environmental exposure is driven by humans via indirect exposure (primarily inhalation) [TCR1k]. Onsite wastewater treatment required [TCR13].	
Treat air emission to provide a typical removal efficiency of (%)	99.0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency ≥ (%)	95.2
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of ≥ (%)	80.4
Organisation measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].	
Conditions and measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	95.5
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	99.1
Maximum allowable site tonnage (M_{Safe}) (kg/d)	2.0e6
Assumed domestic sewage treatment plant flow (m^3/d)	10000
Conditions and measures related to external treatment of waste for disposal	
During manufacturing no waste of the substance is generated [ETW4].	

Conditions and measures related to external recovery of waste
During manufacturing no waste of the substance is generated [ERW2].
Additional information on the basis for the allocation of the indentified OCs and RMMs is contained in Petrorisk file
Section 3 Exposure Estimation
3.1. Health
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. G21.
3.2. Environment
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].
Section 4 Guidance to check compliance with 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. G22. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. G32. Available hazard data do not support the need for a DNEL to be established for other health effects. G36. Risk Management Measures are based on qualitative risk characterisation. G37.
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 [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4]. Scaled local assessments for EU refineries have been performed using site-specific data and are attached in PETRORISK file in IUCLID section 13 – "Site-Specific Production" worksheet [DSU6]. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific safety assessment is required [DSU8]. Measured data have been used to demonstrate that the PETRORISK predicted fence-line concentrations in air are overestimated. These data support the conclusion that no refineries have RCRs>1 (Appendix 4 and PETRORISK file in IUCLID section 13 – "Site-Specific Production & Tier II worksheets")

9.1.1b. Exposure Scenario

Section 1 Exposure Scenario Title Low boiling point naphthas (Gasoline) that is classified as R45 and/or R46 and/or R62 and/or R63; (containing 0% to 1% benzene)	
Title	
Manufacture of substances	
Use Descriptor	
Sector(s) of Use	3, 8, 9
Process Categories	1, 2, 3, 8a, 8b, 15 Further information on the mapping and allocation of PROC codes is contained in Table 9.1
Environmental Release Categories	1, 4
Specific Environmental Release Category	ESVOC SpERC 1.1.v1
Processes, tasks, activities covered	
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).	
Assessment Method	
See Section 3.	
Section 2 Operational conditions and risk management measures	

Section 2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Liquid, vapour pressure > 10 kPa at STP OC5
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) G13
Amount used	Not applicable
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) G2
Human factors not influenced by risk management	Not applicable
Other Operational Conditions affecting exposure	Operation is carried out at elevated temperature (> 20°C above ambient temperature). OC7. Assumes a good basic standard of occupational hygiene is implemented G1.
Contributing Scenarios	**Specific Risk Management Measures and Operating Conditions**
General Measures (skin irritants). G19.	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. Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop. E3
General Measures (carcinogens). G18.	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 staff; provide specific activity training to operators to minimise exposures; 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. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. G20.
CS15 General exposures (closed systems). + CS56 With sample collection.	Handle substance within closed systems. E47. Sample via a closed loop or other system intended to avoid exposure. E8. Wear suitable gloves tested to EN374. PPE15.
CS15 General exposures (closed systems). + CS54 Continuous process.	Handle substance within a closed system. E47.
CS15 General exposures (closed systems). + CS55 Batch process.	Handle substance within a closed system. E47. Ensure operation is undertaken outdoors. E69.
CS36 Laboratory activities	Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure. E12.
CS14 Bulk transfers	Ensure material transfers are under containment or extract ventilation. E66.
CS39 Equipment cleaning and maintenance	Drain down and flush system prior to equipment break-in or maintenance. E55. Retain drain downs in sealed storage pending disposal or for subsequent recycle. ENVT4. Clear spills immediately. C&H13. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. PPE16.

CS67 Storage.	Ensure operation is undertaken outdoors. E69. Store substance within a closed system. E84.
Additional information on the basis for the allocation of the identified OCs and RMMs is contained in Appendices 1 to 3	
Section 2.2 Control of environmental exposure	
Product characteristics	
Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].	
Amounts used	
Fraction of EU tonnage used in region	0.1
Regional use tonnage (tonnes/year)	1.87E7
Fraction of Regional tonnage used locally	0.03
Annual site tonnage (tonnes/year)	6.0e5
Maximum daily site tonnage (kg/day)	2.0e6
Frequency and duration of use	
Continuous release [FD2].	
Emission days (days/year)	300
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	
Release fraction to air from process (initial release prior to RMM)	0.05
Release fraction to wastewater from process (initial release prior to RMM)	0.003
Release fraction to soil from process (initial release prior to RMM)	0.0001
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used [TCS1].	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Prevent discharge of undissolved substance to or recover from wastewater [TCR14]. Risk from environmental exposure is driven by humans via indirect exposure (primarily inhalation) [TCR1k]. Onsite wastewater treatment required [TCR13].	
Treat air emission to provide a typical removal efficiency of (%)	99.0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency ≥ (%)	95.2
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of ≥ (%)	80.4
Organisation measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].	
Conditions and measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	95.5
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	99.1
Maximum allowable site tonnage (M_{Safe})	2.0e6
Assumed domestic sewage treatment plant flow (m^3/d)	10000
Conditions and measures related to external treatment of waste for disposal	
During manufacturing no waste of the substance is generated [ETW4].	
Conditions and measures related to external recovery of waste	
During manufacturing no waste of the substance is generated [ERW2].	
Additional information on the basis for the allocation of the indentified OCs and RMMs is contained in Petrorisk file	

Section 3 Exposure Estimation
3.1. Health
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. G21.
3.2. Environment
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].
Section 4 Guidance to check compliance with 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. G22. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. G32. Available hazard data do not support the need for a DNEL to be established for other health effects. G36. Risk Management Measures are based on qualitative risk characterisation. G37.
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 [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4]. Scaled local assessments for EU refineries have been performed using site-specific data and are attached in PETRORISK file in IUCLID section 13 – "Site-Specific Production" worksheet [DSU6]. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required [DSU8]. Measured data have been used to demonstrate that the PETRORISK predicted fence-line concentrations in air are overestimated. These data support the conclusion that no refineries have RCRs>1 (Appendix 4 and PETRORISK file in IUCLID section 13 – "Tier II worksheet").

9.1.1c. Exposure Scenario

Section 1 Exposure Scenario Title Low boiling point naphthas (Gasoline) that is classified as R45 and/or R46 and/or R62 and/or R63; (containing equal to or greater than 1% to 5% benzene)	
Title	
Manufacture of substances	
Use Descriptor	
Sector(s) of Use	3, 8, 9
Process Categories	1, 2, 3, 8a, 8b, 15 Further information on the mapping and allocation of PROC codes is contained in Table 9.1
Environmental Release Categories	1, 4
Specific Environmental Release Category	ESVOC SpERC 1.1.v1
Processes, tasks, activities covered	
Manufacture of the substance 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).	
Assessment Method	
See Section 3.	
Section 2 Operational conditions and risk management measures	
Section 2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Liquid, vapour pressure > 10 kPa at STP OC5
Concentration of substance	Covers percentage substance in the product up to 100 % (unless stated

in product	differently) G13
Amount used	Not applicable
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) G2
Human factors not influenced by risk management	Not applicable
Other Operational Conditions affecting exposure	Operation is carried out at elevated temperature (> 20°C above ambient temperature). OC7. Assumes a good basic standard of occupational hygiene is implemented G1.
Contributing Scenarios	**Specific Risk Management Measures and Operating Conditions**
General Measures (skin irritants). G19.	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. Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop. E3
General Measures (carcinogens). G18.	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 staff; provide specific activity training to operators to minimise exposures; 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. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. G20.
CS15 General exposures (closed systems). + CS56 With sample collection.	Handle substance within closed systems. E47. Sample via a closed loop or other system intended to avoid exposure. E8. Wear suitable gloves tested to EN374. PPE15.
CS15 General exposures (closed systems).	Provide extract ventilation to points where emissions occur. E54. Handle substance within closed systems. E47.
CS36 Laboratory activities	Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure. E12.
CS14 Bulk transfers	Ensure material transfers are under containment or extract ventilation. E66.
CS39 Equipment cleaning and maintenance	Drain down and flush system prior to equipment break-in or maintenance. E55. Retain drain downs in sealed storage pending disposal or for subsequent recycle. ENVT4. Clear spills immediately. C&H13. Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls. PPE18.
CS67 Storage.	Store substance within a closed system. E84. Wear suitable gloves tested to EN374. PPE15.
Additional information on the basis for the allocation of the identified OCs and RMMs is contained in Appendices 1 to 3	
Section 2.2 Control of environmental exposure	
Product characteristics	
Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].	
Amounts used	

Fraction of EU tonnage used in region	0.1
Regional use tonnage (tonnes/year)	1.87E7
Fraction of Regional tonnage used locally	0.03
Annual site tonnage (tonnes/year)	6.0e5
Maximum daily site tonnage (kg/day)	2.0e6
Frequency and duration of use	
Continuous release [FD2].	
Emission days (days/year)	300
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	
Release fraction to air from process (initial release prior to RMM)	0.05
Release fraction to wastewater from process (initial release prior to RMM)	0.003
Release fraction to soil from process (initial release prior to RMM)	0.0001
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used [TCS1].	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Prevent discharge of undissolved substance to or recover from wastewater [TCR14]. Risk from environmental exposure is driven by humans via indirect exposure (primarily inhalation) [TCR1k] Onsite wastewater treatment required [TCR13].	
Treat air emission to provide a typical removal efficiency of (%)	99.0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency ≥ (%)	95.2
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of ≥ (%)	80.4
Organisation measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].	
Conditions and measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	95.5
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	99.1
Maximum allowable site tonnage (M_{Safe}) (kg/d)	2.0e6
Assumed domestic sewage treatment plant flow (m^3/d)	10000
Conditions and measures related to external treatment of waste for disposal	
During manufacturing no waste of the substance is generated [ETW4].	
Conditions and measures related to external recovery of waste	
During manufacturing no waste of the substance is generated [ERW2].	
Additional information on the basis for the allocation of the indentified OCs and RMMs is contained in Petrorisk file	
Section 3 Exposure Estimation	
3.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. G21.	
3.2. Environment	
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].	
Section 4 Guidance to check compliance with 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. G22. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. G32. Available hazard data do not support the need for a DNEL to be established for other health effects. G36. Risk Management Measures are based on qualitative risk characterisation. G37.
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 [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html) [DSU4]. Scaled local assessments for EU refineries have been performed using site-specific data and are attached in PETRORISK file in IUCLID section 13 – "Site-Specific Production" worksheet [DSU6]. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required [DSU8]. Measured data have been used to demonstrate that the PETRORISK predicted fence-line concentrations in air are overestimated. These data support the conclusion that no refineries have RCRs>1 (Appendix 4 and PETRORISK file in IUCLID section 13 – "Tier II worksheet").