

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

1.1 Product identifier

Substance/mixture name	Gasoil (petroleum), straight-run flux ATZ
Synonyms	GSR lgt
CAS Number	64741-43-1
EC Number	265-043-1
Index number	Not available
Registration Number	01-2119488519-20-0030

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

Relevant identified uses: heating fuel and other industrial uses

Uses identified in the chemical safety report: generic list of applications:

Manufacture: Formulation: Use at industrial sites: Generalized use by professional operators:	Production of the substance Formulation and (re)packaging of substances and mixtures Use as an intermediate, use in drilling and production of wells for the extraction of oil and natural gas, use in fuels Use in fuels.
Consumer Use:	Use in Fuels
Uses advised against:	Professional uses or the consumption of SRGO (straight run gas oils) substances (in coatings, detergents, lubricants, metalworking fluids, binding and release agents, explosives, functional fluids, road and construction applications and other consumer uses are not recommended. Although these uses were previously supported, in 2011 ECHA's Committee for Risk Assessment (RAC) issued an opinion stating that certain petroleum substances in the Naphtha and Kerosine categories had a risk of chronic toxicity to the central nervous system. The opinion proposes stricter exposure limits that are incompatible with the chemical safety assessments carried out for these uses of SRGO substances. As SRGO substances have similarities with the substances.
Reasons why uses advised against:	Uses other than those identified as relevant are not recommended unless an assessment has been carried out prior to the start of such use indicating that the risks associated with such use are safe.

See the Annex for the full list of uses for which an exposure scenario is envisaged.



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

1.3 Details of the supplier of the safety data sheet

Company name	ALMA PETROLI S.p.A.
Address	Via di Roma 67 - Via Baiona 195
City / Country	Ravenna - Italy
Phone0	039054434317-00390544696411
Competent technician E-mail	info@almapetroli.com

1.4 Emergency telephone number

For Appropriate National Emergency Information Services see the following link:

https://echa.europa.eu/support/helpdesks

Alma Petroli - Sciascia Antonino (Employer) - Mob. 3461305790 (24 hours)

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Flamm Liq. 3;	H226
Asp. Tox. 1;	H304
Acute tox. 4;	H332
STOT RE 2;	H373 (liver, spleen and bone marrow)
Aquatic Chronic 2;	H411

The list of hazard statements H is given in Section 16.

Note: The classification has been assigned taking into account the following SRGO characteristics: Viscosity \leq 20.5 mm²/s at 40 °C; Flash point \geq 23 °C and \leq 75 °C.

2.2 Label elements



Warning: DANGER

Hazard statements:

- H226: Flammable liquid and vapour
- H304: May be fatal if swallowed and enters airways
- H332: Harmful if inhaled
- H373: May cause damage to organs through prolonged or repeated exposure



ON BEHALF OF: ALMA PETROLI S.p.A.

H411: EUH066:	Toxic to aquatic life with long lasting effects Repeated exposure may cause skin dryness or cracking
Precautiona Prevention P210: P261: P273: P280:	ry statements: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid release to the environment. Wear protective gloves/ protective clothing/eye protection/face protection.
Reaction P301+310: P332+313: P331:	IF SWALLOWED: Immediately call a POISON CENTER/doctor If skin irritation occurs: Get medical advice/attention. Do NOT induce vomiting.
Disposal P501:	Dispose of contents/container in accordance with the local regulations.
Other inform Authorizatio	

2.3 Other hazards

The heated product emits vapors that can form flammable and explosive mixtures with air. Vapors are heavier than air: they can accumulate in confined spaces or in depressions, propagate at ground level and can create risks of fire and explosion even at a distance. There is a risk of thermal burns in case of direct contact with the skin or eyes when the product is handled at high temperature. A potential risk may be the development of hydrogen sulfide (toxic gas) when the product is stored or handled at high temperatures. If present, hydrogen sulfide can accumulate in tanks or confined places, with hazard to operators who need to access it. In this case overexposure can cause irritation of the respiratory tract, dizziness, nausea, loss of consciousness and death.

The product does not meet the PBT or vPvB classification criteria set out in Annex XIII to REACH.

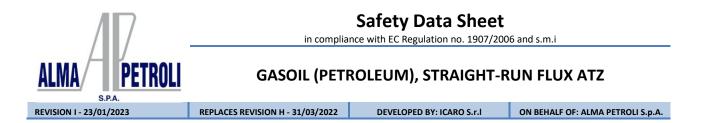
The substance is not included in the list established in accordance with Article 59(of REACH for the possession of endocrine disrupting properties, or is not identified as having endocrine disrupting properties according to the criteria established by Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 **Substances**

The substance is a complex combination of hydrocarbons produced by distillation of crude oil. It consists of hydrocarbons with carbon numbers predominantly in the range C11-C25 and boiling point of about 205 °C - 400 °C.

Denomination	EC	CAS	Index number	Registration number
Gas oils (petroleum), straight-run	265-043-1	64741-43-1	-	01-2119488519-20-0030



SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

Before any	
intervention:	Spills make the surface slippery. Before attempting to save the victims, isolate the area from all potential sources of ignition, including disconnecting the power supply. Ensure adequate ventilation and ensure that there is a safe and breathable atmosphere before entering confined spaces. Hydrogen sulfide (H ₂ S) can accumulate in the headspace of storage tanks and reach potentially dangerous concentrations.
Eye contact:	Irrigate the eyes with 0.9% saline, if available, or water for at least 15 minutes. Remove the contact lenses, if the situation allows you to carry out the operation with ease. In case of irritation, blurred vision or persistent swelling, consult a specialist doctor.
Skin contact:	Remove contaminated footwear and clothing and dispose of them safely. Wash the affected part with soap and water for 10-15 minutes. See a doctor immediately in case irritation, swelling or redness develops and persists.
	For minor thermal burns cool the injured part. Keep the burned part under cold running water for at least five minutes, or until the pain disappears. Avoid general hypothermia. See section 2.3.
	When using high-pressure equipment, a product injection may occur. In case of injuries caused by high pressure, immediately consult a doctor. Do not wait for the onset of symptoms.
Ingestion/aspiration:	Do not cause vomiting to avoid the risk of aspiration. Do not give anything by mouth to a person in a state of unconsciousness. In case of spontaneous vomiting, keep your head down to avoid the risk of aspiration of vomiting into the lungs.
Inhalation:	Inhalation of vapors at room temperature is unlikely due to the low vapour pressure of the product. Exposure to vapours can, however, occur when the product is handled at high temperatures under conditions of poor ventilation. In case of symptoms of inhalation of fumes, mists or vapors, if safety conditions allow, transfer the injured person to a quiet and well-ventilated place.
	If the injured person is unconscious and does not breathe, check for the absence of obstacles to breathing and practice artificial respiration by specialized personnel. If necessary, carry out an external cardiac massage and consult a doctor.
	If the injured person breathes, keep him in a safe lateral position. Administer oxygen if necessary. If there is any suspicion of inhalation of H_2S (hydrogen sulphide) rescuers must wear breathing apparatus, belt and safety rope, and follow rescue procedures. Send patient to hospital. Immediately begin artificial respiration if breathing has ceased. Always assume that aspiration has occurred.

4.2 Most important symptoms and effects, both acute and delayed

Due to the low viscosity the product can be sucked into the lungs or directly following ingestion or subsequently in case of spontaneous or provoked vomiting, in this case chemical pneumonia may arise. May cause damage to organs through prolonged or repeated exposure. It can cause skin irritation, slight eye irritation, irritation of the respiratory tract caused by excessive exposure to fumes, mists or vapors. In case of ingestion: few or no expected symptoms. Possibly, nausea and diarrhea may occur. Inhalation can cause headaches, nausea, dizziness. Acute exposure to high doses can cause: depression of the central nervous system, confusion, altered mental state, convulsions, cardiac arrhythmias.



4.3 Indication of any immediate medical attention and special treatment needed

In case of ingestion, always assume that aspiration has occurred. Immediately transfer the injured person to the hospital. Do not wait for the onset of symptoms.



SECTION 5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Small fires: earth or sand, carbon dioxide, foam, dry chemical powder. Large fires: foam, water spray. Note: The use of fractional jet water (spray water) is reserved for specially trained personnel. Other inert gases (as permitted by law).

Unsuitable extinguishing media: Do not use direct water jets on the burning product, they can cause splashes and spread the fire. Avoid using foam and water simultaneously on the same surface as water destroys the foam.

5.2 Special hazards arising from the substance or mixture

Incomplete combustion could generate a complex mixture of airborne solid and liquid particles and gases, including carbon monoxide, H₂S (hydrogen sulfide), SOx (sulfur oxides), H₂S (hydrogen sulphide), H₂SO₄ (sulfuric acid), and other unidentified organic and inorganic compounds.

5.3 Advice for firefighters

In the event of a large fire or in confined or poorly ventilated spaces, wear a garment complete with fireproof protection and a stand-alone respirator equipped with a complete mask working under positive pressure.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

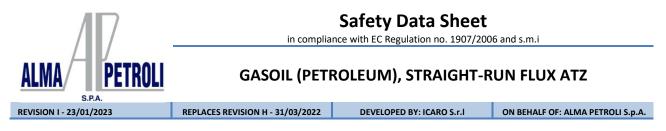
If safety conditions permit, stop or contain the leak at source. Avoid direct contact with the released material. Stay windward. In the event of large spills, warn residents of leeward areas. Remove uninvolved personnel from the spill area. Warn emergency teams. Except in the case of small payments, the feasibility of the interventions must always be evaluated and approved, if possible, by qualified and competent personnel in charge of managing the emergency. Eliminate all sources of ignition if safety conditions allow (e.g. electricity, sparks, fires, torches). In those cases when the presence of dangerous amounts of H₂S in the leaked/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).

6.1.2 For emergency personnel

Small spills: Traditional antistatic work clothes are generally appropriate.

Large spills: total protection garment resistant to chemical agents and made of antistatic material. Work gloves that provide adequate resistance to chemical agents, in particular aromatic hydrocarbons. Gloves made of PVA (Polyvinyl alcohol) are not water resistant and are not suitable for emergency use. Protective helmet. Antistatic and non-slip safety shoes or boots. Resistant to chemical agents. Goggles or face protection equipment if splashes or contact with eyes are possible or foreseeable. Respiratory protection: A half-mask or a whole mask equipped with an organic vapour filter(s) (and H₂S where applicable) or a stand-alone respirator may be used depending on the extent of the spillage and the foreseeable level of exposure. If the situation cannot be fully assessed or if there is a risk of oxygen starvation, use only an autonomous respirator.

The concentration of H₂S in the headspaces of the tank can reach dangerous values, especially in case of prolonged storage. This situation is especially relevant for those operations that involve direct exposure to vapors in the tank. (Subject to applicability): Spills of limited quantities of products, especially in the open air when the vapours usually disperse rapidly, are dynamic situations, which would hardly lead to exposure to dangerous concentrations. Since H2S



has a higher density than ambient air, a possible exception may be the accumulation of dangerous concentrations at specific points, such as trenches, depressions or confined spaces. In all these circumstances, however, correct actions should be assessed on a case-by-case basis.

6.2 Environmental precautions

Prevent the product from ending up in sewers, rivers or other bodies of water.

6.3 Methods and material for containment and cleaning up

Spreading on the ground: If necessary, stem the product with dry earth, sand or other non-flammable material. Large spills can be carefully covered with foam, if available, in order to prevent fire hazards. Do not use direct jets. Inside buildings or confined spaces, ensure appropriate ventilation. Absorb the poured product with non-flammable materials. If it is necessary to store contaminated material for subsequent safe disposal, use only suitable containers (watertight, sealed, waterproof, grounded). In case of soil contamination, remove contaminated soil and treat in accordance with local legislation.

Spills in water: In case of small spills in closed waters (e.g., in ports) contain the product using floating barriers or other devices. Collect the poured product with specific floating absorbent materials. Large spills: if possible, contain major spills into the water using floating barriers or other mechanical means. The use of dispersing agents must be proposed by an expert and, if requested, authorized by the competent local authorities. If possible, collect the contaminated product and material by mechanical means and proceed with storage/disposal in accordance with the relevant legislation.

The recommended measures are based on the most likely spill scenarios for this product. Local conditions (wind, air temperature, direction and speed of waves and currents) can, however, significantly influence the choice of action to be taken. Consult, therefore, local experts if necessary.

6.4 Reference to other sections

For more information about personal protective equipment, please refer to the section "Exposure control and personal protection".

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Ensure that all provisions regarding the management and storage facilities for flammable products are properly complied with.

A specific assessment of the risks of inhalation from the presence of H₂S in tank headspaces, confined spaces, product residues, waste and tank discharge water and inadvertent releases should be carried out to help determine controls appropriate to local circumstances.

Take precautionary measures against static electricity. Ensure the grounding of the container, tanks and equipment for reception and transfer. Steam is heavier than air. Pay special attention to accumulation in wells and confined spaces. Keep away from heat sources/sparks/open flames/hot surfaces. No smoking. Avoid contact with skin and eyes. Do not swallow. Do not breathe in the vapors.

Product may release Hydrogen Sulphide: a specific assessment of inhalation risks from the presence of hydrogen sulphide in tank headspaces, confined spaces, product residue, tank waste and waste water, and unintentional releases should be made to help determine controls appropriate to local circumstances



Use and store exclusively outside or in a well-ventilated place. Avoid contact with the product. Use appropriate personal protective equipment if necessary. Do not use compressed air during filling, unloading or handling operations. Prevent the risk of slipping. Do not release into the environment.

Make sure that adequate cleaning measures are taken (housekeeping). Contaminated material must not accumulate in the workplace and should never be stored in your pocket. Keep away from food and drink. Avoid contact with skin. Do not eat, drink or smoke while using the product. Wash your hands thoroughly after handling. Do not reuse contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities.

The structure of the storage area, the characteristics of the tanks, the equipment and the operating procedures must comply with the relevant legislation at European, national, or local level. Storage facilities must be equipped with appropriate systems to prevent contamination of soil and water in the event of leaks or spills. The activities of cleaning, inspection, and maintenance of the internal structure of the storage tanks must be carried out by qualified and properly equipped personnel, as established by national, local, or company regulations, after reclamation of the tank. Before accessing the storage, tanks and starting any type of intervention in a confined space, check the atmosphere and check the oxygen content, H₂S (Hydrogen sulphide), and the degree of flammability. Store separately from oxidizing agents. Store in a well-ventilated place.

Recommended materials: mild steel or stainless steel for containers and coatings. Some synthetic materials may not be suitable for containers or coatings based on the characteristics of the material and the intended uses. Check the compatibility of the materials with the manufacturer in relation to the conditions of use.

If the product is supplied in containers, store only in the original containers or in a container suitable for the type of product.

Store containers carefully closed and properly labeled. Protect from sunlight.

Light hydrocarbon vapors can accumulate at the top of the containers. This can cause danger of fire or explosion. Empty containers may contain combustible product residues. Do not weld, braze, drill, cut or incinerate empty containers unless they have been properly reclaimed.

7.3 Specific end use(s)

See the attached exposure scenarios.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure limit values (ACGIH 2023): *Diesel fuel:* TLV-TWA®: 100 mg/m³ Hydrogen sulphide

ACGIH 2023

TLV[®]-TWA: 1 ppm (1,4 mg/m³)

TLV®-STEL: 5 ppm (7 mg/m3)

Dir 98/24/EC and further amendments

Hydrogen sulphide



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

8 hours: 7 mg/m³; 5 ppm

Short term: (4 hours): 14 mg/m³; 10 ppm

Monitoring procedures: refer to good industrial hygiene practices.

DNEL (Derived No Effect Level)

	DNEL for workes			DNEL for the general population				
Route	Systemic effects Long term	Systemic effects Acute	Local effects Long term	Local effects Acute	Systemic effects Long term	Systemic effects Acute	Local effects Long term	Local effects Acute
Oral	n.a.	n.a.	n.a.	n.a.	1.25 mg/kg/day Most sensitve end point: Repeated dose toxcity (dermal)	No hazard identified	n.a.	n.a.
Dermal	2.91 mg/kg/d sensitve end point: Repeated dose toxcity (dermal)	No hazard identified	No hazard identified	No hazard identified	1.25 mg/kg Most sensitve end point: Repeated dose toxcity	No hazard identified	No hazard identified	No hazard identified
Inhalation	16.4 mg/m ³ Most sensitve end point: Developmental toxicity / teratogenicity (Dermal)	1500.8 mg/m ³ Most sensitve end point: Acute toxicity (Inhalation)	No hazard identified	No hazard identified	4.85 mg /m ³ Most sensitve end point: Developmental toxicity / teratogenicity (Dermal)	900.48 mg /m ³ Most sensitve end point: Acute toxcity	No hazard identified	No hazard identified
Eyes	n.a.	n.a.	n.a.	No hazard identified	n.a.	n.a.		No hazard identified

PNEC(S) (No Effect Expected Concentration)

PNEC(S) Water, sediment, soil	
-	The substance is a UVCB hydrocarbon with chronic danger to the aquatic environment. The "hydrocarbon block" method is used for environmental risk assessment (REACh R7 Guide paragraph 13- PNECs cannot be derived for UVCB substances for which aquatic PNECs for "hydrocarbon blocks" (i.e. a library of about 1500 representative hydrocarbons and grouped according to physical and chemical properties, breakdown and degradation properties), were derived using the statistical extrapolation method HC5 and the target Lipid Model (TLM). Following specific requests from ECHA, a revision of the TLM model was carried out which led to new results used in the CSR 2016 edition. For details refer to the annex to section 13 of IUCLID. PETRORISK Product Library tab, PAH Phototoxicity, PNEC HC5, TLM Validation, PETROTOX Verification and NOS Heterocyclics.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Minimize exposure to mists/vapours/aerosols. Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content , hydrogen sulphide, and flammability



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

8.2.2 Individual protection measures, such as personal protective equipment

a) Eye/face protection:

In the absence of containment systems and in the event of a risk of contact with eyes/faces, wear head and face protection (visor and/or goggles (EN 166).

b) Skin protection:

(i) Hand protection

In the absence of containment systems and in case of possibility of contact with the skin, use gloves with high cuffs resistant to hydrocarbons, internally plush and thermally insulated if necessary. Materials presumably suitable: nitrile, PVC or PVA (polyvinyl alcohol) with a chemical protection index of at least 5 (permeation time > of 240 minutes). Use gloves in accordance with the conditions and limits set by the manufacturer. In the case, refer to the UNI EN 374 standard. Gloves must be periodically inspected and replaced in case of wear, perforation or contamination.

(ii) Other

In case of counting of clothing, replace and clean them immediately.

c) Respiratory protection:

In open/ventilated spaces:

wear approved respiratory protection devices: full face masks equipped with type A filter cartridge (for organic vapors) (UNI EN14387: 2021)

In the absence of containment systems

- in case of suspected presence of hydrogen sulphide, wear full masks equipped with a type B filter/cartridge (grey for inorganic vapors, H₂S included) (UNI EN14387: 2021)
- If exposure levels cannot be determined or estimated with adequate confidence, or an oxygen deficiency is possible, only SCBA's should be used (UNI EN 11719: 2018)

d) Thermal hazards: see point (b) above.



8.2.3 Environmental exposure controls

Do not release into the environment. Storage facilities must be equipped with appropriate systems to prevent contamination of soil and water in the event of leaks or spills. Prevent the release of undissolved substances or recover them from wastewater. For more details see the attached exposure scenarios.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

(a)physical state	Liquid
b)color	blackish
c)odour	Oil
(d) melting point/freezing point	-21 to +6 °C (ASTM 1999 CONCAWE 2010a)
(e) boiling point or boiling starting point and boiling range	165 °C
	165 °C - >375 °C (test report GE10-01296.00)
(f) flammability	Flammable liquid
(g) lower and upper explosive limit	LEL 1% - UEL 6%





S.P.A.					
VISION I - 23/01/2023	REPLACES REVISION H - 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON BEHALF OF: ALMA PETROLI S.p.A.		
(h) flash point		69 °C (Pensky Martens- ISO 2719; test report 15PR0397			
(i) auto-ignition temperature	2	≥240 °C (CONCAWE 2010a)			
(j) decomposition temperatu	ire	Data not available			
(k) pH		Data not available	Data not available		
(I) kinematic viscosity		3.212 mm ² /s at 40 °C (ASTM D445; test report GE10-			
		01296.00)			
(m) solubility		2.69E-12 – 2000 mg/l (calculated range-QSAR)			
(n) partition coefficient n-octanol/water (logarithmic value):		1.99-18.2 (calculated range-QSAR)			
(o) vapour pressure		0.4 kPa at 40 °C (ASTM199)			
(p) density and/or relative density		895 kg/m ³ at 15 °C (ASTM D1298; test report GE10-			
		01296.00)			
(q) relative vapour density		Data not available			
(r) particle characteristics		Not applicable			



9.2 Other information

9.2.1. Information with regard to physical hazard classes

The product is flammable. Nessun chemical group associated with molecules contained with explosive properties (Ref. column 2 of REACH of Annex VII). Non-oxidant (based on the chemical structure, the substance is not able to react exothermically with combustible materials. Ref. column 2 of REACH of Annex VII).

9.2.2. Other safety characteristics

The product does not possess dangerous properties that require mention.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity

The substance has no additional reactivity hazards than those listed in the following subtitles.

10.2 Chemical stability

This substance is stable in relation to its intrinsic properties.

10.3 Possibility of hazardous reactions

Contact with strong oxidants (such as peroxides and chromates) can cause a fire hazard. A mixture with nitrates or other strong oxidants (such as chlorates, perchlorates and liquid oxygen) can generate an explosive mass. Sensitivity to heat, friction and shock cannot be assessed in advance.

10.4 Conditions to avoid

Store separately from oxidizing agents. Keep away from heat sources/sparks/open flames/hot surfaces. No smoking. Avoid the formation of electrostatic charges.

10.5 Incompatible materials

Strong oxidants.

10.6 Hazardous decomposition products

The product does not decompose when used for its intended uses.

SECTION 11. TOXICOLOGICAL INFORMATION

No data are available on the toxicokinetics of gas oils in vivo. Experimental studies in animals have shown absorption through the lungs. Considerations on physico-chemical properties suggest that highly breathable aerosols of poorly water-soluble substances with a log Pow higher than zero are absorbed to some degree by the respiratory tract. In the absence of further information, it is assumed that 50% of the inhaled dose of gasoil aerosol is absorbed by the lungs in animals and humans. No data are available on the dermal absorption of gas oils, however repeated toxicity studies indicate that some absorption through the skin is possible. The application of the SPINKERM model indicates that the



absorption of diesel through the skin is probably low (estimated dermal flow: 0.0001058 mg cm⁻².hour for human skin). However, since the reliability of this value is not known, a complete absorption of diesel through the human skin is assumed conservatively.

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

a) Acute toxicity

Oral

Acute oral toxicity of samples belonging to the category of straight run middle gas oils has been evaluated in a number of studies. All studies have shown an oral LD50 > 2000 mg/kg, therefore the product is not classified for this endpoint.

Below is a summary of the most representative studies of the Registration Dossier.

Method	Result	Comments	Source		
Oral					
RAT (F/M) ORAL (gavage) OECD Guideline 401	LD50: > 5000 mg/kg (M/F)	Reliable key study without restriction CAS 64741-44-2	API (1985a)		

Inhalation

Rat studies are available to evaluate the acute inhalation toxicity of products belonging to the category of straight run middle gas oils. These results lead to the classification of the substance Acute tox. 4; H332 (Harmful if inhaled).

Below is a summary of the most representative studies of the Registration Dossier.

Method	Result	Comments	Source
RAT (M/F) aerosol OECD Guideline 403	LC50: >2.53 mg/L air (M/F)	Key study reliable without restrictions CAS 64741-44-2	EMBSI 1991

Dermal

Acute oral toxicity of samples belonging to the category of straight run middle gas oils has been evaluated in a number of studies. All studies have shown a cutaneous LD50 > 2000 mg/kg, therefore the product is not classified for this endpoint.

Below is a summary of the most representative studies of the Registration Dossier.

Method	Result	Comments	Source			
Cutanea Street						
RABBIT OECD Guideline 402	LD50>2000 mg/kg) (M/F)	Key study CAS 64741-44-2 Reliable without restrictions	API (1985a)			

b) Skin corrosion/irritation

No specific studies on the corrosivity of this substance are available. Considering the information from available animal studies and the nature of the substance, no corrosive action is expected.

The potential for skin irritation of samples belonging to the category of this product has been tested in a large number of studies typically conducted on rabbits. Only a few studies show mild skin irritation. These results do not lead to any classification for this endpoint. Below is a summary of the most representative studies of the Registration Dossier.



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

_	S.P.A.						
REVISION I - 2	3/01/2023	REPLACES REV	/ISION H - 31/03/2022	DEVELOPED E	BY: ICARO S.r.l	ON BEHALF	OF: ALMA PETROLI S.p.A.
	Method		Resu	lt	Comme	nts	Source
	RABBIT Occlusive treatmen animal two sites wi skin and 2 sites wit skin) Observation at 24/ OECD Guideline 40	th intact h abraded 72 hours	Non-irritating Average erythema max 4 (on intact s Average edema so max 4 (on intact s	kin) core: 1.58 of	Key study Reliable with re CAS 64741-44-		API (1985a)

c) Serious eye damage/irritation

The potential for eye irritation of samples belonging to the category of this product has been tested in a large number of studies typically conducted on rabbits. The conclusions of these studies indicate an absence of significant irritation on the eyes, therefore the substance is not classified as irritating to the eyes. Below is a summary of the most representative studies of the Registration Dossier.

Method	Result	Comments	Source
RABBIT	Non-irritating Average corneal score: 0 of max		
Observation at 24/48/72 hours	80 (average) Average iris score: 0 of max 10	Key study Reliable without restrictions	API (1985a)
OECD Guideline 405	(average) Average conjunctiva score: 0 of max 20 (average)	CAS 64741-44-2	

d) Respiratory or skin sensitisation

Respiratory sensitization

Information not available. This endpoint is not a REACH requirement.

Skin sensitization

A skin sensitization study was conducted for the category of straight run middle gas oils. The result of this study indicates the absence of skin sensitization potential, therefore no classification of the substance is required for this endpoint.

Below is a summary of the most representative studies of the Registration Dossier.

Method	Result	Comments	Source
GUINEA PIG	Non-sensitizing	Support studio	
Buehler test		Reliable without restrictions	API (1985a)
Guideline 406	-	CAS 64741-44-2	

e) Germ cell mutagenicity

In vitro bacterial mutation tests (modified Ames test) and in vivo chromosomal aberration tests were negative. Based on the evidence, straight run gas oils are unlikely to be mutagenic in humans and therefore do not meet the criteria for classification for this endpoint.



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

Below is a summary of the most representative studies of the Registration Dossier.

Method	Result	Comments	Source
In vitro gene mutation (Ames Test) in Salmonella thyphimurium TA 98 Doses: 5, 10, 15, 20, 30, 40, 50, 60 μl/plate OECD Guideline 471	Positive with metabolic activation (marginally mutagenic)	Key study Reliable with restrictions CAS:64741-44-2 and CAS68814-87-9	Deininger, G., Jungen, H., Wenzel-Hartung, R. (1991)
bacterial reverse mutation assay in S. typhimurium TA 98 with metabolic activation. Servings: 0, 12, 24, 36, 48, 60 μl/plate	negative - MI = 0.15 for S. typhimurium TA 98 with metabolic att Genotoxicity and cytotoxicity: negative	Key study Reliable without restrictions CAS 64741-44-2	May, K. 2013

f) Carcinogenicity

Prolonged exposure to straight run gas oils can cause severe dermal irritation that can evolve into skin cancers (see study below). In the absence of irritation the appearance of tumors was NOT observed. Therefore straight run gas gases do not require any classification for this endpoint.

Method	Result	Comments	Source
MOUSE			
(males)			
Exposure: 24 months	Result: an incidence of	Key study	
Doses:50 µl	neoplasms in treated animals of	Reliable with restrictions	API (198
Exposure half life (3 times a	22% was found	CAS: 64741-44-2	
week)			
OECD 453			

g) Reproductive toxicity

Fertility toxicity

Developmental studies found positive effects only at doses that also caused maternal toxicity. Therefore, no classification of the substance is required for this endpoint.

Below is a summary of the most representative studies of the Registration Dossier.

Method	Result	Comments	Source
rat (Sprague-Dawley [rat]) female Servings: 1, 259 or 1036 mg/kg/day	First generation (P0) NOAEL (PO) 1 mg/kg bw/day) (female) according to: vaginal discharge, body weight, body weight gain, food consumption Irritation F1 generation NOAEL : 1 mg/kg bw/day (male/female) based on: reduction in the weight of the fetus	Key study Reliable with restrictions CAS 64741-43-1	ARCH 1994



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

Developmental toxicity/teratogenesis

Developmental studies have found positive effects only at doses that have also resulted in maternal toxicity. Therefore, no classification of the substance is required for this endpoint.

Below is a summary of the most representative studies of the Registration Dossier.

Method	Result	Comments	Source
RAT			
Dermal exposure route			
Doses/concentrations: 0, 50,	Mothers:	Key study	
250 or	LOAEL: 50 mg/kg bw/day	Reliable without	ARCO 1993
500 mg/kg bw/day	NOAEL: 50 mg/kg bw/day	restrictions	ARCO 1995
Vehicle: acetone	Unspecified fetal abnormalities	CAS 68915-97-9)	
Exposure: 0 to 19 days of			
gestation			

h) STOT-single exposure

No specific toxicity to target organs following single exposure.

i) STOT-repeated exposure

A dermal NOAEL of 30 mg/kg/day and an inhaled NOAEC of 1.75 mg/l for read-across were identified.

Based on the results obtained, the substance has been classified as STOT RE 2; H373 pursuant to CLP Regulation; the target organs are liver, spleen and bone marrow.

Below is a summary of the most representative studies of the Registration Dossier

It should be noted that for the oral exposure route there is no information in the registration dossier (it is not necessary to carry out repeated toxicity studies orally, as the main routes of exposure for humans are dermal and inhalation – ref. column 2, Annex IX of the Reach Regulation).

Method	Result	Comments	Source
	Inhalation	1	
RAT (M/F) Inhalation (Aerosol) Exposure: 13 weeks (sub- chronic) OECD Guideline 413	NOAEC: >1.71 mg/l systemic effects (male/female) NOAEC: 0.88 mg/l local effects (lung weight) (male/female)	Key study Read-across Reliable with restrictions Diesel fuel	Lock, S., Dalbey, W. Schmoyer, R., Griesemer, K. (1984)
	Dermal	·	
RAT (M/F) Exposure: 13 weeks OECD Guideline 411	NOAEL: 30 mg/kg bw/day clinical signs (M/F); body weight, hematology; clinical chemistry; weight of organs	Key study Reliable with restrictions CAS 68334-30-5	Mobil (1989)

j) Aspiration hazard

Since straight run gas oils have a viscosity < 20.5 mm2/s to 40 °C, it is possible that the product is sucked into the lungs according to the criteria set out in Annex I part 3 of Regulation 1272/2008.

Therefore the product is classified as Asp. Tox. 1; H304 (May be fatal if swallowed and enters airways).



11.2 Information on other hazards

11.2.1. Endocrine disrupting properties

The substance is not included in the list established in accordance with Article 59(1) of REACH for the possession of endocrine disrupting properties, or is not identified as having endocrine disrupting properties according to the criteria established by Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

11.2.2. Other information

Not available.

SECTION 12. ECOLOGICAL INFORMATION

Based on the ecological information below, the toxicity of fish, invertebrates and algae and the criteria indicated by the regulations on dangerous substances, straight run diesel is classified as Aquatic Chronic 2; H411 (toxic to aquatic organisms with long-lasting effects).

12.1 Toxicity

Below is a summary of the most representative studies of the Registration Dossier.

Endpoint	Result	Comments			
Aquatic toxicity					
Invertebrates Daphnia magna Short term	EL50 48 h: 68 mg/L LL50: 9,983 mg/L.	Key study Reliable with restrictions Read-Across Shell report 6304 (1996).			
Invertebrates Daphnia magna Long term	NOEL 21/day: 0.167 mg/l	Key study Reliable with restrictions QSAR Redman, et al. (2010b)			
Algae Raphidocelis subcapitata Short term	ErL50: mg/L EL50: 2,079 mg/L.	Key study Reliable with restrictions Read-across Shell (6304) study and Clark (2003) PETROTOX			
Microorganisms Tetrahymena pyriformis	EL50 40 h>1000mg/L NOEL: 3.099mg/L	PETROTOX			
Fish Oncorhynchus mykiss Short term	LL50 96/hour: 1.301 mg/l	Key study Reliable with restrictions QSAR Redman, et al. (2010b)			
Fish Oncorhynchus mykiss Long term	NOEL 14 days: 0.068 mg/l	Key study Reliable with restrictions QSAR Redman, et al. (2010b)			



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

12.2 Persistence and degradability

Abiotic degradability Hydrolysis: Straight run gas oils are resistant to hydrolysis due to the lack of a functional group that is hydrolytically reactive. Therefore, this process will not contribute to a measurable loss of degradation of the substance in the environment. Photolysis in air, water And soil: This substance contains hydrocarbon molecules that absorb UV light below 290 nm, a range of UV light that does not reach the Earth's surface. Therefore, this substance does not have the potential to undergo photolysis in water and soil, and this fate process will not contribute to a measurable degradation loss of this substance from the environment. **Biotic degradability**

biodegradation in water: degradation was achieved at various levels in the available tests. Two tests indicate that the substance is easily biodegradable (ignoring the 10-day window). Since the 10-day window is not relevant for UVCB substances, the substance is considered easily biodegradable. % Degradation of the test substance: 57.5 after 28 days (Canale, A.J. 1999); 35.85 after 7 days, 41.96 after 14 days, 39.4 after 21 days, 34.82 after 28 days (Lee, C. 1993)

Sediments: range of 4.07-661986 days Soil: range of 1.02-165496 days

12.3 Bioaccumulative potential

Standard tests for this endpoint are not applicable to UVCB substances. A BCF for aquatic-fish species of 0.4-6280 I/kg was calculated by QSAR for the constituents of the UVCB.

12.4 Mobility in soil

Koc absorption: Standard tests for this endpoint are not applicable to UVCB substances. A Log Koc of 1.71-14.70 was calculated by QSAR for the constituents of the UVCB.

12.5 Results of PBT and vPvB assessment

Comparison with th of Annex XIII of the REACh Regulation

The UVCB substance does not contain any PBT / vPvB constituents included in the SVHC Candidate List at concentrations above 0.1%. No other representative hydrocarbon structures were found to meet the PBT / vPvB (Evaluation of PBT for Petroleum Hydrocarbons criteria. "Concawe, 2019". In conclusion, the substance does not meet the PBT or vPvB classification criteria set out in Annex XIII of REACH.

12.6. Endocrine disrupting properties

The substance does not contain components with known endocrine disrupting properties with effects on the environment.

12.7 Other adverse effects

Not known.



SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Do not dump on the ground or in sewers, tunnels or waterways.

For the disposal of waste deriving from the product, including empty containers not reclaimed, comply with the local regulation. European Waste Catalogue Code: 13 07 03* The code indicated is only a general indication, based on the original composition of the product and the intended uses. The user (producer of the waste) is responsible for choosing the most appropriate code based on the actual use of the product, any alterations and contaminations). The product as such does not contain halogenated compounds. Disposal of containers: Do not disperse containers in the environment. Dispose of according to local regulations. Do not drill, cut, grind, weld, braze, burn or incinerate unclaimed empty containers or drums.

SECTION 14. TRANSPORT INFORMATION

14.1 UN number or ID Number

ADR/RID/ADN: 1202 IATA/IMDG: 3082

14.2 UN proper shipping name

GAS OIL or DIESEL FUEL or HEATING OIL LIGHT IATA / IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

14.3 Transport hazard class(es)

Road/railway transport (RID/ADR/ADN):			
Class:	3		
Danger code:	F1		
Label:	3		
Hazard Identification Number:	30		
Tunnel restrictions code:	D/E		
Sea transport (IMDG)			
Class:	9		
	Note: flash point up to 60°C		
Air transport (IATA):			
Class:	9		
	Note: flash point up to 60°C		

14.4 Packing group

Ш

14.5 Environmental hazards

Substance is hazardous to the environment under the code ADR, RID, ADN e IMDG.



14.6 Special precautions for users

Wear gloves (tested to EN374) if hand contact with substance likely. Refer to section 7 of the SDS "Handling and Storage"

14.7 Maritime transport in bulk according to IMO instruments

Not applicable.

SECTION 15. REGULATORY INFORMATION

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

- Title VII Authorization pursuant to reach Regulation (EC Reg. no. 1907/2006): substance not subject to authorization
- Title VIII Restrictions pursuant to reach Regulation (EC Reg. no. 1907/2006): item 3 Annex XVII: dangerous liquid substances/mixtures.

Other EU legislation and national transpositions:

- Category Seveso (Dir. 2012/18/UE) : <u>Annex 1, Part</u> 1: category P5c - Flammable liquids category E2 - Dangerous for the aquatic environment category of chronic toxicity 2 <u>Annex 1 part 2</u>: category 34 - Petroleum products and alternative fuels
- Dir. 98/24/EC: Hazardous chemical agent
- Dir. 97/42/EC and 99/38/EC: not applicable as it is not carcinogenic

15.2 Chemical safety assessment

A chemical safety assessment has been carried out. See Annex I.

SECTION 16. OTHER INFORMATION

List of relevant hazard statements and notes:

H226: Flammable liquid and vapour H304: May be fatal if swallowed and enters airways H332: Harmful if inhaled H373: May cause damage to organs through prolonged or repeated exposure H411: Toxic to aquatic life with long lasting effects

EUH066: Repeated exposure may cause skin dryness or cracking

Indications on training:

Adequate training of workers potentially exposed to this substance on the basis of the contents of this safety data sheet.

Main bibliographic references and data sources:

Registration Dossier



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

CSR 2016, CSR 2017, CSR 2018, CSR 2019, CSR 2020, CSR 2021, CSR 2022

Legend of abbreviations and acronyms:

ACGIH = American Conference of Governmental Industrial Hygienists CSR = Chemical Safety Report EC50 = Median effective concentration IC50 = Inhibition concentration, 50% Klimisch=Evaluation criterion for reliability of the method used. LC50 = Lethal concentration, 50% LD50 = Mean Lethal Dose PBT = Persistent, Bioaccumulative and Toxic Substance s.m.i: = Subsequent Modifications and Additions CNS=Central nervous system STOT = Specific target organ toxicity (STOT) RE = Repeated exposure (STOT) SE = Single exposure Key Study=Study of greater relevance TLVTWA® = Threshold limit value – time-weighted average TLVSTEL®= Threshold limit value - limit for short exposure time UVCB=substances of Unknown or Variable composition vPvB = very Persistent and very Bioaccumulative

Compilation date 29/11/2010

Revision date 01/10/2014

Reason for Rev00 of 01/10/2014: Update pursuant to Annex I of EU Regulation 453/2010, of the CLP EC Regulation 1272/2008 including the 4th ATP (Adaptations to Technical Progress) provided for substances from 1.12.14, of regulation DSD 7/548 / EEC) including the 31st ATP.

Revision date 04/05/2015 Reason for Rev.A of 04/05/2015: Update of emergency telephone numbers. Upgrade to the 5th ATP

Revision date 21/12/2015 Reason for Rev.B of 21/12/2015: Update of the following sections: 2, 8, 11, 14, 15, 16 and exposure scenarios

Revision date 14/07/2016

Reason for Rev.C of 14/07/2016: Update of the following sections: 1, 8, 16 some exposure scenarios are removed and new scenarios for professional use and consumers are introduced

Revision date 05/11/2018

Reason for Rev.D of 05/11/2018: Update of the following sections: 1, 16 and exposure scenarios.

Revision date 20/12/2019

Reason for Rev.E of 20/12/2019: Update of the following sections: 8 (changes to DNELs), 9 (inserted values calculated for solubility and Log-Pow), 11 (Changes to the end-point mutagenicity, for insertion of new Ames Test), 12 (inserted



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

values calculated for biodegradation, bioaccumulation and mobility in the soil) and Exposure scenarios for the environmental part.

Revision date 20/04/2020

Reason for Rev. F of 20/04/2020: Update of the format of the safety data sheet (all sections.) Update of section 8 (replacement of pictograms in accordance with UNI EN 7010 Safety Signs 201.

Revision date20/11/2020

Reason for Rev.G of 20/11/2020: Update of sections 1 (uses), 14 (removed section 14. and 16 (added bibliographic source) and exposure scenarios as per CSR 2020.

Revision date: 31/03/2022

Reason for Rev. H of 31/03/2022: Update of the SDS model according to Reg. (EU) 2020/878. Updating the content of sections 1, 2, 4, 5, 6, 7, 8, 11, 12, 16. Update of exposure scenarios as per CSR 2021.

Revision date: 23/12/2022

Reason for Rev I of 23/01/2023: Update of the SDS in according to Chemical Safety Report 2022 and update of exposure scenarios, reported information for the management of the risk of presence of H₂S.



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

ANNEX 1

EXPOSURE SCENARIOS STRAIGHT RUN GAS OIL



REVISION I - 23/01/2023	REPLACI	ES REVISION H - 3	1/03/2022	DEVELOPED BY: ICARO S	.r.I ON BEHALF O	F: ALMA PETROLI S.p.A.
Identified uses	Life Cycle	Field of use (SU)	Product Category (PC)	Process Category(PROC)	Environmental Release Category (ERC)	Specific Environmental Release Category (SpERC)
01 - Manufacture of substance	Manufacture	n.a	n.a.	1, 2, 3, 4, 8a, 8b, 9, 15, 28	1	ESVOC SpERC 1.1.v1
02 - Formulation and (re)packaging of substances and mixtures	Formulation	n.a.	n.a.	1, 2, 3, 4, 5, 8a, 8b, 9, 14, 15, 28	2	ESVOC SpERC 2.2.v1
01b - Use as an intermediate	Industrial	8, 9	n.a.	1, 2, 3, 4, 8a, 8b, 9, 15, 28	6th	ESVOC SpERC 6.1a.v1
05a - Use in oil and gas field drilling and production operations; Industrial	industrial	n.a.	n.a.	1, 2, 3, 4, 8a, 8b, 9, 28	4	qualitative assessment for the environment
12a - Use in fuel	Industrial	n.a.	n.a.	1, 2, 8a, 8b, 16, 28	7	ESVOC SpERC 7.12a.v1
12b - Use in fuel	Professional	n.a.	n.a.	1, 2, 8a, 8b, 16, 28	9a, 9b	ESVOC SpERC 9.12b.v1
12c - Use in fuel	Consumers	13	n.a.	n.a.	9a, 9b	ESVOC SpERC 9.12c.v1

in compliance with EC Regulation no. 1907/2006 and s.m.i



GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

Index

01 - Manufacture of substance	26
02 - Formulation & (re)packing of substances and mixtures	34
01b - Use as an intermediate	45
05a - Use in oil and gas field drilling and production operations; Industrial	53
12a - Use in fuel; Industrial	64
12b - Use in fuel; Professional	70
12c - Use in fuel; Consumer	77



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

01 - Manufacture of substance

Section 1		
Title		
01 - Manufacture of substan	nce	
Use Descriptor		
Sector(s) of Use		
Process Categories		1, 2, 3, 4, 8a, 8b, 9, 15, 28
Environmental Release Cate	egories	1
Specific Environmental Rele	ase Category	ESVOC SpERC 1.1.v1
Processes, tasks, activities	covered	
material transfers, storage,		or extraction agent. Includes recycling/ recovery, ding marine vessel/barge, road/rail car and bulk
See Section 3.		
	itions and rick management m	0000000
-	itions and risk management me	easures
Section 2.1 Control of work Product characteristics	er exposure	
	thereid	
Physical form of product	Liquid	Line at Standard Torrespondence and Discours Mill
Vapour pressure	potential for aerosol genera	5 kPa at Standard Temperature and Pressure With tion [ESCom-11133171333 ESCom-11133171301]
Concentration of		e in the product up to 100 %. (unless stated
substance in product	differently) [ESCom-111331 ESCom-18309152200]	71310 ESCom-18309152101 ESCom-16173221408
Frequency and duration	Covers daily exposures up to	9 8 hours (unless stated differently) [ESCom-
of use/exposure	11133171304 ESCom-18309	152101 ESCom-16173221408 ESCom-18309152200]
Other Operational	Assumes a good basic stand	ard of occupational hygiene is implemented [ESCom-
Conditions affecting	11133171303]	
exposure		eratures. (unless stated differently) [ESCom- 152101 ESCom-16173221408 ESCom-18309152200]
Contributing Scenarios		Measures and Operating Conditions
General measures		24 or H225 or H226, refer to section 2 of the SDS; For
(flammability) [ESCom-		om physicochemical properties, refer to main body of
19350151900]	the SDS, section 7 and/or 8.	
General measures	applicable if classified as H3	04, refer to section 2 of the SDS; Do not ingest. If
(aspiration hazard)	swallowed then seek immed	
General exposures;	Handle substance within a c	losed system. [ESCom-11133171405]
Closed systems (PROC_1)	Sample via a closed loop or 11133171361]	other system to avoid exposure. [ESCom-
	-	re up to 800.0 °C [ESCom-12355002161]
		vice. Obligations according to Article 37(4) of REACH do
	not apply.	
		d skin exposure to the substance is likely, then wear
	suitable gloves tested to EN	374. Provide employee with skin care programmes.
		m 1E10212E61E]
	[ESCom-16354145601 ESCor	11-13132122012]
General exposures;		o points where emissions occur. [ESCom-
General exposures; Closed systems (PROC_2)		
-	Provide extract ventilation t 11133171412]	
-	Provide extract ventilation t 11133171412] Handle substance within a c Sample via a closed loop or c	o points where emissions occur. [ESCom-
-	Provide extract ventilation t 11133171412] Handle substance within a c Sample via a closed loop or 11133171361]	o points where emissions occur. [ESCom- losed system. [ESCom-11133171405]



S.P.A.				
REVISION I - 23/01/2023	REPLACES REVISION H - 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON BEHALF OF: ALMA PETROLI S.p.A.	
	not apply.			
	If repeated and/or prolonged skin exposure to the substance is likely, then wear			
	suitable gloves tested to EN	374. Provide employee with	n skin care programmes.	
	[ESCom-16354145601 ESCo			
General exposures;	Provide extract ventilation t		ccur [ESCom-	
Closed systems (PROC_3)	11133171412]	o points where emissions o		
Closed systems (PROC_3)	-	concret ventilation (not loss	than 2 to 5 air changes par	
	Provide a good standard of		s than 5 to 5 all changes per	
	hour). [ESCom-1113317136			
	Handle substance within a c			
	Sample via a closed loop or	other system to avoid expo	sure. [ESCom-	
	11133171361]			
	Assumes process temperatu	re up to 800.0 °C [ESCom-1	.2355002161]	
	Additional good practice adv	vice. Obligations according	to Article 37(4) of REACH do	
	not apply.			
	If repeated and/or prolonge	d skin exposure to the subs	stance is likely, then wear	
	suitable gloves tested to EN			
	[ESCom-16354145601 ESCo			
Conoral overacuracy Open	Wear suitable gloves tested		ation is expected to extend	
General exposures; Open	•			
systems (PROC_4)	to other parts of the body, t		-	
	impervious garments in a m	-		
	further specification, refer t		om-10133224896 ESCom-	
	17297180800 ESCom-12355	5002165]		
	Additional good practice adv	vice. Obligations according	to Article 37(4) of REACH do	
	not apply.			
	If repeated and/or prolonge	ed skin exposure to the subs	stance is likely, then wear	
	suitable gloves tested to EN	374. Provide employee with	n skin care programmes.	
	[ESCom-16354145601 ESCo			
Process sampling	Wear suitable gloves tested	-	ation is expected to extend	
(PROC_9)	to other parts of the body, t			
(1100_5)	impervious garments in a m			
	further specification, refer t	-		
	17297180800 ESCom-12355	_	011-10133224890 130011-	
		-	to Auticle 27(4) of DEACU de	
		vice. Obligations according	to Article 37(4) of REACH do	
	not apply.			
	If repeated and/or prolonge			
	suitable gloves tested to EN		n skin care programmes.	
	[ESCom-16354145601 ESCo	m-15193135615]		
Laboratory activities	No other specific measures	identified. [ESCom-1113317	71454]	
(PROC_15)	Additional good practice adv	vice. Obligations according	to Article 37(4) of REACH do	
	not apply.	-		
	Put lids on containers imme	diately after use. [ESCom-9	267230301]	
	If repeated and/or prolonge	-	-	
	suitable gloves tested to EN	•	•	
	[ESCom-16354145601 ESCo		i skill care programmes.	
Pulk transfors: Classed	1 -	•	22171405]	
Bulk transfers; Closed	Handle substance within a c	-	_	
systems (PROC_8b)	Wear chemically resistant g			
	employee training. If skin co			
	the body, then these body p			
	garments in a manner equiv			
	specification, refer to sectio	n 8 of the SDS. [ESCom-111	33171457 ESCom-	
	17297180800 ESCom-12355	5002165]		
	Additional good practice adv	vice. Obligations according	to Article 37(4) of REACH do	
	not apply.	- 0		
L	· · · ·			



S.P.A.				
REVISION I - 23/01/2023	REPLACES REVISION H - 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON BEHALF OF: ALMA PETROLI S.p.A.	
	If repeated and/or prolonge suitable gloves tested to EN [ESCom-16354145601 ESCo	374. Provide employee wit m-15193135615]	h skin care programmes.	
Bulk transfers; Open systems (PROC_8b) Equipment cleaning and	Wear chemically resistant g employee training. If skin co the body, then these body p garments in a manner equiv specification, refer to sectio 17297180800 ESCom-12355 Additional good practice add not apply. Ensure no splashing occurs of If repeated and/or prolonge suitable gloves tested to EN [ESCom-16354145601 ESCo Drain down and flush system	oves (tested to EN374) in o ntamination is expected to arts should also be protect alent to those described fo n 8 of the SDS. [ESCom-11: 002165] vice. Obligations according during transfer. [ESCom-16 d skin exposure to the sub 374. Provide employee wit m-15193135615]	o extend to other parts of ted with impervious or the hands. For further 133171457 ESCom- to Article 37(4) of REACH do 5173221409] stance is likely, then wear th skin care programmes.	
maintenance (PROC_8a, PROC_28)	not apply. Wear suitable coveralls to p Clear spills immediately. [ES If repeated and/or prolonge suitable gloves tested to EN [ESCom-16354145601 ESCo	ntamination is expected to arts should also be protect alent to those described for n 8 of the SDS. [ESCom-11: 002165] vice. Obligations according revent exposure to the skin Com-9267230103] d skin exposure to the sub 374. Provide employee wit m-15193135615]	o extend to other parts of ted with impervious or the hands. For further 133171457 ESCom- to Article 37(4) of REACH do n. [ESCom-11133171468] stance is likely, then wear th skin care programmes.	
Storage (PROC_2, PROC_1)	not apply. If repeated and/or prolonge suitable gloves tested to EN [ESCom-16354145601 ESCo	vice. Obligations according d skin exposure to the sub 374. Provide employee wit	to Article 37(4) of REACH do stance is likely, then wear	
Section 2.2 Control of envi	ronmental exposure			
Product characteristics		ata antiche de la la de la comp	Come 44422474 COA1	
Substance is complex UVCE Amounts used	3. [ESCom-11133171600] Predor	ninantiy nydrophobic. [ESC	_om-111331/1601]	
Amounts used Fraction of EU tonnage use	d in rogion		0.6	
Regional use tonnage (tonr			0,6	
			3,5E+06	
Fraction of Regional tonnag			1,0E+00	
Annual site tonnage (tonne			3,5E+06	
Maximum daily site tonnag			1,2E+07	
Frequency and duration of				
Continuous release. [ESCor	n-10133212701]		200	
Emission days (days/year)			300	
	influenced by risk managemen	t		
Local freshwater dilution fa			10	
Local marine water dilution			100	
Other given operational conditions affecting environmental exposure				



S.P.A. REVISION I - 23/01/2023	REPLACES REVISION H - 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON BEHALF OF: ALMA PETROLI S.p.
Release fraction to air from	process (initial release prior to	n RMM)	1,0E-03
	ater from process (initial release	•	3,0E-07
	n process (initial release prior t	• •	0.0001
	neasures at process level (sour	-	
Common practices vary acr	oss sites thus conservative pro	cess release estimates used.	[ESCom-10133220229]
Technical onsite conditions	s and measures to reduce or li	mit discharges, air emissions	and releases to soil
	posure is driven by freshwater		
	olved substance to or recover		
	ewage treatment plant, no on		
	le a typical removal efficiency of		9,0E+01
removal efficiency >= (%)	rior to receiving water dischar	ge) to provide the required	90,4
If discharging to domestic s wastewater removal efficie	ewage treatment plant, provic ncy of >= (%)	le the required onsite	0,0
Organisation measures to	prevent/limit release from site	e	
Do not apply industrial slud reclaimed. [ESCom-101332]	ge to natural soils. [ESCom-10 21229]	133221228] Sludge should be	incinerated, contained or
Conditions and measures r	elated to municipal sewage tr	eatment plant	
Not applicable as there is n	o release to wastewater. [ESCo	om-10133222100]	
	val from wastewater via domes		92,5
Total efficiency of removal treatment plant) RMMs (%)	from wastewater after onsite a	and offsite (domestic	92,5
· · · · · · · · · · · · · · · · · · ·	nnage (MSafe) based on releas	se following total wastewater	1,5E+07
treatment removal (kg/d)			
	treatment plant flow (m3/d)		1,0E+04
	elated to external treatment of	•	
	aste of the substance is generation		
	elated to external recovery of		
	aste of the substance is generation	ated. [ESCom-10133222904]	
Section 3 Exposure Estimat 3.1. Health	lion		
	een used to estimate workplac	a avpasuras uplass athorwise	indicated
3.2. Environment		e exposures unless otherwise	
	thod has been used to calculat	e environmental exposure wi	th the PETRORISK model.
[ESCom-11133171701]			
	k compliance with the Exposu	ire Scenario	
4.1. Health	· · ·		
Predicted exposures are no conditions outlined in section conditions are adopted, the hazard data do not enable to	t expected to exceed the DN(N on 2 are implemented.; Where en users should ensure that risi the derivation of a DNEL for as risation. [ESCom-11133171315	e other risk management mea ks are managed to at least eq piration effects.; Risk manage	sures/operational uivalent levels.; Available ment measures are based
Worker CS 1: General expo	sures; Closed systems (PROC	1)	

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Vapour >10.000 Pa	0.035 mg/m ³ (TRA Workers) RCR = 2.14E-3	Final RCR < 0.01
Inhalation, systemic, acute	Vapour >10.000 Pa	0.14 mg/m ³ (TRA Workers) RCR = 9.35E-5	Final RCR < 0.01

in compliance with EC Regulation no. 1907/2006 and s.m.i



GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

Combined routes,			Final RCR < 0.01
systemic, long-term			
Combined routes,			Final RCR < 0.01
systemic, acute			
			·
	l exposures; Closed syst		1
Route of exposure	Assessment entity	Exposure concentration	Risk quantification
and type of effects			
Inhalation,	Vapour >10.000 Pa	8.771 mg/m ³ (TRA Workers) RCR = 0.535	Final RCR = 0.535
systemic, long term			
Inhalation,	Vapour >10.000 Pa	35.08 mg/m ³ (TRA Workers) RCR = 0.023	Final RCR = 0.023
systemic, acute			5: LDCD 0.525
Combined routes,			Final RCR = 0.535
systemic, long-term			
Combined routes,			Final RCR = 0.023
systemic, acute			
Worker CS 3: General	l exposures; Closed syst	tems (PROC 3)	
Route of exposure	Assessment entity	Exposure concentration	Risk quantification
and type of effects	·····		
Inhalation,	Vapour >10.000 Pa	12.28 mg/m ³ (TRA Workers) RCR = 0.749	Final RCR = 0.749
systemic, long term			
Inhalation,	Vapour >10.000 Pa	49.12 mg/m ³ (TRA Workers) RCR = 0.033	Final RCR = 0.033
systemic, acute			
Combined routes,			Final RCR = 0.749
systemic, long-term			
Combined routes,			Final RCR = 0.033
systemic, acute			
	1		Diele and a file at a s
Route of exposure	exposures; Open syste Assessment entity	Exposure concentration	Risk quantification
Route of exposure and type of effects	Assessment entity	Exposure concentration	-
Route of exposure and type of effects Inhalation,	Assessment entity Aerosol	Exposure concentration 4.798 mg/m ³ (TRA Workers) RCR = 0.293	Risk quantification Final RCR = 0.398
Route of exposure and type of effects Inhalation,	Assessment entity Aerosol Vapour 10-500 Pa	Exposure concentration 4.798 mg/m ³ (TRA Workers) RCR = 0.293 1.339 mg/m ³ (TRA Workers) RCR = 0.082	-
Route of exposure and type of effects Inhalation,	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000	Exposure concentration 4.798 mg/m ³ (TRA Workers) RCR = 0.293	-
Route of exposure and type of effects Inhalation,	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa	Exposure concentration 4.798 mg/m³ (TRA Workers) RCR = 0.293 1.339 mg/m³ (TRA Workers) RCR = 0.082 0.36 mg/m³ (TRA Workers) RCR = 0.022	-
Route of exposure and type of effects Inhalation, systemic, long term	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000	Exposure concentration 4.798 mg/m ³ (TRA Workers) RCR = 0.293 1.339 mg/m ³ (TRA Workers) RCR = 0.082	-
Route of exposure and type of effects Inhalation, systemic, long term Inhalation,	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Aerosol	Exposure concentration 4.798 mg/m³ (TRA Workers) RCR = 0.293 1.339 mg/m³ (TRA Workers) RCR = 0.082 0.36 mg/m³ (TRA Workers) RCR = 0.022 0.035 mg/m³ (TRA Workers) RCR = 2.14E-3	Final RCR = 0.398
Route of exposure and type of effects Inhalation, systemic, long term Inhalation,	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure concentration 4.798 mg/m³ (TRA Workers) RCR = 0.293 1.339 mg/m³ (TRA Workers) RCR = 0.082 0.36 mg/m³ (TRA Workers) RCR = 0.022 0.035 mg/m³ (TRA Workers) RCR = 2.14E-3 19.19 mg/m³ (TRA Workers) RCR = 0.013	Final RCR = 0.398
Route of exposure and type of effects Inhalation, systemic, long term Inhalation,	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Aerosol Vapour 10-500 Pa	Exposure concentration 4.798 mg/m³ (TRA Workers) RCR = 0.293 1.339 mg/m³ (TRA Workers) RCR = 0.082 0.36 mg/m³ (TRA Workers) RCR = 0.022 0.035 mg/m³ (TRA Workers) RCR = 2.14E-3 19.19 mg/m³ (TRA Workers) RCR = 0.013 5.355 mg/m³ (TRA Workers) RCR = 3.57E-3	Final RCR = 0.398
Route of exposure and type of effects Inhalation, systemic, long term Inhalation,	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Aerosol Vapour 10-500 Pa Vapour 10-500 Pa	Exposure concentration 4.798 mg/m³ (TRA Workers) RCR = 0.293 1.339 mg/m³ (TRA Workers) RCR = 0.082 0.36 mg/m³ (TRA Workers) RCR = 0.022 0.035 mg/m³ (TRA Workers) RCR = 2.14E-3 19.19 mg/m³ (TRA Workers) RCR = 0.013 5.355 mg/m³ (TRA Workers) RCR = 3.57E-3	Final RCR = 0.398
Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic, acute	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa	Exposure concentration 4.798 mg/m³ (TRA Workers) RCR = 0.293 1.339 mg/m³ (TRA Workers) RCR = 0.082 0.36 mg/m³ (TRA Workers) RCR = 0.022 0.035 mg/m³ (TRA Workers) RCR = 2.14E-3 19.19 mg/m³ (TRA Workers) RCR = 0.013 5.355 mg/m³ (TRA Workers) RCR = 3.57E-3 1.442 mg/m³ (TRA Workers) RCR = 9.61E-4	Final RCR = 0.398
Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic, acute Dermal, systemic,	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure concentration 4.798 mg/m³ (TRA Workers) RCR = 0.293 1.339 mg/m³ (TRA Workers) RCR = 0.082 0.36 mg/m³ (TRA Workers) RCR = 0.022 0.035 mg/m³ (TRA Workers) RCR = 0.022 0.035 mg/m³ (TRA Workers) RCR = 0.013 5.355 mg/m³ (TRA Workers) RCR = 3.57E-3 1.442 mg/m³ (TRA Workers) RCR = 9.61E-4 0.14 mg/m³ (TRA Workers) RCR = 9.35E-5	Final RCR = 0.398
Worker CS 4: General Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic, acute Dermal, systemic, long term Combined routes,	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure concentration 4.798 mg/m³ (TRA Workers) RCR = 0.293 1.339 mg/m³ (TRA Workers) RCR = 0.082 0.36 mg/m³ (TRA Workers) RCR = 0.022 0.035 mg/m³ (TRA Workers) RCR = 2.14E-3 19.19 mg/m³ (TRA Workers) RCR = 0.013 5.355 mg/m³ (TRA Workers) RCR = 3.57E-3 1.442 mg/m³ (TRA Workers) RCR = 9.61E-4 0.14 mg/m³ (TRA Workers) RCR = 9.35E-5 1.372 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.398
Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic, acute Dermal, systemic, long term	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure concentration 4.798 mg/m³ (TRA Workers) RCR = 0.293 1.339 mg/m³ (TRA Workers) RCR = 0.082 0.36 mg/m³ (TRA Workers) RCR = 0.022 0.035 mg/m³ (TRA Workers) RCR = 2.14E-3 19.19 mg/m³ (TRA Workers) RCR = 0.013 5.355 mg/m³ (TRA Workers) RCR = 3.57E-3 1.442 mg/m³ (TRA Workers) RCR = 9.61E-4 0.14 mg/m³ (TRA Workers) RCR = 9.35E-5 1.372 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.398 Final RCR = 0.017 Final RCR = 0.472
Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic, acute Dermal, systemic, long term Combined routes,	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure concentration 4.798 mg/m³ (TRA Workers) RCR = 0.293 1.339 mg/m³ (TRA Workers) RCR = 0.082 0.36 mg/m³ (TRA Workers) RCR = 0.022 0.035 mg/m³ (TRA Workers) RCR = 2.14E-3 19.19 mg/m³ (TRA Workers) RCR = 0.013 5.355 mg/m³ (TRA Workers) RCR = 3.57E-3 1.442 mg/m³ (TRA Workers) RCR = 9.61E-4 0.14 mg/m³ (TRA Workers) RCR = 9.35E-5 1.372 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.398 Final RCR = 0.017 Final RCR = 0.472



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation,	Aerosol	4.798 mg/m ³ (TRA Workers) RCR = 0.293	Final RCR = 0.433
systemic,			
long term			
	Vapour 10-500 Pa	1.339 mg/m ³ (TRA Workers) RCR = 0.082	
	Vapour 500-10.000	0.901 mg/m ³ (TRA Workers) RCR = 0.055	
	Pa		
	Vapour >10.000 Pa	0.07 mg/m ³ (TRA Workers) RCR = 4.28E-3	
Inhalation,	Aerosol	19.19 mg/m ³ (TRA Workers) RCR = 0.013	Final RCR = 0.019
systemic, acute			
acute	Vapour 10-500 Pa	5.355 mg/m ³ (TRA Workers) RCR = 3.57E-3	-
	Vapour 500-10.000	3.604 mg/m ³ (TRA Workers) RCR = 2.4E-3	-
	Pa	5.004 mg/m (not workers) keit = 2.42 5	
	Vapour >10.000 Pa	0.281 mg/m ³ (TRA Workers) RCR = 1.87E-4	1
Dermal, systemic,	Dermal	1.372 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.472
long term		0.472	
Combined routes,			Final RCR = 0.905
systemic, long-term			
Combined routes,			Final RCR = 0.019
systemic, acute			
Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation,	Aerosol	0.48 mg/m ³ (TRA Workers) RCR = 0.029	Final RCR = 0.123
systemic,			
long term			
	Vapour 10-500 Pa	1.339 mg/m ³ (TRA Workers) RCR = 0.082	-
	Vapour 500-10.000	0.18 mg/m ³ (TRA Workers) RCR = 0.011	
	Pa		-
Inhalation	Vapour >10.000 Pa	0.018 mg/m^3 (TRA Workers) RCR = 1.07E-3	Einal BCB < 0.01
Inhalation, systemic,	Aerosol	1.919 mg/m ³ (TRA Workers) RCR = 1.28E-3	Final RCR < 0.01
acute			
	Vapour 10-500 Pa	5.355 mg/m ³ (TRA Workers) RCR = 3.57E-3	-
	Vapour 10-500 Pa Vapour 500-10.000	5.355 mg/m ³ (TRA Workers) RCR = 3.57E-3 0.721 mg/m ³ (TRA Workers) RCR = 4.8E-4	-
	· · ·		-
	Vapour 500-10.000		
	Vapour 500-10.000 Pa	0.721 mg/m ³ (TRA Workers) RCR = 4.8E-4	
Dermal, systemic, long term	Vapour 500-10.000 Pa Vapour >10.000 Pa	0.721 mg/m ³ (TRA Workers) RCR = 4.8E-4 0.07 mg/m ³ (TRA Workers) RCR = 4.68E-5	Final RCR = 0.117
Dermal, systemic, long term Combined routes,	Vapour 500-10.000 Pa Vapour >10.000 Pa	0.721 mg/m ³ (TRA Workers) RCR = 4.8E-4 0.07 mg/m ³ (TRA Workers) RCR = 4.68E-5 0.34 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.117 Final RCR = 0.24
Dermal, systemic, long term Combined routes, systemic, long-term	Vapour 500-10.000 Pa Vapour >10.000 Pa	0.721 mg/m ³ (TRA Workers) RCR = 4.8E-4 0.07 mg/m ³ (TRA Workers) RCR = 4.68E-5 0.34 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.24
Dermal, systemic, long term Combined routes, systemic, long-term Combined routes,	Vapour 500-10.000 Pa Vapour >10.000 Pa	0.721 mg/m ³ (TRA Workers) RCR = 4.8E-4 0.07 mg/m ³ (TRA Workers) RCR = 4.68E-5 0.34 mg/kg bw/day (TRA Workers) RCR =	
Dermal, systemic, long term Combined routes, systemic, long-term Combined routes,	Vapour 500-10.000 Pa Vapour >10.000 Pa	0.721 mg/m ³ (TRA Workers) RCR = 4.8E-4 0.07 mg/m ³ (TRA Workers) RCR = 4.68E-5 0.34 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.24
Dermal, systemic, long term Combined routes, systemic, long-term Combined routes, systemic, acute Worker CS 7: Bulk tra	Vapour 500-10.000 Pa Vapour >10.000 Pa	0.721 mg/m ³ (TRA Workers) RCR = 4.8E-4 0.07 mg/m ³ (TRA Workers) RCR = 4.68E-5 0.34 mg/kg bw/day (TRA Workers) RCR = 0.117 (PROC 8b)	Final RCR = 0.24

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic,	Vapour 10-500 Pa	1.339 mg/m ³ (TRA Workers) RCR = 0.082	Final RCR = 0.112



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

long term			
	Vapour 500-10.000 Pa	0.451 mg/m ³ (TRA Workers) RCR = 0.027	
	Vapour >10.000 Pa	0.053 mg/m ³ (TRA Workers) RCR = 3.21E-3	-
Inhalation, systemic, acute	Vapour 10-500 Pa	5.355 mg/m ³ (TRA Workers) RCR = 3.57E-3	Final RCR < 0.01
	Vapour 500-10.000 Pa	1.802 mg/m ³ (TRA Workers) RCR = 1.2E-3	-
	Vapour >10.000 Pa	0.211 mg/m ³ (TRA Workers) RCR = 1.4E-4	-
Dermal, systemic, long term	Dermal	1.371 mg/kg bw/day (TRA Workers) RCR = 0.471	Final RCR = 0.471
Combined routes, systemic, long-term			Final RCR = 0.583
Combined routes, systemic, acute			Final RCR < 0.01
Worker CS 8: Bulk tra	insfers; Open systems (PROC 8b)	
Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Aerosol	0.96 mg/m ³ (TRA Workers) RCR = 0.059	Final RCR = 0.171
	Vapour 10-500 Pa	1.339 mg/m ³ (TRA Workers) RCR = 0.082	-
	Vapour 500-10.000 Pa	0.451 mg/m ³ (TRA Workers) RCR = 0.027	
	Vapour >10.000 Pa	0.053 mg/m ³ (TRA Workers) RCR = 3.21E-3	
Inhalation, systemic, acute	Aerosol	3.838 mg/m ³ (TRA Workers) RCR = 2.56E-3	Final RCR < 0.01
	Vapour 10-500 Pa	5.355 mg/m ³ (TRA Workers) RCR = 3.57E-3	-
	Vapour 500-10.000 Pa	1.802 mg/m ³ (TRA Workers) RCR = 1.2E-3	
	Vapour >10.000 Pa	0.211 mg/m ³ (TRA Workers) RCR = 1.4E-4	
Dermal, systemic, long term	Dermal	1.371 mg/kg bw/day (TRA Workers) RCR = 0.471	Final RCR = 0.471
Combined routes, systemic, long-term			Final RCR = 0.642
Combined routes, systemic, acute			Final RCR < 0.01
	-	tenance (PROC 8a, PROC 28)	
Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Vapour 10-500 Pa	2.678 mg/m ³ (TRA Workers) RCR = 0.163	Final RCR = 0.224
J	Vapour 500-10.000 Pa	0.901 mg/m ³ (TRA Workers) RCR = 0.055	
	Vapour >10.000 Pa	0.088 mg/m ³ (TRA Workers) RCR = 5.35E-3	
Inhalation, systemic,	Vapour 10-500 Pa	10.71 mg/m ³ (TRA Workers) RCR = 7.14E-3	Final RCR < 0.01



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

acute			
	Vapour 500-10.000 Pa	3.604 mg/m ³ (TRA Workers) RCR = 2.4E-3	
	Vapour >10.000 Pa	0.351 mg/m ³ (TRA Workers) RCR = 2.34E-4	
Dermal, systemic,	Dermal	1.371 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.471
long term		0.471	
Combined routes,			Final RCR = 0.695
systemic, long-term			
Combined routes,			Final RCR < 0.01
systemic, acute			
Worker CS 10: Storage	e (PROC 2, PROC 1)		
Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation,	Vapour 10-500 Pa	0.268 mg/m ³ (TRA Workers) RCR = 0.016	Final RCR = 0.022
systemic, long term	Vapour 500-10.000 Pa	0.09 mg/m ³ (TRA Workers) RCR = 5.49E-3	
	Vapour >10.000 Pa	8.77E-3 mg/m ³ (TRA Workers) RCR = 5.35E- 4	
Inhalation, systemic, acute	Vapour 10-500 Pa	1.071 mg/m ³ (TRA Workers) RCR = 7.14E-4	Final RCR < 0.01
	Vapour 500-10.000 Pa	0.36 mg/m ³ (TRA Workers) RCR = 2.4E-4	-
	Vapour >10.000 Pa	0.035 mg/m ³ (TRA Workers) RCR = 2.34E-5	
Dermal, systemic, long term	Dermal	1.37 mg/kg bw/day (TRA Workers) RCR = 0.471	Final RCR = 0.471
Combined routes, systemic, long-term			Final RCR = 0.493
Combined routes, systemic, acute			Final RCR < 0.01
4.2. Environment	1		1
Guidance is based on necessary to define ap	opropriate site-specific	nditions which may not be applicable to all site risk management measures. [ESCom-1013322	3600] Required
		hieved using onsite/offsite technologies, either	
		ed removal efficiency for air can be achieved us	-
•		. [ESCom-10133223602] Further details on sca t (http://cefic.org/en/reach-for-industries-libra	•
Maximum Risk Charac	terisation Ratio for Air	Emissions RCRair	5,5E-02



in compliance with EC Regulation no. 1907/2006 and s.m.i



GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

02 - Formulation & (re)packing of substances and mixtures

Section 1				
Title				
02 - Formulation & (re)pack	ing of substances and mixtures			
Use Descriptor				
Sector(s) of Use				
Process Categories		1, 2, 3, 4, 5, 8a, 8b, 9, 14, 15, 28		
Environmental Release Cate	egories	2		
		ESVOC SpERC 2.2.v1		
Processes, tasks, activities of	covered	· · · ·		
Formulation, packing and re	-packing of the substance and i	ts mixtures in batch or continuous operations,		
		mpression, pelletisation, extrusion, large and small		
scale packing, sampling, ma	intenance and associated labor	atory activities.		
Assessment Method		·		
See Section 3.				
Section 2 Operational cond	itions and risk management me	easures		
Section 2.1 Control of work				
Product characteristics				
Physical form of product	Liquid			
Vapour pressure		kPa at Standard Temperature and Pressure With		
		tion [ESCom-11133171333 ESCom-11133171301]		
Concentration of		e in the product up to 100 %. (unless stated		
substance in product				
substance in product	differently) [ESCom-11133171310 ESCom-18309152101 ESCom-16173221408 ESCom-18309152200]			
Frequency and duration	-	8 hours (unless stated differently) [ESCom-		
of use/exposure				
	11133171304 ESCom-18309152101 ESCom-16173221408 ESCom-18309152200]			
Other Operational Conditions affecting	Assumes a good basic standard of occupational hygiene is implemented [ESCom-			
-	11133171303]			
exposure	Covers use at ambient temperatures. (unless stated differently) [ESCom- 10133224959 ESCom-18309152101 ESCom-16173221408 ESCom-18309152200]			
Contributing Scenarios		- -		
General measures	Specific Risk Management Measures and Operating Conditions applicable if classified as H224 or H225 or H226, refer to section 2 of the SDS; For			
(flammability) [ESCom-				
19350151900]	measures to control risks from physicochemical properties, refer to main body of			
General measures	the SDS, section 7 and/or 8. []			
(aspiration hazard)	applicable if classified as H304, refer to section 2 of the SDS; Do not ingest. If swallowed then seek immediate medical assistance. []			
General exposures; Closed systems (PROC_2,	Handle substance within a closed system. [ESCom-11133171405] Sample via a closed loop or other system to avoid exposure. [ESCom-			
PROC_1, PROC_3)		Sher system to avoid exposure. [ESCON-		
PROC_1, PROC_3)	11133171361] Additional good practice advice. Obligations according to Article 37(4) of REACH do			
	not apply.	ice. Obligations according to Article 37(4) of REACH do		
		d skin ovnosura to the substance is likely, then wear		
	If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374. Provide employee with skin care programmes.			
	[ESCom-16354145601 ESCom-15193135615]			
Conoral expectives: Open		-		
General exposures; Open	Wear suitable gloves tested to EN374. If skin contamination is expected to extend			
systems (PROC_4)	to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands. For			
		further specification, refer to section 8 of the SDS. [ESCom-10133224896 ESCom-		
	further specification, refer to			
	further specification, refer to 17297180800 ESCom-12355	002165]		
	further specification, refer to 17297180800 ESCom-12355 Additional good practice adv			
	further specification, refer to 17297180800 ESCom-12355 Additional good practice adv not apply.	002165]		



S.P.A.					
REVISION I - 23/01/2023	REPLACES REVISION H - 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON BEHALF OF: ALMA PETROLI S.p.A.		
	suitable gloves tested to EN374. Provide employee with skin care programmes.				
	[ESCom-16354145601 ESCo	m-15193135615]			
Batch process; Elevated	Provide extract ventilation t	o points where emissions o	ccur. [ESCom-		
temperature; Use in	11133171412]				
contained systems	Handle substance within a c	losed system. [ESCom-1113	3171405]		
(PROC_3)	Assumes process temperature up to 60.0 °C [ESCom-12355002161]				
	Additional good practice advice. Obligations according to Article 37(4) of REACH do				
	not apply. If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374. Provide employee with skin care programmes.				
	[ESCom-16354145601 ESCo				
Process sampling	Wear suitable gloves tested		ation is expected to extend		
(PROC_9)	to other parts of the body, t		-		
(FROC_3)	impervious garments in a m				
		-			
	further specification, refer to section 8 of the SDS. [ESCom-10133224896 ESCom- 17297180800 ESCom-12355002165]				
		-	to Article 27(4) of DEACU de		
	Additional good practice ad	vice. Obligations according i	to Article 37(4) of REACH do		
	not apply. If repeated and/or prolonged skin exposure to the substance is likely, then wear				
			-		
	suitable gloves tested to EN374. Provide employee with skin care programmes.				
	[ESCom-16354145601 ESCo				
Laboratory activities	No other specific measures		_		
(PROC_15)	Additional good practice ad	vice. Obligations according t	to Article 37(4) of REACH do		
	not apply.				
	Put lids on containers imme	-	_		
	If repeated and/or prolonge		-		
	suitable gloves tested to EN374. Provide employee with skin care program				
	[ESCom-16354145601 ESCo	-			
Bulk transfers; Dedicated	Handle substance within a c	-	_		
facility (PROC_8b)	Wear chemically resistant g				
	employee training. If skin co	-	-		
	the body, then these body parts should also be protected with impervious				
	garments in a manner equivalent to those described for the hands. For further				
	specification, refer to section 8 of the SDS. [ESCom-11133171457 ESCom-				
	17297180800 ESCom-12355				
	Additional good practice ad	vice. Obligations according t	to Article 37(4) of REACH do		
	not apply.				
	Ensure no splashing occurs	during transfer. [ESCom-161	173221409]		
	If repeated and/or prolonge	d skin exposure to the subs	tance is likely, then wear		
	suitable gloves tested to EN	374. Provide employee with	n skin care programmes.		
	[ESCom-16354145601 ESCom-15193135615]				
Mixing operations; Open					
systems (PROC_5)	11133171412]		-		
	Wear chemically resistant g	loves (tested to EN374) in co	ombination with 'basic'		
	employee training. If skin contamination is expected to extend to other parts of				
	the body, then these body parts should also be protected with impervious				
	garments in a manner equivalent to those described for the hands. For further				
	specification, refer to section 8 of the SDS. [ESCom-11133171457 ESCom-				
	17297180800 ESCom-12355002165]				
	Additional good practice ad		to Article 37(4) of REACH do		
	not apply.				
	If repeated and/or prolonge	d skin exposure to the subs	tance is likely, then wear		
	in repeated and/or profolige	a skill exposule to the Subs	tance is likely, then wear		



S.P.A.						
REVISION I - 23/01/2023	REPLACES REVISION H - 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON BEHALF OF: ALMA PETROLI S.p.A.			
I	suitable gloves tested to EN374. Provide employee with skin care programmes.					
	[ESCom-16354145601 ESCom-		th skin care programmes.			
Manual; Transfer	Use drum pumps. [ESCom-111					
from/pouring from	Wear chemically resistant glov	-	combination with 'basic'			
containers; Non-	employee training. If skin conta					
dedicated facility	the body, then these body part					
(PROC_8a)	garments in a manner equivale		-			
(FROC_66)						
	specification, refer to section 8 of the SDS. [ESCom-11133171457 ESCom-					
	17297180800 ESCom-12355002165]					
	Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.					
	Ensure no splashing occurs dur	ing transfer. [ESCom-16	5173221409]			
	If repeated and/or prolonged s	-	_			
	suitable gloves tested to EN374					
	[ESCom-16354145601 ESCom-					
Drum/batch transfers;	Wear chemically resistant glov		combination with 'basic'			
Dedicated facility	employee training. If skin conta					
(PROC_8b)	the body, then these body part					
(garments in a manner equivale	-	-			
	specification, refer to section 8					
	17297180800 ESCom-1235500					
	Additional good practice advice	-	to Article 37(4) of REACH do			
	not apply.		() ()			
	Ensure no splashing occurs dur	ing transfer. [ESCom-16	5173221409]			
	If repeated and/or prolonged s		_			
	suitable gloves tested to EN374		-			
	[ESCom-16354145601 ESCom-					
Tabletting, compression,	Wear suitable gloves tested to	EN374. If skin contamir	nation is expected to extend			
extrusion or pelletisation	to other parts of the body, the	n these body parts shou	Ild also be protected with			
(PROC_14)	impervious garments in a manner equivalent to those described for the hands. For					
	further specification, refer to section 8 of the SDS. [ESCom-10133224896 ESCom-					
	17297180800 ESCom-1235500	2165]				
	Additional good practice advice	e. Obligations according	to Article 37(4) of REACH do			
	not apply.					
	If repeated and/or prolonged skin exposure to the substance is likely, th		stance is likely, then wear			
	suitable gloves tested to EN374	1. Provide employee wit	th skin care programmes.			
	[ESCom-16354145601 ESCom-	15193135615]				
Drum and small package	Wear suitable gloves tested to	EN374. If skin contamir	nation is expected to extend			
filling (PROC_9)	to other parts of the body, the	n these body parts shou	Id also be protected with			
	impervious garments in a man					
	further specification, refer to s		Com-10133224896 ESCom-			
	17297180800 ESCom-1235500	-				
	Additional good practice advice	e. Obligations according	to Article 37(4) of REACH do			
	not apply.					
	If repeated and/or prolonged s		-			
	suitable gloves tested to EN374		th skin care programmes.			
	[ESCom-16354145601 ESCom-	-				
Equipment cleaning and	a, [ESCom-11133171413]					
maintenance (PROC_8a,						
PRUC_28)	PROC_28) Wear chemically resistant gloves (tested to EN374) in combination with 'basi					
employee training. If skin contamination is expected to extend to other p the body, then these body parts should also be protected with imperviou						
	-					
	garments in a manner equivale	int to those described for	or the nanos. For further			



S.P.A. REVISION I - 23/01/2023	REPLACES REVISION H - 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON BEHALF OF: ALMA PETROLI S.p.A.		
1					
	•	ion 8 of the SDS. [ESCom-111	.33171457 ESCom-		
	17297180800 ESCom-12355002165]				
	Additional good practice advice. Obligations according to Article 37(4) of REA				
	not apply. Wear suitable coveralls to prevent exposure to the skin. [ESCom-111331714				
	Clear spills immediately. [ESCom-9267230103]				
	If repeated and/or prolonged skin exposure to the substance is likely, then we				
		N374. Provide employee with			
	[ESCom-16354145601 ESC				
Storage (PROC_2,	_2, Store substance within a closed system. [ESCom-11133171437]				
PROC_1)	Additional good practice advice. Obligations according to Article 37(4) of REACH				
	not apply.				
	If repeated and/or prolong	ged skin exposure to the subs	stance is likely, then wear		
	_	N374. Provide employee wit	h skin care programmes.		
	[ESCom-16354145601 ESC	com-15193135615]			
Section 2.2 Control of envir	ronmental exposure				
Product characteristics					
	. [ESCom-11133171600] Pred	ominantly hydrophobic. [ESC	om-11133171601]		
Amounts used					
Fraction of EU tonnage used	-		0,1		
Regional use tonnage (tonn			6,6E+04		
Fraction of Regional tonnag	-		4,5E-01		
Annual site tonnage (tonnes/year)			3,0E+04		
Maximum daily site tonnage	1,0E+05				
Frequency and duration of					
Continuous release. [ESCom	ו-10133212701]				
Emission days (days/year)			300		
	influenced by risk manageme	nt			
Local freshwater dilution fa			10		
Local marine water dilution			100		
	nditions affecting environme		5 05 02		
	process (after typical onsite R	(MINIS, consistent with EU	5,0E-03		
Solvent Emissions Directive	-	co prior to DNANA)	8 05 06		
	ater from process (initial relea		8,0E-06 0.0001		
	n process (initial release prior neasures at process level (sou	•	0:0001		
	oss sites thus conservative pro		[ESCom_10122220220]		
	and measures to reduce or li				
	posure is driven by freshwate				
	olved substance to or recover		Com-10133221223]		
	ewage treatment plant, no on				
	e a typical removal efficiency		0,0E+00		
	rior to receiving water dischar		91,6		
removal efficiency >= (%)		8-, p			
	ewage treatment plant, provid	de the required onsite	0,0		
wastewater removal efficie					
	prevent/limit release from sit	e			
	ge to natural soils. [ESCom-10		e incinerated, contained or		
reclaimed. [ESCom-1013322					
	elated to municipal sewage ti	reatment plant			
Not applicable as there is no	o release to wastewater. [ESC	om-10133222100]			
Estimated substance remov	al from wastewater via dome	stic sewage treatment (%)	92,5		



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

Total efficiency of rem		I - 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON	BEHALF OF: ALMA PETROLI S.p.A.
-	noval from wastewater	after onsite a	nd offsite (domestic		92,5
treatment plant) RMM					
		sed on releas	e following total wastewater	r	1,1E+05
treatment removal (kg			-		
Assumed domestic sev	wage treatment plant f	low (m3/d)			2,0E+03
Conditions and measu	ures related to externa	l treatment o	f waste for disposal		
External treatment an	d disposal of waste sho	ould comply w	vith applicable local and/or n	atior	nal regulations.
[ESCom-10133222903	-				
	ures related to externa				
-		uld comply wi	th applicable local and/or na	ation	al regulations.
[ESCom-10133223500	-				
Section 3 Exposure Es	timation				
3.1. Health					
	has been used to estim	ate workplace	e exposures unless otherwise	e ind	icated.
3.2. Environment			·		
[ESCom-11133171701		ed to calculate	e environmental exposure w	ith tr	ie PETRORISK model.
Section 4 Guidance to	check compliance wit	h the Exposu	re Scenario		
4.1. Health	•				
Predicted exposures a	re not expected to exc	eed the DN(N	I)EL when the risk managem	ent n	neasures/operational
-	-		other risk management mea		-
conditions are adopte	d, then users should er	nsure that risk	s are managed to at least eq	quival	ent levels.; Available
hazard data do not en	able the derivation of a	a DNEL for asp	piration effects.; Risk manage	emen	it measures are based
on qualitative risk cha	racterisation. [ESCom-:	11133171315	; ESCom-10133224709; ESCc	om-16	6354132600; ESCom-
11133171322]					
	exposures; Closed syst	tems (PROC 2			
Route of exposure					
and turns of offerste	Assessment entity		, PROC1; PROC 3) oncentration		Risk quantification
and type of effects	-	Exposure co	oncentration	6	
Inhalation,	Assessment entity Vapour 10-500 Pa	Exposure co		6	Risk quantification Final RCR = 0.022
Inhalation, systemic,	-	Exposure co	oncentration	6	
Inhalation,	Vapour 10-500 Pa	Exposure co	oncentration n ³ (TRA Workers) RCR = 0.010		
Inhalation, systemic,	Vapour 10-500 Pa Vapour 500-10.000	Exposure co	oncentration		
Inhalation, systemic,	Vapour 10-500 Pa Vapour 500-10.000 Pa	Exposure co 0.268 mg/n 0.09 mg/m ³	oncentration n ³ (TRA Workers) RCR = 0.010 ³ (TRA Workers) RCR = 5.49E	-3	
Inhalation, systemic,	Vapour 10-500 Pa Vapour 500-10.000	Exposure co 0.268 mg/n 0.09 mg/m ³	oncentration n ³ (TRA Workers) RCR = 0.010	-3	
Inhalation, systemic, long term	Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure co 0.268 mg/n 0.09 mg/m ³ 8.77E-3 mg 4	oncentration n ³ (TRA Workers) RCR = 0.010 ³ (TRA Workers) RCR = 5.49E /m ³ (TRA Workers) RCR = 5.3	-3 35E-	Final RCR = 0.022
Inhalation, systemic, long term Inhalation,	Vapour 10-500 Pa Vapour 500-10.000 Pa	Exposure co 0.268 mg/n 0.09 mg/m ³ 8.77E-3 mg 4	oncentration n ³ (TRA Workers) RCR = 0.010 ³ (TRA Workers) RCR = 5.49E	-3 35E-	
Inhalation, systemic, long term Inhalation, systemic,	Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure co 0.268 mg/n 0.09 mg/m ³ 8.77E-3 mg 4	oncentration n ³ (TRA Workers) RCR = 0.010 ³ (TRA Workers) RCR = 5.49E /m ³ (TRA Workers) RCR = 5.3	-3 35E-	Final RCR = 0.022
Inhalation, systemic, long term Inhalation,	Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa	Exposure co 0.268 mg/n 0.09 mg/m ³ 8.77E-3 mg 4 1.071 mg/n	oncentration n ³ (TRA Workers) RCR = 0.010 ³ (TRA Workers) RCR = 5.49E /m ³ (TRA Workers) RCR = 5.3 n ³ (TRA Workers) RCR = 7.14	-3 35E- E-4	Final RCR = 0.022
Inhalation, systemic, long term Inhalation, systemic,	Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure co 0.268 mg/n 0.09 mg/m ³ 8.77E-3 mg 4 1.071 mg/n	oncentration n ³ (TRA Workers) RCR = 0.010 ³ (TRA Workers) RCR = 5.49E /m ³ (TRA Workers) RCR = 5.3	-3 35E- E-4	Final RCR = 0.022
Inhalation, systemic, long term Inhalation, systemic,	Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 500-10.000	Exposure co 0.268 mg/n 0.09 mg/m ³ 8.77E-3 mg 4 1.071 mg/n 0.36 mg/m ³	oncentration n ³ (TRA Workers) RCR = 0.010 ³ (TRA Workers) RCR = 5.49E /m ³ (TRA Workers) RCR = 5.3 n ³ (TRA Workers) RCR = 7.14	-3 35E- E-4	Final RCR = 0.022
Inhalation, systemic, long term Inhalation, systemic, acute	Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa	Exposure co 0.268 mg/m 0.09 mg/m ³ 8.77E-3 mg 4 1.071 mg/m 0.36 mg/m ³ 0.035 mg/m	oncentration n ³ (TRA Workers) RCR = 0.016 ³ (TRA Workers) RCR = 5.49E /m ³ (TRA Workers) RCR = 5.3 n ³ (TRA Workers) RCR = 7.14 ³ (TRA Workers) RCR = 2.4E-4	-3 35E- E-4 4 E-5	Final RCR = 0.022
Inhalation, systemic, long term Inhalation, systemic,	Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure co 0.268 mg/m 0.09 mg/m ³ 8.77E-3 mg 4 1.071 mg/m 0.36 mg/m ³ 0.035 mg/m	oncentration n ³ (TRA Workers) RCR = 0.010 ³ (TRA Workers) RCR = 5.49E /m ³ (TRA Workers) RCR = 5.3 n ³ (TRA Workers) RCR = 7.140 ³ (TRA Workers) RCR = 2.4E-4 n ³ (TRA Workers) RCR = 2.340	-3 35E- E-4 4 E-5	Final RCR = 0.022
Inhalation, systemic, long term Inhalation, systemic, acute Dermal, systemic,	Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure co 0.268 mg/m 0.09 mg/m ³ 8.77E-3 mg 4 1.071 mg/m 0.36 mg/m ³ 0.035 mg/m 1.37 mg/kg	oncentration n ³ (TRA Workers) RCR = 0.010 ³ (TRA Workers) RCR = 5.49E /m ³ (TRA Workers) RCR = 5.3 n ³ (TRA Workers) RCR = 7.140 ³ (TRA Workers) RCR = 2.4E-4 n ³ (TRA Workers) RCR = 2.340	-3 35E- E-4 4 E-5	Final RCR = 0.022
Inhalation, systemic, long term Inhalation, systemic, acute Dermal, systemic, long term	Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure co 0.268 mg/m 0.09 mg/m ³ 8.77E-3 mg 4 1.071 mg/m 0.36 mg/m ³ 0.035 mg/m 1.37 mg/kg	oncentration n ³ (TRA Workers) RCR = 0.010 ³ (TRA Workers) RCR = 5.49E /m ³ (TRA Workers) RCR = 5.3 n ³ (TRA Workers) RCR = 7.140 ³ (TRA Workers) RCR = 2.4E-4 n ³ (TRA Workers) RCR = 2.340	-3 35E- E-4 4 E-5	Final RCR = 0.022 Final RCR < 0.01 Final RCR = 0.471
Inhalation, systemic, long term Inhalation, systemic, acute Dermal, systemic, long term Combined routes,	Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure co 0.268 mg/m 0.09 mg/m ³ 8.77E-3 mg 4 1.071 mg/m 0.36 mg/m ³ 0.035 mg/m 1.37 mg/kg	oncentration n ³ (TRA Workers) RCR = 0.010 ³ (TRA Workers) RCR = 5.49E /m ³ (TRA Workers) RCR = 5.3 n ³ (TRA Workers) RCR = 7.140 ³ (TRA Workers) RCR = 2.4E-4 n ³ (TRA Workers) RCR = 2.340	-3 35E- E-4 4 E-5	Final RCR = 0.022 Final RCR < 0.01 Final RCR = 0.471
Inhalation, systemic, long term Inhalation, systemic, acute Dermal, systemic, long term Combined routes,	Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure co 0.268 mg/m 0.09 mg/m ³ 8.77E-3 mg 4 1.071 mg/m 0.36 mg/m ³ 0.035 mg/m 1.37 mg/kg	oncentration n ³ (TRA Workers) RCR = 0.010 ³ (TRA Workers) RCR = 5.49E /m ³ (TRA Workers) RCR = 5.3 n ³ (TRA Workers) RCR = 7.140 ³ (TRA Workers) RCR = 2.4E-4 n ³ (TRA Workers) RCR = 2.340	-3 35E- E-4 4 E-5	Final RCR = 0.022 Final RCR < 0.01 Final RCR = 0.471

Worker CS 2: General exposures; Open systems (PROC 4)



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic,	Aerosol	4.798 mg/m ³ (TRA Workers) RCR = 0.293	Final RCR = 0.398
long term	Vapour 10-500 Pa	1.339 mg/m ³ (TRA Workers) RCR = 0.082	-
	Vapour 500-10.000 Pa	0.36 mg/m ³ (TRA Workers) RCR = 0.022	-
	Vapour >10.000 Pa	0.035 mg/m ³ (TRA Workers) RCR = 2.14E-3	
Inhalation, systemic, acute	Aerosol	19.19 mg/m ³ (TRA Workers) RCR = 0.013	Final RCR = 0.017
	Vapour 10-500 Pa	5.355 mg/m ³ (TRA Workers) RCR = 3.57E-3	-
	Vapour 500-10.000 Pa	1.442 mg/m ³ (TRA Workers) RCR = 9.61E-4	
	Vapour >10.000 Pa	0.14 mg/m ³ (TRA Workers) RCR = 9.35E-5	
Dermal, systemic, long term	Dermal	1.372 mg/kg bw/day (TRA Workers) RCR = 0.472	Final RCR = 0.472
Combined routes, systemic, long-term			Final RCR = 0.87
Combined routes, systemic, acute			Final RCR = 0.017
Worker CS 3: Batch p Route of exposure	rocess; Elevated tempe Assessment entity	erature; Use in contained systems (PROC 3) Exposure concentration	Risk quantification
and type of effects			
Inhalation, systemic, long term	Vapour 10-500 Pa	0.326 mg/m ³ (TRA Workers) RCR = 0.02	Final RCR = 0.025
5	Vapour 500-10.000 Pa	0.072 mg/m ³ (TRA Workers) RCR = 4.4E-3	
	Vapour >10.000 Pa	0.012 mg/m ³ (TRA Workers) RCR = 7.49E-4	
Inhalation,	Vapour 10-500 Pa	1.305 mg/m ³ (TRA Workers) RCR = 8.7E-4	Final RCR < 0.01
systemic, acute			
-	Vapour 500-10.000 Pa	0.288 mg/m ³ (TRA Workers) RCR = 1.92E-4	
-		0.288 mg/m ³ (TRA Workers) RCR = 1.92E-4 0.049 mg/m ³ (TRA Workers) RCR = 3.27E-5	-
acute Combined routes,	Ра		Final RCR = 0.025
acute Combined routes, systemic, long-term Combined routes,	Ра		Final RCR = 0.025 Final RCR < 0.01
acute Combined routes, systemic, long-term	Ра		
acute Combined routes, systemic, long-term Combined routes,	Pa Vapour >10.000 Pa		



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

	Vapour >10.000 Pa	0.07 mg/m ³ (TRA Workers) RCR = 4.28E-3	
Inhalation,	Aerosol	19.19 mg/m ³ (TRA Workers) RCR = 0.013	Final RCR = 0.019
systemic,			
acute			
	Vapour 10-500 Pa	5.355 mg/m ³ (TRA Workers) RCR = 3.57E-3	
	Vapour 500-10.000	3.604 mg/m ³ (TRA Workers) RCR = 2.4E-3	
	Ра		
	Vapour >10.000 Pa	0.281 mg/m ³ (TRA Workers) RCR = 1.87E-4	
Dermal, systemic,	Dermal	1.372 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.472
long term		0.472	
Combined routes,			Final RCR = 0.905
systemic, long-term			
Combined routes,			Final RCR = 0.019
systemic, acute			
Worker CS 5: Laborat	ory activities (PROC 15)	
Route of exposure	Assessment entity	Exposure concentration	Risk quantification
and type of effects			
Inhalation,	Aerosol	0.48 mg/m ³ (TRA Workers) RCR = 0.029	Final RCR = 0.123
systemic,			
long term			
	Vapour 10-500 Pa	1.339 mg/m ³ (TRA Workers) RCR = 0.082	
	Vapour 500-10.000	0.18 mg/m ³ (TRA Workers) RCR = 0.011	
	Ра		
	Vapour >10.000 Pa	0.018 mg/m ³ (TRA Workers) RCR = 1.07E-3	
Inhalation,	Aerosol	1.919 mg/m ³ (TRA Workers) RCR = 1.28E-3	Final RCR < 0.01
systemic,			
acute			_
	Vapour 10-500 Pa	5.355 mg/m ³ (TRA Workers) RCR = 3.57E-3	
	Vapour 500-10.000	0.721 mg/m ³ (TRA Workers) RCR = 4.8E-4	
	Pa		-
<u> </u>	Vapour >10.000 Pa	0.07 mg/m^3 (TRA Workers) RCR = 4.68E-5	5. 1000 0.447
Dermal, systemic,	Dermal	0.34 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.117
long term		0.117	Final PCP = 0.24
Combined routes,			Final RCR = 0.24
systemic, long-term Combined routes,			Final RCR < 0.01
systemic, acute			
	1	1	I
	insfers; Dedicated facili		
Route of exposure	Assessment entity	Exposure concentration	Risk quantification
and type of effects			
Inhalation,	Vapour 10-500 Pa	1.339 mg/m ³ (TRA Workers) RCR = 0.082	Final RCR = 0.112
systemic,			
long term	Vanaur 500, 40,000	0.451 mg/m3/TDA M/arkarch DCD 0.027	4
	Vapour 500-10.000	0.451 mg/m ³ (TRA Workers) RCR = 0.027	
	Pa	$0.052 \text{ mg/m}^3 (TRA) Markara) RCR = 2.245.2$	4
Inhalation	Vapour >10.000 Pa	0.053 mg/m^3 (TRA Workers) RCR = 3.21E-3	Einal BCB < 0.01
Inhalation,	Vapour 10-500 Pa	5.355 mg/m ³ (TRA Workers) RCR = 3.57E-3	Final RCR < 0.01
systemic, acute			
	Vapour 500-10.000	1.802 mg/m ³ (TRA Workers) RCR = 1.2E-3	4
		1.002 mg/m (mA workers) kek = 1.21-5	1



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

	Ра		
	Vapour >10.000 Pa	0.211 mg/m ³ (TRA Workers) RCR = 1.4E-4	-
Dermal, systemic, long term	Dermal	1.371 mg/kg bw/day (TRA Workers) RCR = 0.471	Final RCR = 0.471
Combined routes, systemic, long-term	-		Final RCR = 0.583
Combined routes,			Final RCR < 0.01
systemic, acute			
Worker CS 7: Mixing	operations; Open syste	ms (PROC 5)	
Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Aerosol	0.48 mg/m ³ (TRA Workers) RCR = 0.029	Final RCR = 0.043
	Vapour 10-500 Pa	0.134 mg/m ³ (TRA Workers) RCR = 8.16E-3	
	Vapour 500-10.000 Pa	0.09 mg/m ³ (TRA Workers) RCR = 5.49E-3	
	Vapour >10.000 Pa	8.77E-3 mg/m ³ (TRA Workers) RCR = 5.35E- 4	
Inhalation, systemic, acute	Aerosol	1.919 mg/m ³ (TRA Workers) RCR = 1.28E-3	Final RCR < 0.01
	Vapour 10-500 Pa	0.535 mg/m ³ (TRA Workers) RCR = 3.57E-4	-
	Vapour 500-10.000 Pa	0.36 mg/m ³ (TRA Workers) RCR = 2.4E-4	
	Vapour >10.000 Pa	0.035 mg/m ³ (TRA Workers) RCR = 2.34E-5	
Dermal, systemic, long term	Dermal	1.371 mg/kg bw/day (TRA Workers) RCR = 0.471	Final RCR = 0.471
Combined routes, systemic, long-term			Final RCR = 0.515
Combined routes, systemic, acute	-		Final RCR < 0.01
	I: Transfor from /nourin	g from containers; Non-dedicated facility (PRC	
		Exposure concentration	Risk quantification
Inhalation, systemic,	Aerosol	0.48 mg/m ³ (TRA Workers) RCR = 0.029	Final RCR = 0.052
long term			
	Vapour 10-500 Pa	0.268 mg/m ³ (TRA Workers) RCR = 0.016	-
•	Vapour 10-500 Pa Vapour 500-10.000 Pa	0.268 mg/m ³ (TRA Workers) RCR = 0.016 0.09 mg/m ³ (TRA Workers) RCR = 5.49E-3	-
	Vapour 500-10.000		
•	Vapour 500-10.000 Pa	0.09 mg/m ³ (TRA Workers) RCR = 5.49E-3 8.77E-3 mg/m ³ (TRA Workers) RCR = 5.35E-	Final RCR < 0.01
long term Inhalation, systemic,	Vapour 500-10.000 Pa Vapour >10.000 Pa	0.09 mg/m ³ (TRA Workers) RCR = 5.49E-3 8.77E-3 mg/m ³ (TRA Workers) RCR = 5.35E- 4	Final RCR < 0.01
long term Inhalation, systemic,	Vapour 500-10.000 Pa Vapour >10.000 Pa Aerosol	0.09 mg/m ³ (TRA Workers) RCR = 5.49E-3 8.77E-3 mg/m ³ (TRA Workers) RCR = 5.35E- 4 1.919 mg/m ³ (TRA Workers) RCR = 1.28E-3	Final RCR < 0.01



GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

EVISION I - 23/01/2023	REPLACES REVISION F	H - 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON BEHALF OF: ALMA PETROLI S.p
Dermal, systemic, long term	Dermal	1.371 mg/ 0.471	kg bw/day (TRA Workers) RC	CR = Final RCR = 0.471
Combined routes,		0.471		Final RCR = 0.523
systemic, long-term Combined routes,				Final RCR < 0.01
systemic, acute				
Worker CS 9: Drum/b Route of exposure	atch transfers; Dedicat Assessment entity		ROC 8b) concentration	Risk quantification
and type of effects	Assessment entry	LAPOSUIC	oncentration	
Inhalation,	Aerosol	0.96 mg/m	1 ³ (TRA Workers) RCR = 0.059	9 Final RCR = 0.171
systemic, long term	Vapour 10-500 Pa		m ³ (TRA Workers) RCR = 0.08	
.,	Vapour 500-10.000 Pa	-	m^3 (TRA Workers) RCR = 0.02	
	Vapour >10.000 Pa	0.052 mg/	m ³ (TRA Workers) RCR = 3.22	15.2
Inhalation, systemic, acute	Aerosol		m ³ (TRA Workers) RCR = 2.56	
	Vapour 10-500 Pa	5.355 mg/	m ³ (TRA Workers) RCR = 3.57	7E-3
	Vapour 500-10.000 Pa	-	m ³ (TRA Workers) RCR = 1.21	
	Vapour >10.000 Pa	0 211 mg/	m ³ (TRA Workers) RCR = 1.4	F-4
Dermal, systemic,	Dermal	1.371 mg/	kg bw/day (TRA Workers) RC	
long term Combined routes, systemic, long-term		0.471		Final RCR = 0.642
Combined routes, systemic, acute				Final RCR < 0.01
			(220044)	
Route of exposure	ting, compression, extr Assessment entity	-	concentration	Risk quantification
and type of effects				
Inhalation, systemic, long term	Vapour 10-500 Pa	1.339 mg/	m³ (TRA Workers) RCR = 0.08	82 Final RCR = 0.142
	Vapour 500-10.000 Pa	0.901 mg/	m ³ (TRA Workers) RCR = 0.09	55
	Vapour >10.000 Pa	0.088 mg/	m ³ (TRA Workers) RCR = 5.3	5E-3
Inhalation, systemic, acute	Vapour 10-500 Pa		m ³ (TRA Workers) RCR = 3.57	
	Vapour 500-10.000 Pa	3.604 mg/	m³ (TRA Workers) RCR = 2.4I	E-3
	Vapour >10.000 Pa	0.351 mg/	m ³ (TRA Workers) RCR = 2.34	4E-4
Dermal, systemic, long term	Dermal	0.686 mg/ 0.236	kg bw/day (TRA Workers) RC	CR = Final RCR = 0.236
Combined routes,				Final RCR = 0.378
systemic, long-term				

Worker CS 11: Drum and small package filling (PROC 9)



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

Route of exposure	Assessment entity	Exposure concentration	Risk quantification
and type of effects			
Inhalation,	Aerosol	4.798 mg/m ³ (TRA Workers) RCR = 0.293	Final RCR = 0.433
systemic,			
long term			
	Vapour 10-500 Pa	1.339 mg/m ³ (TRA Workers) RCR = 0.082	
	Vapour 500-10.000	0.901 mg/m ³ (TRA Workers) RCR = 0.055	
	Pa		-
	Vapour >10.000 Pa	0.07 mg/m ³ (TRA Workers) RCR = 4.28E-3	
Inhalation,	Aerosol	19.19 mg/m ³ (TRA Workers) RCR = 0.013	Final RCR = 0.019
systemic,			
acute	10 500 D		-
	Vapour 10-500 Pa	5.355 mg/m^3 (TRA Workers) RCR = $3.57E-3$	4
	Vapour 500-10.000	3.604 mg/m ³ (TRA Workers) RCR = 2.4E-3	
	Pa		4
Dama da su da d	Vapour >10.000 Pa	0.281 mg/m ³ (TRA Workers) RCR = 1.87E-4	
Dermal, systemic,	Dermal	1.372 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.472
long term		0.472	5' LDCD 0.005
Combined routes,			Final RCR = 0.905
systemic, long-term			5. 1000 0.010
Combined routes, systemic, acute			Final RCR = 0.019
Worker CS 12: Equipr	ment cleaning and mair	ntenance (DROC 8a DROC 28)	
		ntenance (PROC 8a, PROC 28)	Risk quantification
Route of exposure	nent cleaning and main Assessment entity	ntenance (PROC 8a, PROC 28) Exposure concentration	Risk quantification
Route of exposure and type of effects	Assessment entity	Exposure concentration	-
Route of exposure and type of effects Inhalation,	Assessment entity Vapour 10-500 Pa	Exposure concentration 2.678 mg/m ³ (TRA Workers) RCR = 0.163	Risk quantification Final RCR = 0.224
Route of exposure and type of effects Inhalation,	Assessment entity Vapour 10-500 Pa Vapour 500-10.000	Exposure concentration	-
Route of exposure and type of effects Inhalation,	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa	Exposure concentration2.678 mg/m³ (TRA Workers) RCR = 0.1630.901 mg/m³ (TRA Workers) RCR = 0.055	-
Route of exposure and type of effects Inhalation, systemic, long term	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure concentration 2.678 mg/m³ (TRA Workers) RCR = 0.163 0.901 mg/m³ (TRA Workers) RCR = 0.055 0.088 mg/m³ (TRA Workers) RCR = 5.35E-3	Final RCR = 0.224
Route of exposure and type of effects Inhalation, systemic, long term Inhalation,	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa	Exposure concentration2.678 mg/m³ (TRA Workers) RCR = 0.1630.901 mg/m³ (TRA Workers) RCR = 0.055	-
Route of exposure and type of effects Inhalation, systemic, long term	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour >10.000 Pa	Exposure concentration 2.678 mg/m³ (TRA Workers) RCR = 0.163 0.901 mg/m³ (TRA Workers) RCR = 0.055 0.088 mg/m³ (TRA Workers) RCR = 5.35E-3 10.71 mg/m³ (TRA Workers) RCR = 7.14E-3	Final RCR = 0.224
Route of exposure and type of effects Inhalation, systemic, long term Inhalation,	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure concentration 2.678 mg/m³ (TRA Workers) RCR = 0.163 0.901 mg/m³ (TRA Workers) RCR = 0.055 0.088 mg/m³ (TRA Workers) RCR = 5.35E-3	Final RCR = 0.224
Route of exposure and type of effects Inhalation, systemic, long term Inhalation,	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa	Exposure concentration 2.678 mg/m³ (TRA Workers) RCR = 0.163 0.901 mg/m³ (TRA Workers) RCR = 0.055 0.088 mg/m³ (TRA Workers) RCR = 5.35E-3 10.71 mg/m³ (TRA Workers) RCR = 7.14E-3 3.604 mg/m³ (TRA Workers) RCR = 2.4E-3	Final RCR = 0.224
Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic, acute	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour 500-10.000 Pa	Exposure concentration 2.678 mg/m³ (TRA Workers) RCR = 0.163 0.901 mg/m³ (TRA Workers) RCR = 0.055 0.088 mg/m³ (TRA Workers) RCR = 5.35E-3 10.71 mg/m³ (TRA Workers) RCR = 7.14E-3 3.604 mg/m³ (TRA Workers) RCR = 2.4E-3 0.351 mg/m³ (TRA Workers) RCR = 2.34E-4	Final RCR = 0.224 Final RCR < 0.01
Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic, acute Dermal, systemic,	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa	Exposure concentration 2.678 mg/m³ (TRA Workers) RCR = 0.163 0.901 mg/m³ (TRA Workers) RCR = 0.055 0.088 mg/m³ (TRA Workers) RCR = 5.35E-3 10.71 mg/m³ (TRA Workers) RCR = 7.14E-3 3.604 mg/m³ (TRA Workers) RCR = 2.4E-3	Final RCR = 0.224
Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic, acute Dermal, systemic, long term	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour 500-10.000 Pa	Exposure concentration 2.678 mg/m³ (TRA Workers) RCR = 0.163 0.901 mg/m³ (TRA Workers) RCR = 0.055 0.088 mg/m³ (TRA Workers) RCR = 5.35E-3 10.71 mg/m³ (TRA Workers) RCR = 7.14E-3 3.604 mg/m³ (TRA Workers) RCR = 2.4E-3 0.351 mg/m³ (TRA Workers) RCR = 2.34E-4 1.371 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.224 Final RCR < 0.01 Final RCR = 0.471
Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic, acute Dermal, systemic, long term Combined routes,	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour 500-10.000 Pa	Exposure concentration 2.678 mg/m³ (TRA Workers) RCR = 0.163 0.901 mg/m³ (TRA Workers) RCR = 0.055 0.088 mg/m³ (TRA Workers) RCR = 5.35E-3 10.71 mg/m³ (TRA Workers) RCR = 7.14E-3 3.604 mg/m³ (TRA Workers) RCR = 2.4E-3 0.351 mg/m³ (TRA Workers) RCR = 2.34E-4 1.371 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.224 Final RCR < 0.01
Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic, acute	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour 500-10.000 Pa	Exposure concentration 2.678 mg/m³ (TRA Workers) RCR = 0.163 0.901 mg/m³ (TRA Workers) RCR = 0.055 0.088 mg/m³ (TRA Workers) RCR = 5.35E-3 10.71 mg/m³ (TRA Workers) RCR = 7.14E-3 3.604 mg/m³ (TRA Workers) RCR = 2.4E-3 0.351 mg/m³ (TRA Workers) RCR = 2.34E-4 1.371 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.224 Final RCR < 0.01 Final RCR = 0.471

Route of exposure	Assessment entity	Exposure concentration	Risk quantification
and type of effects			
Inhalation, systemic, long term	Vapour 10-500 Pa	0.268 mg/m ³ (TRA Workers) RCR = 0.016	Final RCR = 0.022
	Vapour 500-10.000 Pa	0.09 mg/m ³ (TRA Workers) RCR = 5.49E-3	



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

	Vapour >10.000 Pa	8.77E-3 mg/m ³ (TRA Workers) RCR = 5.35E- 4	
Inhalation, systemic, acute	Vapour 10-500 Pa	1.071 mg/m ³ (TRA Workers) RCR = 7.14E-4	Final RCR < 0.01
	Vapour 500-10.000 Pa	0.36 mg/m ³ (TRA Workers) RCR = 2.4E-4	
	Vapour >10.000 Pa	0.035 mg/m ³ (TRA Workers) RCR = 2.34E-5	
Dermal, systemic, long term	Dermal	1.37 mg/kg bw/day (TRA Workers) RCR = 0.471	Final RCR = 0.471
Combined routes, systemic, long-term			Final RCR = 0.493
Combined routes, systemic, acute			Final RCR < 0.01
4.2. Environment		·	
necessary to define an removal efficiency for combination. [ESCom- technologies, either a	opropriate site-specific wastewater can be ach -10133223601] Require lone or in combination.	ditions which may not be applicable to all sites risk management measures. [ESCom-1013322 nieved using onsite/offsite technologies, either ed removal efficiency for air can be achieved us [ESCom-10133223602] Further details on scal t (http://cefic.org/en/reach-for-industries-libra	3600] Required alone or in sing onsite ing and control
	terisation Ratio for Air	Emissions RCRair	2,4E-02
		stewater Emissions RCRwater	8.8E-01



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

01b - Use as an intermediate

Section 1			
Title			
01b - Use as an intermediate			
Use Descriptor			
Sector(s) of Use		8, 9	
Process Categories		1, 2, 3, 4, 8a, 8b, 9, 15, 28	
Environmental Release Cate	gories	ба	
Specific Environmental Relea	ase Category	ESVOC SpERC 6.1a. v1	
Processes, tasks, activities c	overed		
Use of substance as an inter	mediate (not related to Strictly	Controlled Conditions). Includes recycling/ recovery,	
_		activities, maintenance and loading (including marine	
vessel/barge, road/rail car a	nd bulk container).		
Assessment Method			
See Section 3.			
-	tions and risk management me	easures	
Section 2.1 Control of worke	er exposure		
Product characteristics	1		
Physical form of product	Liquid		
Vapour pressure		kPa at Standard Temperature and Pressure With ion [ESCom-11133171333 ESCom-11133171301]	
Concentration of	Covers percentage substance	e in the product up to 100 %. (unless stated differently	
substance in product) [ESCom-11133171310 ESCom-18309152101 ESCom-16173221408 ESCom- 18309152200]		
Frequency and duration		8 hours (unless stated differently) [ESCom-	
of use/exposure		152101 ESCom-16173221408 ESCom-18309152200]	
Other Operational	Assumes a good basic standard of occupational hygiene is implemented [ESCom-		
Conditions affecting	11133171303]		
exposure	Covers use at ambient temperatures. (unless stated differently) [ESCom-		
	10133224959 ESCom-18309	152101 ESCom-16173221408 ESCom-18309152200]	
Contributing Scenarios		Neasures and Operating Conditions	
General measures	applicable if classified as H22	24 or H225 or H226, refer to section 2 of the SDS; For	
(flammability) [ESCom-		m physicochemical properties, refer to main body of	
19350151900]	the SDS, section 7 and/or 8.		
General measures	applicable if classified as H304, refer to section 2 of the SDS; Do not ingest. If		
(aspiration hazard)	swallowed then seek immed		
General exposures;		osed system. [ESCom-11133171405]	
Closed systems (PROC_2,		other system to avoid exposure. [ESCom-	
PROC_1, PROC_3)	11133171361]		
		ice. Obligations according to Article 37(4) of REACH do	
	not apply.	d a blian ann an an an an an an an an ta blian ta an an an	
		d skin exposure to the substance is likely, then wear	
	_	374. Provide employee with skin care programmes.	
General exposures; Open	[ESCom-16354145601 ESCor	to EN374. If skin contamination is expected to extend	
systems (PROC_4)	-	hen these body parts should also be protected with	
Systems (FRUC_4)		anner equivalent to those described for the hands. For	
		section 8 of the SDS. [ESCom-10133224896 ESCom-	
	17297180800 ESCom-12355		
		ice. Obligations according to Article 37(4) of REACH do	
	not apply.		
		d skin exposure to the substance is likely, then wear	



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

	suitable gloves tested to EN374. Provide employee with skin care programmes.
	[ESCom-16354145601 ESCom-15193135615]
Process sampling (PROC_9)	Wear suitable gloves tested to EN374. If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands. For further specification, refer to section 8 of the SDS. [ESCom-10133224896 ESCom- 17297180800 ESCom-12355002165] Additional good practice advice. Obligations according to Article 37(4) of REACH do
	not apply. If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374. Provide employee with skin care programmes. [ESCom-16354145601 ESCom-15193135615]
Laboratory activities (PROC_15)	No other specific measures identified. [ESCom-11133171454] Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Put lids on containers immediately after use. [ESCom-9267230301] If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374. Provide employee with skin care programmes. [ESCom-16354145601 ESCom-15193135615]
Bulk transfers; Closed	Handle substance within a closed system. [ESCom-11133171405]
systems (PROC_8b)	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands. For further specification, refer to section 8 of the SDS. [ESCom-11133171457 ESCom- 17297180800 ESCom-12355002165]
	Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374. Provide employee with skin care programmes. [ESCom-16354145601 ESCom-15193135615]
Bulk transfers; Open systems (PROC_8b)	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands. For further specification, refer to section 8 of the SDS. [ESCom-11133171457 ESCom- 17297180800 ESCom-12355002165] Additional good practice advice. Obligations according to Article 37(4) of REACH do
	not apply. Ensure no splashing occurs during transfer. [ESCom-16173221409] If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374. Provide employee with skin care programmes. [ESCom-16354145601 ESCom-15193135615]
Equipment cleaning and maintenance (PROC_8a, PROC_28)	Drain down and flush system prior to equipment break-in or maintenance. [ESCom-11133171413] Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands. For further specification, refer to section 8 of the SDS. [ESCom-11133171457 ESCom- 17297180800 ESCom-12355002165] Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.



Storage (PROC_2, PROC_1) Section 2.2 Control of enviro Product characteristics Substance is complex UVCB. Amounts used Fraction of EU tonnage used	Clear spills immediately. [E If repeated and/or prolong suitable gloves tested to E [ESCom-16354145601 ESC Store substance within a c Additional good practice a not apply. If repeated and/or prolong suitable gloves tested to E [ESCom-16354145601 ESC onmental exposure [ESCom-11133171600] Predo in region es/year) e used locally	ged skin exposure to the subst N374. Provide employee with om-15193135615] losed system. [ESCom-111331 dvice. Obligations according to ged skin exposure to the subst N374. Provide employee with	ance is likely, then wear skin care programmes. 71437] o Article 37(4) of REACH do ance is likely, then wear skin care programmes. m-11133171601] 0,1
PROC_1) Section 2.2 Control of enviro Product characteristics Substance is complex UVCB. Amounts used	Clear spills immediately. [E If repeated and/or prolong suitable gloves tested to E [ESCom-16354145601 ESC Store substance within a c Additional good practice a not apply. If repeated and/or prolong suitable gloves tested to E [ESCom-16354145601 ESC onmental exposure [ESCom-11133171600] Predo in region es/year) e used locally	SCom-9267230103] ged skin exposure to the subst N374. Provide employee with om-15193135615] losed system. [ESCom-111331 dvice. Obligations according to ged skin exposure to the subst N374. Provide employee with om-15193135615]	ance is likely, then wear skin care programmes. 71437] o Article 37(4) of REACH do ance is likely, then wear skin care programmes. m-11133171601] 0,1
PROC_1) Section 2.2 Control of enviro Product characteristics Substance is complex UVCB. Amounts used	Additional good practice a not apply. If repeated and/or prolong suitable gloves tested to E [ESCom-16354145601 ESC onmental exposure [ESCom-11133171600] Predo in region es/year) e used locally	dvice. Obligations according to ged skin exposure to the subst N374. Provide employee with com-15193135615]	o Article 37(4) of REACH do ance is likely, then wear skin care programmes. m-11133171601] 0,1
Section 2.2 Control of enviro Product characteristics Substance is complex UVCB. Amounts used	not apply. If repeated and/or prolong suitable gloves tested to E [ESCom-16354145601 ESC pnmental exposure [ESCom-11133171600] Prede in region es/year) e used locally	ged skin exposure to the subst N374. Provide employee with om-15193135615]	ance is likely, then wear skin care programmes. m-11133171601] 0,1
Product characteristics Substance is complex UVCB. Amounts used	If repeated and/or prolong suitable gloves tested to E [ESCom-16354145601 ESC onmental exposure [ESCom-11133171600] Predo in region es/year) e used locally	N374. Provide employee with om-15193135615]	skin care programmes. m-11133171601]
Product characteristics Substance is complex UVCB. Amounts used	[ESCom-11133171600] Predo in region es/year) e used locally	ominantly hydrophobic. [ESCo	0,1
Substance is complex UVCB. Amounts used	in region es/year) e used locally	ominantly hydrophobic. [ESCo	0,1
Amounts used	in region es/year) e used locally	ominantly hydrophobic. [ESCo	0,1
	e used locally		
Eraction of EU tonnage used	e used locally		
Traction of Eo torninge abea	e used locally		
Regional use tonnage (tonne	-		6,0E+05
Fraction of Regional tonnage	/vear)		2,5E-02
Annual site tonnage (tonnes/	,,,		1,5E+04
Maximum daily site tonnage	(kg/day)		5,0E+04
Frequency and duration of u	ISE		·
Continuous release. [ESCom-	-10133212701]		
Emission days (days/year)			300
Environmental factors not in	nfluenced by risk manageme	nt	
Local freshwater dilution fact	· · ·		10
Local marine water dilution f	factor		100
Other given operational con	ditions affecting environme	ntal exposure	
Release fraction to air from p			1,0E-04
Release fraction to wastewat			1,5E-05
Release fraction to soil from		•	0.001
Technical conditions and me	· · ·	,	
		ocess release estimates used. [ESCom-10133220229]
	•	mit discharges, air emissions	
Risk from environmental exp			
		from onsite wastewater. [ESC	om-10133221223]
-		site wastewater treatment red	
Treat air emission to provide			8,0E+01
Treat onsite wastewater (pric	or to receiving water dischar	ge) to provide the required	91,0
removal efficiency >= (%)			
If discharging to domestic sev	wage treatment plant, provid	de the required onsite	0,0
wastewater removal efficient	cy of >= (%)		
Organisation measures to pr	revent/limit release from site	e	
Do not apply industrial sludge	e to natural soils. [ESCom-10	133221228] Sludge should be	incinerated, contained or
reclaimed. [ESCom-10133221			
Conditions and measures rel			
Not applicable as there is no			
Estimated substance remova	al from wastewater via domes	stic sewage treatment (%)	92,5
Total efficiency of removal fro treatment plant) RMMs (%)	rom wastewater after onsite	and offsite (domestic	92,5
Maximum allowable site toni treatment removal (kg/d)	nage (MSafe) based on releas	se following total wastewater	6,0E+04

in compliance with EC Regulation no. 1907/2006 and s.m.i

ALMA PETROLI

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

Assumed domestic sewage treatment plant flow (m3/d)

2,0E+03

Conditions and measures related to external treatment of waste for disposal This substance is consumed during use and no waste of the substance is generated. [ESCom-10133223502]

Conditions and measures related to external recovery of waste

This substance is consumed during use and no waste of the substance is generated. [ESCom-10133223502] **Section 3 Exposure Estimation**

3.1. Health

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

3.2. Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the PETRORISK model. [ESCom-11133171701]

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.; 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 aspiration effects.; Risk management measures are based on qualitative risk characterisation. [ESCom-11133171315; ESCom-10133224709; ESCom-16354132600; ESCom-11133171322]

Worker CS 1: General exposures; Closed systems (PROC 2, PROC 1; PROC 3)

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	ic,		Final RCR = 0.022
	Vapour 500-10.000 Pa	0.09 mg/m ³ (TRA Workers) RCR = 5.49E-3	
	Vapour >10.000 Pa	8.77E-3 mg/m ³ (TRA Workers) RCR = 5.35E- 4	
Inhalation, systemic, acute	Vapour 10-500 Pa	1.071 mg/m ³ (TRA Workers) RCR = 7.14E-4	Final RCR < 0.01
	Vapour 500-10.000 Pa	0.36 mg/m ³ (TRA Workers) RCR = 2.4E-4	
	Vapour >10.000 Pa	0.035 mg/m ³ (TRA Workers) RCR = 2.34E-5	
Dermal, systemic, long term	Dermal	1.37 mg/kg bw/day (TRA Workers) RCR = 0.471	Final RCR = 0.471
Combined routes, systemic, long-term			Final RCR = 0.493
Combined routes, systemic, acute			Final RCR < 0.01

Worker CS 2: General exposures; Open systems (PROC 4)

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Aerosol	4.798 mg/m ³ (TRA Workers) RCR = 0.293	Final RCR = 0.398
	Vapour 10-500 Pa	1.339 mg/m ³ (TRA Workers) RCR = 0.082	
	Vapour 500-10.000	0.36 mg/m ³ (TRA Workers) RCR = 0.022	
	Ра		



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

	Vapour >10.000 Pa	0.035 mg/m ³ (TRA Workers) RCR = 2.14E-3	1
Inhalation,	Aerosol	19.19 mg/m ³ (TRA Workers) RCR = 0.013	Final RCR = 0.017
systemic,			
acute			
	Vapour 10-500 Pa	5.355 mg/m ³ (TRA Workers) RCR = 3.57E-3	
	Vapour 500-10.000	1.442 mg/m ³ (TRA Workers) RCR = 9.61E-4	
	Pa		
	Vapour >10.000 Pa	0.14 mg/m ³ (TRA Workers) RCR = 9.35E-5	
Dermal, systemic,	Dermal	1.372 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.472
long term		0.472	
Combined routes,			Final RCR = 0.87
systemic, long-term			
Combined routes,			Final RCR = 0.017
systemic, acute			
Warker CS 2: Dresses	compling (PROC 0)		
Worker CS 3: Process Route of exposure	Assessment entity	Exposure concentration	Risk quantification
and type of effects			
Inhalation,	Aerosol	4.798 mg/m ³ (TRA Workers) RCR = 0.293	Final RCR = 0.433
systemic, long term	Vapour 10-500 Pa	1.339 mg/m ³ (TRA Workers) RCR = 0.082	
	Vapour 500-10.000	0.901 mg/m ³ (TRA Workers) RCR = 0.055	
	Pa		
	Vapour >10.000 Pa	0.07 mg/m ³ (TRA Workers)	
		RCR = 4.28E-3	
Inhalation,	Aerosol	19.19 mg/m ³ (TRA Workers) RCR = 0.013	Final RCR = 0.019
systemic,			
acute			
	Vapour 10-500 Pa	5.355 mg/m ³ (TRA Workers) RCR = 3.57E-3	
	Vapour 500-10.000	3.604 mg/m ³ (TRA Workers) RCR = 2.4E-3	
	Ра		
	Vapour >10.000 Pa	0.281 mg/m ³ (TRA Workers) RCR = 1.87E-4	
Dermal, systemic,	Dermal	1.372 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.472
long term		0.472	
Combined routes,			Final RCR = 0.905
systemic, long-term			
Combined routes,			Final RCR = 0.019
systemic, acute			
Worker CS 4: Laborat	ory activities (PROC 15)	
Route of exposure	Assessment entity	Exposure concentration	Risk quantification
and type of effects			
Inhalation,	Aerosol	0.48 mg/m ³ (TRA Workers) RCR = 0.029	Final RCR = 0.123
systemic, long term	Vapour 10-500 Pa	1.339 mg/m ³ (TRA Workers) RCR = 0.082	
-	Vapour 500-10.000	0.18 mg/m ³ (TRA Workers) RCR = 0.011	1
	Pa		
	Vapour >10.000 Pa	0.018 mg/m ³ (TRA Workers) RCR = 1.07E-3	1
Inhalation,	Aerosol	1.919 mg/m ³ (TRA Workers) RCR = 1.28E-3	Final RCR < 0.01
systemic, acute	Vapour 10-500 Pa	5.355 mg/m ³ (TRA Workers) RCR = 3.57E-3	1
	Vapour 500-10.000	0.721 mg/m ³ (TRA Workers) RCR = 4.8E-4	1
	Pa		



S.P.A. EVISION I - 23/01/2023	REPLACES REVISION H	H - 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON BEHALF OF: ALMA PETROLI S.p.
Dermal, systemic, long term	Dermal	0.34 mg/kg RCR = 0.11	g bw/day (TRA Workers) 7	Final RCR = 0.117
Combined routes, systemic, long-term			•	Final RCR = 0.24
Combined routes, systemic, acute				Final RCR < 0.01
	nsfers; Closed systems			I
Route of exposure	Assessment entity	1	oncentration	Risk quantification
and type of effects				
Inhalation, systemic, long term	Vapour 10-500 Pa	1.339 mg/r	n ³ (TRA Workers) RCR = 0.08	Final RCR = 0.112
	Vapour 500-10.000 Pa	0.451 mg/r	n ³ (TRA Workers) RCR = 0.02	27
	Vapour >10.000 Pa	0.053 mg/r	m ³ (TRA Workers) RCR = 3.21	.E-3
Inhalation, systemic, acute	Vapour 10-500 Pa		n ³ (TRA Workers) RCR = 3.57	
	Vapour 500-10.000 Pa	1.802 mg/r	n ³ (TRA Workers) RCR = 1.2E	-3
	Vapour >10.000 Pa	0.211 mg/r	m ³ (TRA Workers) RCR = 1.4E	-4
Dermal, systemic, long term	Dermal	1.371 mg/k 0.471	g bw/day (TRA Workers) RC	R = Final RCR = 0.471
Combined routes, systemic, long-term				Final RCR = 0.583
Combined routes, systemic, acute				Final RCR < 0.01
	nsfers; Open systems (
Route of exposure and type of effects	Assessment entity		oncentration	Risk quantification
Inhalation,	Aerosol	0.96 mg/m	³ (TRA Workers) RCR = 0.059	Final RCR = 0.171
systemic, long term	Vapour 10-500 Pa	1.339 mg/r	m³ (TRA Workers) RCR = 0.08	32
	Vapour 500-10.000 Pa	0.451 mg/r	n ³ (TRA Workers) RCR = 0.02	27
	Vapour >10.000 Pa		m ³ (TRA Workers) RCR = 3.21	
Inhalation, systemic, acute	Aerosol	3.838 mg/r	n³ (TRA Workers) RCR = 2.56	5E-3 Final RCR < 0.01
	Vapour 10-500 Pa	5.355 mg/r	m³ (TRA Workers) RCR = 3.57	'E-3
	Vapour 500-10.000 Pa	1.802 mg/r	m ³ (TRA Workers) RCR = 1.2E	-3
	Vapour >10.000 Pa	0.211 mg/r	m³ (TRA Workers) RCR = 1.4E	-4
Dermal, systemic, long term	Dermal	1.371 mg/k 0.471	g bw/day (TRA Workers) RC	R = Final RCR = 0.471
Combined routes,				Final RCR = 0.642
systemic, long-term		ļ		
Combined routes,				Final RCR < 0.01



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

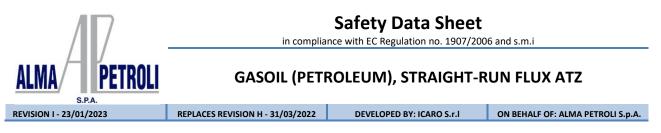
REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Vapour 10-500 Pa	2.678 mg/m ³ (TRA Workers) RCR = 0.163	Final RCR = 0.224
U	Vapour 500-10.000 Pa	0.901 mg/m ³ (TRA Workers) RCR = 0.055	
	Vapour >10.000 Pa	0.088 mg/m ³ (TRA Workers) RCR = 5.35E-3	
Inhalation, systemic, acute	Vapour 10-500 Pa	10.71 mg/m ³ (TRA Workers) RCR = 7.14E-3	Final RCR < 0.01
	Vapour 500-10.000 Pa	3.604 mg/m ³ (TRA Workers) RCR = 2.4E-3	
	Vapour >10.000 Pa	0.351 mg/m ³ (TRA Workers) RCR = 2.34E-4	
Dermal, systemic, long term	Dermal	1.371 mg/kg bw/day (TRA Workers) RCR = 0.471	Final RCR = 0.471
Combined routes, systemic, long-term			Final RCR = 0.695
Combined routes, systemic, acute			Final RCR < 0.01
Worker CS 8: Storage	e (PROC 2, PROC 1)		
Doute of our course	A	Fun annual componituation	Risk quantification
Route of exposure and type of effects	Assessment entity	Exposure concentration	
and type of effects Inhalation, systemic,	Vapour 10-500 Pa	0.268 mg/m ³ (TRA Workers) RCR = 0.016	Final RCR = 0.022
and type of effects Inhalation,	-	-	
and type of effects Inhalation, systemic,	Vapour 10-500 Pa Vapour 500-10.000	0.268 mg/m ³ (TRA Workers) RCR = 0.016	
and type of effects Inhalation, systemic,	Vapour 10-500 Pa Vapour 500-10.000 Pa	0.268 mg/m ³ (TRA Workers) RCR = 0.016 0.09 mg/m ³ (TRA Workers) RCR = 5.49E-3	
and type of effects Inhalation, systemic, long term Inhalation, systemic,	Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	0.268 mg/m ³ (TRA Workers) RCR = 0.016 0.09 mg/m ³ (TRA Workers) RCR = 5.49E-3 8.77E-3 mg/m ³ (TRA Workers) RCR = 5.35E- 4	Final RCR = 0.022
and type of effects Inhalation, systemic, long term Inhalation, systemic,	Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 10-500 Pa Vapour 500-10.000	0.268 mg/m ³ (TRA Workers) RCR = 0.016 0.09 mg/m ³ (TRA Workers) RCR = 5.49E-3 8.77E-3 mg/m ³ (TRA Workers) RCR = 5.35E- 4 1.071 mg/m ³ (TRA Workers) RCR = 7.14E-4	Final RCR = 0.022
and type of effects Inhalation, systemic, long term Inhalation, systemic, acute	Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa	0.268 mg/m ³ (TRA Workers) RCR = 0.016 0.09 mg/m ³ (TRA Workers) RCR = 5.49E-3 8.77E-3 mg/m ³ (TRA Workers) RCR = 5.35E- 4 1.071 mg/m ³ (TRA Workers) RCR = 7.14E-4 0.36 mg/m ³ (TRA Workers) RCR = 2.4E-4	Final RCR = 0.022
and type of effects Inhalation, systemic, long term Inhalation, systemic, acute Dermal, systemic, long term Combined routes,	Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour 500-10.000 Pa Vapour 500-10.000 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	0.268 mg/m ³ (TRA Workers) RCR = 0.016 0.09 mg/m ³ (TRA Workers) RCR = 5.49E-3 8.77E-3 mg/m ³ (TRA Workers) RCR = 5.35E- 4 1.071 mg/m ³ (TRA Workers) RCR = 7.14E-4 0.36 mg/m ³ (TRA Workers) RCR = 2.4E-4 0.035 mg/m ³ (TRA Workers) RCR = 2.34E-5 1.37 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.022 Final RCR < 0.01
and type of effects Inhalation, systemic, long term Inhalation, systemic, acute Dermal, systemic, long term	Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour 500-10.000 Pa Vapour 500-10.000 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	0.268 mg/m ³ (TRA Workers) RCR = 0.016 0.09 mg/m ³ (TRA Workers) RCR = 5.49E-3 8.77E-3 mg/m ³ (TRA Workers) RCR = 5.35E- 4 1.071 mg/m ³ (TRA Workers) RCR = 7.14E-4 0.36 mg/m ³ (TRA Workers) RCR = 2.4E-4 0.035 mg/m ³ (TRA Workers) RCR = 2.34E-5 1.37 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.022 Final RCR < 0.01 Final RCR = 0.471

removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. [ESCom-10133223601] Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. [ESCom-10133223602] Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). [ESCom-10133223603]



Maximum Risk Characterisation Ratio for Air Emissions RCRair	9,9E-04
Maximum Risk Characterisation Ratio for Wastewater Emissions RCRwater	8,3E-01

in compliance with EC Regulation no. 1907/2006 and s.m.i



GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

05a - Use in oil and gas field drilling and production operations; Industrial

Section 1	
Title	
05a - Use in oil and gas field drilling a	nd production operations; Industrial
Use Descriptor	
Sector(s) of Use	
Process Categories	1, 2, 3, 4, 8a, 8b, 9, 28
Environmental Release Categories	4
Specific Environmental Release	QUALITATIVE ASSESSMENT FOR ENVIRONMENT
Category	
Processes, tasks, activities covered	
Oil field well drilling and production of	perations (including drilling muds and well cleaning) including material
transfers, on-site formulation, well he	ead operations, shaker room activities and related maintenance.
Assessment Method	
See Section 3.	
Section 2 Operational conditions and	risk management measures
Section 2.1 Control of worker exposu	ire
Product characteristics	
Physical form of product	Liquid
Vapour pressure	Liquid, vapour pressure < 0.5 kPa at Standard Temperature and Pressure
	With potential for aerosol generation [ESCom-11133171333 ESCom-
	11133171301]
Concentration of substance in	Covers percentage substance in the product up to 100 %. (unless stated
product	differently) [ESCom-11133171310 ESCom-18309152101 ESCom-
	16173221408 ESCom-18309152200]
Frequency and duration of	Covers daily exposures up to 8 hours (unless stated differently) [ESCom-
use/exposure	11133171304 ESCom-18309152101 ESCom-16173221408 ESCom-
	18309152200]
Other Operational Conditions	Assumes a good basic standard of occupational hygiene is implemented
affecting exposure	[ESCom-11133171303]
	Covers use at ambient temperatures. (unless stated differently) [ESCom-
	10133224959 ESCom-18309152101 ESCom-16173221408 ESCom-
	18309152200]
Contributing Scenarios	Specific Risk Management Measures and Operating Conditions
General measures (flammability)	applicable if classified as H224 or H225 or H226, refer to section 2 of the
[ESCom-19350151900]	SDS; For measures to control risks from physicochemical properties, refer
	to main body of the SDS, section 7 and/or 8. []
General measures (aspiration hazard)	applicable if classified as H304, refer to section 2 of the SDS; Do not ingest. If swallowed then seek immediate medical assistance. []
Bulk transfers; Dedicated facility	Handle substance within a closed system. [ESCom-11133171405]
(PROC_8b)	Wear chemically resistant gloves (tested to EN374) in combination with
(FROC_80)	'basic' employee training. If skin contamination is expected to extend to
	other parts of the body, then these body parts should also be protected
	with impervious garments in a manner equivalent to those described for
	the hands. For further specification, refer to section 8 of the SDS. [ESCom-
	11133171457 ESCom-17297180800 ESCom-12355002165]
	Additional good practice advice. Obligations according to Article 37(4) of
	REACH do not apply.
	If repeated and/or prolonged skin exposure to the substance is likely,
	then wear suitable gloves tested to EN374. Provide employee with skin
	care programmes. [ESCom-16354145601 ESCom-15193135615]



REVISION I - 23/01/2023	REPLACES I	REVISION H - 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON BEHALF OF: ALMA PETROLI S.p.A.		
or containers; Dedicated fa	Filling of equipment from drums or containers; Dedicated facility		Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. If skin contamination is expected to extend to			
(PROC_8b)		other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for				
		11133171457 ES	rther specification, refer to se Com-17297180800 ESCom-123	355002165]		
		REACH do not ap				
			ng occurs during transfer. [ES or prolonged skin exposure to			
			e gloves tested to EN374. Pro . [ESCom-16354145601 ESCo			
Drilling mud (re-)formulation	on; Use		within a closed system. [ESCo			
in contained batch process (PROC 3)			practice advice. Obligations ac	_		
(-	r prolonged skin exposure to	the substance is likely,		
		then wear suitab	e gloves tested to EN374. Pro . [ESCom-16354145601 ESCo	vide employee with skin		
Drill floor operations (PROC	<u> </u>		resistant gloves (tested to EN			
		-				
		'basic' employee training. If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected				
			arments in a manner equivale			
		the hands. For further specification, refer to section 8 of the SDS. [ESCom-				
		11133171457 ESCom-17297180800 ESCom-12355002165]				
		Additional good practice advice. Obligations according to Article 37(4) of				
		REACH do not apply.				
		If repeated and/or prolonged skin exposure to the substance is likely,				
		then wear suitable gloves tested to EN374. Provide employee with skin care programmes. [ESCom-16354145601 ESCom-15193135615]				
	_					
Operation of solids filtering equipment; Elevated temp		11133171427]	ation with a properly sited rec			
(PROC_4)		Assumes process temperature up to 60.0 °C [ESCom-12355002161] Additional good practice advice. Obligations according to Article 37(4) of				
		REACH do not ap	oly.			
		-	r prolonged skin exposure to			
			e gloves tested to EN374. Pro			
			. [ESCom-16354145601 ESCo			
Cleaning of solids filtering equipment; Non-dedicated	facility		resistant gloves (tested to EN training. If skin contamination			
(PROC_8a)	Tacility		body, then these body parts	-		
(1100_00)			garments in a manner equivale	-		
			rther specification, refer to se			
			Com-17297180800 ESCom-123	_		
		Additional good p	practice advice. Obligations ac	_		
		REACH do not ap		the chin [ECCorr		
		Wear suitable co 11133171468]	veralls to prevent exposure to	the skin. [ESCOM-		
		-	diately. [ESCom-9267230103]			
			r prolonged skin exposure to	-		
			e gloves tested to EN374. Pro			
		care programmes	. [ESCom-16354145601 ESCo	m-15193135615]		



REVISION I - 23/01/2023	REPLACES F	REVISION H - 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON BEHALF OF: ALMA PETROLI S.p.A.	
Treatment and disposal of filtered solids; Use in contained systems (PROC_3)		Handle substance within a closed system. [ESCom-11133171405] Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374. Provide employee with skin care programmes. [ESCom-16354145601 ESCom-15193135615]			
Process sampling (PROC_9)		Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands. For further specification, refer to section 8 of the SDS. [ESCom- 11133171457 ESCom-17297180800 ESCom-12355002165] Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374. Provide employee with skin care programmes. [ESCom-16354145601 ESCom-15193135615]			
General exposures; Closed systems (PROC_2, PROC_1)		Handle substance Sample via a clos 11133171361] Additional good p REACH do not ap If repeated and/o then wear suitab	e within a closed system. [ESC ed loop or other system to ave practice advice. Obligations ac	om-11133171405] oid exposure. [ESCom- cording to Article 37(4) of the substance is likely, vide employee with skin	
Pouring from small containers; Non-dedicated facility (PROC_8a) General exposures; Open systems (PROC_4)		'basic' employee other parts of the with impervious a the hands. For fu 11133171457 ESG Additional good p REACH do not ap Ensure no splash If repeated and/o then wear suitab	resistant gloves (tested to EN training. If skin contamination body, then these body parts garments in a manner equivale rther specification, refer to se Com-17297180800 ESCom-122 practice advice. Obligations ac ply. ing occurs during transfer. [ES or prolonged skin exposure to le gloves tested to EN374. Pro s. [ESCom-16354145601 ESCon	n is expected to extend to should also be protected ent to those described for ction 8 of the SDS. [ESCom- 355002165] cording to Article 37(4) of Com-16173221409] the substance is likely, vide employee with skin	
		'basic' employee other parts of the with impervious g the hands. For fu 11133171457 ESG Additional good g REACH do not ap If repeated and/o then wear suitab	resistant gloves (tested to EN training. If skin contamination body, then these body parts garments in a manner equivale rther specification, refer to se Com-17297180800 ESCom-12: practice advice. Obligations ac ply. or prolonged skin exposure to le gloves tested to EN374. Pro s. [ESCom-16354145601 ESCom	n is expected to extend to should also be protected ent to those described for ction 8 of the SDS. [ESCom- 355002165] cording to Article 37(4) of the substance is likely, vide employee with skin	
Equipment cleaning and maintenance (PROC_8a, PR	OC_28)	Drain down and f maintenance. [ES Wear chemically 'basic' employee	lush system prior to equipme Com-11133171413] resistant gloves (tested to EN training. If skin contaminatior body, then these body parts	nt break-in or 374) in combination with n is expected to extend to	



S.P.A. REVISION I - 23/01/2023	REPLACES REVISION H - 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON BEHALF OF: ALMA PETROLI S.p.A.	
Storage (PROC_2, PROC_1)	the hands. For f 11133171457 E Additional good REACH do not a Wear suitable c 11133171468] Clear spills imm If repeated and then wear suita care programm	with impervious garments in a manner equivalent to those described for the hands. For further specification, refer to section 8 of the SDS. [ESCom- 11133171457 ESCom-17297180800 ESCom-12355002165] Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply. Wear suitable coveralls to prevent exposure to the skin. [ESCom- 11133171468] Clear spills immediately. [ESCom-9267230103] If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374. Provide employee with skin care programmes. [ESCom-16354145601 ESCom-15193135615] Store substance within a closed system. [ESCom-11133171437]		
	Additional good REACH do not a If repeated and, then wear suita	practice advice. Obligations ad	cording to Article 37(4) of the substance is likely, ovide employee with skin	
Section 2.2 Control of envir		23. [E3com 10354145001 E3co		
Product characteristics				
	[FSCom-11133171600] Pre	dominantly hydrophobic. [ESC	om-111331716011	
Amounts used	.[2000]11001,1000]110			
Fraction of EU tonnage use	d in 1,0			
region	_,_			
Regional use tonnage	1,7E+04			
(tonnes/year)				
Fraction of Regional tonnag locally	e used N/A			
Annual site tonnage (tonne				
Maximum daily site tonnag	e N/A			
(kg/day)				
Frequency and duration of				
Emission days (days/year)	N/A			
	influenced by risk managen	nent		
Local freshwater dilution fa				
Local marine water dilution				
	nditions affecting environm	ental exposure		
Release fraction to air from process (initial release prior RMM)	'			
Release fraction to wastews from process (initial release to RMM)	prior			
Technical conditions and m	easures at process level (so	urce) to prevent release		
		ion 4.2.). [ESCom-1013322023		
		limit discharges, air emissions	s and releases to soil	
Treat air emission to provid				
typical removal efficiency o				
Treat onsite wastewater (pl receiving water discharge) to provide the required remove	:0			
efficiency >= (%)				



REVISION I - 23/01/2023	REPLACES	REVISION H - 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON BEHALF OF: ALMA PETROLI S.p.A.					
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >= (%)									
Organisation measures to prevent/limit release from site									
Prevent environmenta	Prevent environmental discharge consistent with regulatory requirements. [ESCom-10133221230]								
Conditions and measures related to municipal sewage treatment plant									
Total efficiency of rem wastewater after onsit offsite (domestic treat RMMs (%)									
Maximum allowable si	te tonnage	N/A							
(MSafe) based on relea									
following total wastew									
treatment removal (kg									
Assumed domestic sev		N/A							
treatment plant flow (•	,							
Conditions and measu		external treatment	of waste for disposal						
			with applicable local and/or r	ational regulations					
			sposed according to local and	0					
Conditions and measu			·						
			vith applicable local and/or na	ational regulations					
-			-injected according to local a	-					
Section 3 Exposure Est									
3.1. Health									
		to octimate workpla	co ovposuros uplass othorwis	aindicated					
	las been used	to estimate workpia	ce exposures unless otherwis	e indicated.					
3.2. Environment									
-		•	lue to lack of emissions to aqu						
			e use. [ESCom-10133223510]						
Section 4 Guidance to	спеск сотрпа	nce with the Expos	ure Scenario						
4.1. Health									
Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented.; Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.; Available hazard data do not enable the derivation of a DNEL for aspiration effects.; Risk management measures are based on qualitative risk characterisation. [ESCom-11133171315; ESCom-10133224709; ESCom-16354132600; ESCom-11133171322] Worker CS 1: Bulk transfers; Dedicated facility (PROC 8b)									
Route of exposure	Assessment e		concentration	Risk quantification					
and type of effects									
Inhalation,	Vapour 10-50	0 Pa 1.339 mg/	⁷ m ³ (TRA Workers) RCR = 0.08	2 Final RCR = 0.112					
systemic,			. ,						
long term									
	Vapour 500-1 Pa	0.000 0.451 mg/	['] m ³ (TRA Workers) RCR = 0.02	7					
	Vapour >10.0	00 Pa 0.053 mg/	⁷ m ³ (TRA Workers) RCR = 3.21	E-3					
Inhalation, systemic, acute	Vapour 10-50	0 Pa 5.355 mg/	⁷ m ³ (TRA Workers) RCR = 3.57	E-3 Final RCR < 0.01					
	Vapour 500-1 Pa	0.000 1.802 mg/	⁷ m ³ (TRA Workers) RCR = 1.2E	-3					



S.P.A. REVISION I - 23/01/2023	REPLACES REVISION H	I - 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON BEHALF OF: ALMA PETROLI S.p.A
	N/	0.244 /	3 (TDA) A () DOD 4 45	
Demost sustantia	Vapour >10.000 Pa	-	m ³ (TRA Workers) RCR = 1.4E	
Dermal, systemic, long term	Dermal	0.471 mg/	kg bw/day (TRA Workers) RCF	R = Final RCR = 0.471
Combined routes,				Final RCR = 0.583
systemic, long-term				
Combined routes,				Final RCR < 0.01
systemic, acute				
Worker CS 2: Filling o	f equipment from drur	ns or contair	ners; Dedicated facility (PROC	C 8b)
Route of exposure	Assessment entity	1	concentration	Risk quantification
and type of effects				
Inhalation, systemic, long term	Aerosol	0.96 mg/n	1 ³ (TRA Workers) RCR = 0.059	Final RCR = 0.171
	Vapour 10-500 Pa	1.339 mg/	m ³ (TRA Workers) RCR = 0.08	2
	Vapour 500-10.000	-	m ³ (TRA Workers) RCR = 0.02	
	Pa			
	Vapour >10.000 Pa	0.053 mg/	m ³ (TRA Workers) RCR = 3.21	E-3
Inhalation,	Aerosol	-	m ³ (TRA Workers) RCR = 2.56	
systemic, acute				
	Vapour 10-500 Pa	5.355 mg/	m ³ (TRA Workers) RCR = 3.57	E-3
	Vapour 500-10.000 Pa	1.802 mg/	m ³ (TRA Workers) RCR = 1.2E	-3
	Vapour >10.000 Pa	0.211 mg/	m ³ (TRA Workers) RCR = 1.4E	-4
Dermal, systemic,	Dermal	-	kg bw/day (TRA Workers) RCF	
long term		0.471		
Combined routes,				Final RCR = 0.642
systemic, long-term				
Combined routes,				Final RCR < 0.01
systemic, acute				
Worker CS 3: Drilling	mud (re-)formulation:	Use in conta	ined batch processes (PROC	3)
	Assessment entity			Risk quantification
and type of effects		•		
Inhalation,	Vapour 10-500 Pa	0.803 mg/	m ³ (TRA Workers) RCR = 0.04	9 Final RCR = 0.061
systemic,		_		
long term				
	Vapour 500-10.000 Pa	0.18 mg/n	1 ³ (TRA Workers) RCR = 0.011	
	Vapour >10.000 Pa	0.018 mg/	m ³ (TRA Workers) RCR = 1.07	E-3
Inhalation,	Vapour 10-500 Pa	3.213 mg/	m ³ (TRA Workers) RCR = 2.14	E-3 Final RCR < 0.01
systemic,				
acute				
	Vapour 500-10.000 Pa	0.721 mg/	m³ (TRA Workers) RCR = 4.8E	-4
	Vapour >10.000 Pa	0.07 mg/m	n ³ (TRA Workers) RCR = 4.68E	-5
Dermal, systemic,	Dermal	-	g bw/day (TRA Workers) RCR	
long term		0.237		
Combined routes,				Final RCR = 0.298
systemic, long-term				

in compliance with EC Regulation no. 1907/2006 and s.m.i



GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

Combined routes, systemic, acute			Final RCR < 0.01
systemic, deute		1	I
	or operations (PROC 4)		
Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation,	Aerosol	4.798 mg/m ³ (TRA Workers) RCR = 0.293	Final RCR = 0.398
systemic, long term			
	Vapour 10-500 Pa	1.339 mg/m ³ (TRA Workers) RCR = 0.082	
	Vapour 500-10.000 Pa	0.36 mg/m ³ (TRA Workers) RCR = 0.022	
	Vapour >10.000 Pa	0.035 mg/m ³ (TRA Workers) RCR = 2.14E-3	
Inhalation, systemic, acute	Aerosol	19.19 mg/m ³ (TRA Workers) RCR = 0.013	Final RCR = 0.017
	Vapour 10-500 Pa	5.355 mg/m ³ (TRA Workers) RCR = 3.57E-3	
	Vapour 500-10.000 Pa	1.442 mg/m ³ (TRA Workers) RCR = 9.61E-4	
	Vapour >10.000 Pa	0.14 mg/m ³ (TRA Workers) RCR = 9.35E-5	
Dermal, systemic, long term	Dermal	0.686 mg/kg bw/day (TRA Workers) RCR = 0.236	Final RCR = 0.236
Combined routes,			Final RCR = 0.634
systemic, long-term			
Combined routes,			Final RCR = 0.017
systemic, acute			
systemic, acute Worker CS 5: Operati		uipment; Elevated temperature (PROC 4)	
systemic, acute	ion of solids filtering eq Assessment entity	uipment; Elevated temperature (PROC 4) Exposure concentration	
systemic, acute Worker CS 5: Operati Route of exposure and type of effects Inhalation,			
systemic, acute Worker CS 5: Operati Route of exposure and type of effects	Assessment entity Aerosol Vapour 10-500 Pa	Exposure concentration 0.418 mg/m ³ (TRA Workers) RCR = 0.025 0.544 mg/m ³ (TRA Workers) RCR = 0.033	Risk quantification
systemic, acute Worker CS 5: Operati Route of exposure and type of effects Inhalation,	Assessment entity Aerosol	Exposure concentration 0.418 mg/m ³ (TRA Workers) RCR = 0.025	Risk quantification
systemic, acute Worker CS 5: Operati Route of exposure and type of effects Inhalation,	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa	Exposure concentration 0.418 mg/m³ (TRA Workers) RCR = 0.025 0.544 mg/m³ (TRA Workers) RCR = 0.033 0.144 mg/m³ (TRA Workers) RCR = 8.79E-3	Risk quantification
systemic, acute Worker CS 5: Operati Route of exposure and type of effects Inhalation,	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000	Exposure concentration0.418 mg/m³ (TRA Workers) RCR = 0.0250.544 mg/m³ (TRA Workers) RCR = 0.0330.144 mg/m³ (TRA Workers)	Risk quantification
systemic, acute Worker CS 5: Operati Route of exposure and type of effects Inhalation,	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa	Exposure concentration 0.418 mg/m³ (TRA Workers) RCR = 0.025 0.544 mg/m³ (TRA Workers) RCR = 0.033 0.144 mg/m³ (TRA Workers) RCR = 8.79E-3	Risk quantification
systemic, acute Worker CS 5: Operati Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic,	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure concentration 0.418 mg/m³ (TRA Workers) RCR = 0.025 0.544 mg/m³ (TRA Workers) RCR = 0.033 0.144 mg/m³ (TRA Workers) RCR = 8.79E-3 0.025 mg/m³ (TRA Workers) RCR = 1.5E-3	Risk quantification Final RCR = 0.069
systemic, acute Worker CS 5: Operati Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic,	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Aerosol	Exposure concentration 0.418 mg/m³ (TRA Workers) RCR = 0.025 0.544 mg/m³ (TRA Workers) RCR = 0.033 0.144 mg/m³ (TRA Workers) RCR = 8.79E-3 0.025 mg/m³ (TRA Workers) RCR = 1.5E-3 1.671 mg/m³ (TRA Workers) RCR = 1.11E-3	Risk quantification Final RCR = 0.069
systemic, acute Worker CS 5: Operati Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic,	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Aerosol Vapour 10-500 Pa Vapour 10-500 Pa Vapour 10-500 Pa	Exposure concentration 0.418 mg/m³ (TRA Workers) RCR = 0.025 0.544 mg/m³ (TRA Workers) RCR = 0.033 0.144 mg/m³ (TRA Workers) RCR = 8.79E-3 0.025 mg/m³ (TRA Workers) RCR = 1.5E-3 1.671 mg/m³ (TRA Workers) RCR = 1.11E-3 2.176 mg/m³ (TRA Workers) RCR = 1.45E-3	Risk quantification Final RCR = 0.069
Systemic, acute Worker CS 5: Operati Route of exposure and type of effects Inhalation, Systemic, long term Inhalation, Systemic, acute Combined routes,	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Aerosol Vapour 10-500 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa	Exposure concentration 0.418 mg/m³ (TRA Workers) RCR = 0.025 0.544 mg/m³ (TRA Workers) RCR = 0.033 0.144 mg/m³ (TRA Workers) RCR = 0.033 0.144 mg/m³ (TRA Workers) RCR = 8.79E-3 0.025 mg/m³ (TRA Workers) RCR = 1.5E-3 1.671 mg/m³ (TRA Workers) RCR = 1.11E-3 2.176 mg/m³ (TRA Workers) RCR = 1.45E-3 0.577 mg/m³ (TRA Workers) RCR = 3.84E-4	Risk quantification Final RCR = 0.069
systemic, acute Worker CS 5: Operati Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic, acute Combined routes, systemic, long-term	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Aerosol Vapour 10-500 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa	Exposure concentration 0.418 mg/m³ (TRA Workers) RCR = 0.025 0.544 mg/m³ (TRA Workers) RCR = 0.033 0.144 mg/m³ (TRA Workers) RCR = 0.033 0.144 mg/m³ (TRA Workers) RCR = 8.79E-3 0.025 mg/m³ (TRA Workers) RCR = 1.5E-3 1.671 mg/m³ (TRA Workers) RCR = 1.11E-3 2.176 mg/m³ (TRA Workers) RCR = 1.45E-3 0.577 mg/m³ (TRA Workers) RCR = 3.84E-4	Risk quantification Final RCR = 0.069 Final RCR < 0.01
systemic, acute Worker CS 5: Operati Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic, acute Combined routes, systemic, long-term Combined routes,	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Aerosol Vapour 10-500 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa	Exposure concentration 0.418 mg/m³ (TRA Workers) RCR = 0.025 0.544 mg/m³ (TRA Workers) RCR = 0.033 0.144 mg/m³ (TRA Workers) RCR = 0.033 0.144 mg/m³ (TRA Workers) RCR = 8.79E-3 0.025 mg/m³ (TRA Workers) RCR = 1.5E-3 1.671 mg/m³ (TRA Workers) RCR = 1.11E-3 2.176 mg/m³ (TRA Workers) RCR = 1.45E-3 0.577 mg/m³ (TRA Workers) RCR = 3.84E-4	Risk quantification Final RCR = 0.069 Final RCR < 0.01
systemic, acute Worker CS 5: Operati Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic, acute Combined routes, systemic, long-term	Assessment entity Aerosol Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Aerosol Vapour 10-500 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa	Exposure concentration 0.418 mg/m³ (TRA Workers) RCR = 0.025 0.544 mg/m³ (TRA Workers) RCR = 0.033 0.144 mg/m³ (TRA Workers) RCR = 0.033 0.144 mg/m³ (TRA Workers) RCR = 8.79E-3 0.025 mg/m³ (TRA Workers) RCR = 1.5E-3 1.671 mg/m³ (TRA Workers) RCR = 1.11E-3 2.176 mg/m³ (TRA Workers) RCR = 1.45E-3 0.577 mg/m³ (TRA Workers) RCR = 3.84E-4	Risk quantification Final RCR = 0.069 Final RCR < 0.01
systemic, acute Worker CS 5: Operati Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic, acute Combined routes, systemic, long-term Combined routes, systemic, acute	Assessment entityAerosolVapour 10-500 PaVapour 500-10.000PaVapour >10.000 PaAerosolVapour 10-500 PaVapour 500-10.000PaVapour >10.000 PaVapour >10.000 Pa	Exposure concentration 0.418 mg/m³ (TRA Workers) RCR = 0.025 0.544 mg/m³ (TRA Workers) RCR = 0.033 0.144 mg/m³ (TRA Workers) RCR = 0.033 0.144 mg/m³ (TRA Workers) RCR = 8.79E-3 0.025 mg/m³ (TRA Workers) RCR = 1.5E-3 1.671 mg/m³ (TRA Workers) RCR = 1.11E-3 2.176 mg/m³ (TRA Workers) RCR = 1.45E-3 0.577 mg/m³ (TRA Workers) RCR = 3.84E-4	Risk quantification Final RCR = 0.069 Final RCR < 0.01
systemic, acute Worker CS 5: Operati Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic, acute Combined routes, systemic, long-term Combined routes, systemic, acute	Assessment entityAerosolVapour 10-500 PaVapour 500-10.000PaVapour >10.000 PaAerosolVapour 10-500 PaVapour 500-10.000PaVapour >10.000 PaVapour >10.000 Pa	Exposure concentration 0.418 mg/m³ (TRA Workers) RCR = 0.025 0.544 mg/m³ (TRA Workers) RCR = 0.033 0.144 mg/m³ (TRA Workers) RCR = 8.79E-3 0.025 mg/m³ (TRA Workers) RCR = 1.5E-3 1.671 mg/m³ (TRA Workers) RCR = 1.11E-3 2.176 mg/m³ (TRA Workers) RCR = 1.45E-3 0.577 mg/m³ (TRA Workers) RCR = 3.84E-4 0.098 mg/m³ (TRA Workers) RCR = 6.55E-5	Risk quantification Final RCR = 0.069 Final RCR < 0.01



GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

S.P.A. REVISION I - 23/01/2023	REPLACES REVISION H	- 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON BEHALF OF: ALMA PETROLI S.p.A.
Inhalation,	Aerosol	4.798 mg/m	³ (TRA Workers) RCR = 0.293	3 Final RCR = 0.516
systemic,				
long term	1/2 m 2 m 4 0 5 0 0 D -	2.670	3 (TDA) A (
	Vapour 10-500 Pa Vapour 500-10.000	-	 ³ (TRA Workers) RCR = 0.163 ³ (TRA Workers) RCR = 0.055 	
	Pa	0.901 mg/m	(TRA WORKERS) RCR = 0.053	
	Vapour >10.000 Pa	0.088 mg/m	³ (TRA Workers) RCR = 5.35I	F-3
Inhalation,	Aerosol	.	³ (TRA Workers) RCR = 0.013	
systemic,	Vapour 10-500 Pa	.	³ (TRA Workers) RCR = 7.14	
acute	Vapour 500-10.000	_	³ (TRA Workers) RCR = 2.4E-	
	Pa	0,	, ,	
	Vapour >10.000 Pa	0.351 mg/m	³ (TRA Workers) RCR = 2.34	E-4
Dermal, systemic,	Dermal	1.371 mg/kg	g bw/day (TRA Workers) RCF	R = Final RCR = 0.471
long term		0.471		
Combined routes,				Final RCR = 0.987
systemic, long-term				
Combined routes,				Final RCR = 0.023
systemic, acute				
Worker CS 7. Treatm	ent and disposal of filte	rad salids: Us	e in contained systems (PR	
Route of exposure	Assessment entity	Exposure co		Risk quantification
and type of effects	· · · · · · · · · · · · · · · · · · ·			
Inhalation,	Vapour 10-500 Pa	0.803 mg/m	³ (TRA Workers) RCR = 0.049	9 Final RCR = 0.061
systemic,				
long term				
	Vapour 500-10.000	0.18 mg/m ³	(TRA Workers) RCR = 0.011	
	Ра		-	
	Vapour >10.000 Pa		³ (TRA Workers) RCR = 1.07	
Inhalation,	Vapour 10-500 Pa	3.213 mg/m	³ (TRA Workers) RCR = 2.14	E-3 Final RCR < 0.01
systemic,				
acute	Vapour 500-10.000	0.721 mg/m	³ (TRA Workers) RCR = 4.8E-	4
	Pa	0.721 mg/m	$(1RA WOIKEIS) RCR = 4.0E^{-1}$	-4
	Vapour >10.000 Pa	0.07mg/m^3	(TRA Workers) RCR = 4.68E	-5
Dermal, systemic,	Dermal	-	ow/day (TRA Workers) RCR =	
long term	Derman	0.237		
Combined routes,				Final RCR = 0.298
systemic, long-term				
Combined routes,				Final RCR < 0.01
systemic, acute				
Worker CS 8: Process		-		
Route of exposure	Assessment entity	Exposure co	ncentration	Risk quantification
and type of effects	Aarosol	1 708 ma/m	³ (TRA Workers) RCR = 0.293	3 Final RCR = 0.433
Inhalation, systemic,	Aerosol	4.790 mg/m	(1 A WOLKELS) KCK = 0.293	5 Filidi NCN - 0.433
iong term		1 2 2 2 1	$\frac{3}{TDA}$	2
long term	Vapour 10-500 Pa	1.339 mø/m		
iong term	Vapour 10-500 Pa Vapour 500-10.000		³ (TRA Workers) RCR = 0.082 ³ (TRA Workers) RCR = 0.055	
iong term	Vapour 10-500 Pa Vapour 500-10.000 Pa		³ (TRA Workers) RCR = 0.05	



S.P.A. REVISION I - 23/01/2023	REPLACES REVISION H	31/03/2022 DEVELOPED BY: ICARO	S.r.I ON B	EHALF OF: ALMA PETROLI S.p.A.
				· · · ·
Inhalation, systemic, acute	Aerosol	19.19 mg/m ³ (TRA Workers) RCF	8 = 0.013	Final RCR = 0.019
	Vapour 10-500 Pa	5.355 mg/m ³ (TRA Workers) RCF	R = 3 57F-3	
	Vapour 500-10.000 Pa	3.604 mg/m ³ (TRA Workers) RCF		
	Vapour >10.000 Pa	0.281 mg/m ³ (TRA Workers) RCF	R = 1.87E-4	
Dermal, systemic, long term	Dermal	0.686 mg/kg bw/day (TRA Work 0.236		Final RCR = 0.236
Combined routes,				Final RCR = 0.669
systemic, long-term				
Combined routes, systemic, acute				Final RCR = 0.019
	exposures; Closed syst	ems (PROC 2, PROC1)		
Route of exposure	Assessment entity	Exposure concentration		Risk quantification
and type of effects				
Inhalation, systemic, long term	Vapour 10-500 Pa	0.268 mg/m ³ (TRA Workers) RCF	R = 0.016	Final RCR = 0.022
	Vapour 500-10.000 Pa	0.09 mg/m ³ (TRA Workers) RCR	= 5.49E-3	
	Vapour >10.000 Pa	8.77E-3 mg/m ³ (TRA Workers) R 4	CR = 5.35E-	
Inhalation, systemic, acute	Vapour 10-500 Pa	1.071 mg/m ³ (TRA Workers) RCF	R = 7.14E-4	Final RCR < 0.01
	Vapour 500-10.000 Pa	0.36 mg/m ³ (TRA Workers) RCR	= 2.4E-4	
	Vapour >10.000 Pa	0.035 mg/m ³ (TRA Workers) RCF	R = 2.34E-5	
Dermal, systemic, long term	Dermal	1.37 mg/kg bw/day (TRA Worke RCR = 0.471	rs)	Final RCR = 0.471
Combined routes, systemic, long-term				Final RCR = 0.493
Combined routes, systemic, acute				Final RCR < 0.01
Worker CS 10: Pourin	g from small containers	; Non-dedicated facility (PROC 8a	a)	
Route of exposure	Assessment entity	Exposure concentration		Risk quantification
and type of effects				
Inhalation, systemic, long term	Aerosol	4.798 mg/m ³ (TRA Workers) RCF	R = 0.293	Final RCR = 0.516
	Vapour 10-500 Pa	2.678 mg/m ³ (TRA Workers) RCF	R = 0.163	
	Vapour 500-10.000 Pa	0.901 mg/m ³ (TRA Workers) RCF		
	Vapour >10.000 Pa	0.088 mg/m ³ (TRA Workers) RCF	R = 5.35E-3	
Inhalation, systemic, acute	Aerosol	19.19 mg/m ³ (TRA Workers) RCF		Final RCR = 0.023
	Vapour 10-500 Pa	10.71 mg/m ³ (TRA Workers) RCF	R = 7.14E-3	
	Vapour 500-10.000	3.604 mg/m ³ (TRA Workers) RCF	R = 2.4E-3	



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

	Ра		
	Vapour >10.000 Pa	0.351 mg/m ³ (TRA Workers) RCR = 2.34E-4	
Dermal, systemic, long term	Dermal	1.371 mg/kg bw/day (TRA Workers) RCR = 0.471	Final RCR = 0.471
Combined routes,			Final RCR = 0.987
systemic, long-term			
Combined routes,			Final RCR = 0.023
systemic, acute			
_ , ,			1
Worker CS 11: Generation	al exposures; Open syst	tems (PROC 4)	
Route of exposure	Assessment entity	Exposure concentration	Risk quantification
and type of effects			
Inhalation,	Aerosol	4.798 mg/m ³ (TRA Workers) RCR = 0.293	Final RCR = 0.398
systemic,			
long term			_
	Vapour 10-500 Pa	1.339 mg/m ³ (TRA Workers) RCR = 0.082	4
	Vapour 500-10.000 Pa	0.36 mg/m ³ (TRA Workers) RCR = 0.022	
	Vapour >10.000 Pa	0.035 mg/m ³ (TRA Workers) RCR = 2.14E-3	1
Inhalation,	Aerosol	19.19 mg/m ³ (TRA Workers) RCR = 0.013	Final RCR = 0.017
systemic, acute			
	Vapour 10-500 Pa	5.355 mg/m ³ (TRA Workers) RCR = 3.57E-3	-
	Vapour 500-10.000	1.442 mg/m ³ (TRA Workers) RCR = 9.61E-4	-
	Ра		
	Vapour >10.000 Pa	0.14 mg/m ³ (TRA Workers) RCR = 9.35E-5	
Dermal, systemic,	Dermal	0.686 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.236
long term		0.236	
Combined routes,			Final RCR = 0.634
systemic, long-term			
Combined routes,			Final RCR = 0.017
systemic, acute			
		()	
		ntenance (PROC 8a, PROC 28)	Dial avantification
Route of exposure	ment cleaning and mair Assessment entity	ntenance (PROC 8a, PROC 28) Exposure concentration	Risk quantification
Route of exposure and type of effects	Assessment entity	Exposure concentration	
Route of exposure and type of effects Inhalation,	Assessment entity Vapour 10-500 Pa	Exposure concentration 2.678 mg/m ³ (TRA Workers) RCR = 0.163	Risk quantification Final RCR = 0.224
Route of exposure and type of effects	Assessment entity Vapour 10-500 Pa Vapour 500-10.000	Exposure concentration	
Route of exposure and type of effects Inhalation,	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa	Exposure concentration2.678 mg/m³ (TRA Workers) RCR = 0.1630.901 mg/m³ (TRA Workers) RCR = 0.055	
Route of exposure and type of effects Inhalation, systemic, long term	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure concentration 2.678 mg/m³ (TRA Workers) RCR = 0.163 0.901 mg/m³ (TRA Workers) RCR = 0.055 0.088 mg/m³ (TRA Workers) RCR = 5.35E-3	Final RCR = 0.224
Route of exposure and type of effects Inhalation, systemic, long term Inhalation,	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa	Exposure concentration2.678 mg/m³ (TRA Workers) RCR = 0.1630.901 mg/m³ (TRA Workers) RCR = 0.055	
Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic,	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure concentration 2.678 mg/m³ (TRA Workers) RCR = 0.163 0.901 mg/m³ (TRA Workers) RCR = 0.055 0.088 mg/m³ (TRA Workers) RCR = 5.35E-3	Final RCR = 0.224
Route of exposure and type of effects Inhalation,	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 10-500 Pa Vapour 500-10.000	Exposure concentration 2.678 mg/m³ (TRA Workers) RCR = 0.163 0.901 mg/m³ (TRA Workers) RCR = 0.055 0.088 mg/m³ (TRA Workers) RCR = 5.35E-3	Final RCR = 0.224
Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic,	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa	Exposure concentration 2.678 mg/m³ (TRA Workers) RCR = 0.163 0.901 mg/m³ (TRA Workers) RCR = 0.055 0.088 mg/m³ (TRA Workers) RCR = 5.35E-3 10.71 mg/m³ (TRA Workers) RCR = 7.14E-3 3.604 mg/m³ (TRA Workers) RCR = 2.4E-3	Final RCR = 0.224
Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic, acute	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure concentration 2.678 mg/m³ (TRA Workers) RCR = 0.163 0.901 mg/m³ (TRA Workers) RCR = 0.055 0.088 mg/m³ (TRA Workers) RCR = 5.35E-3 10.71 mg/m³ (TRA Workers) RCR = 7.14E-3 3.604 mg/m³ (TRA Workers) RCR = 2.4E-3 0.351 mg/m³ (TRA Workers) RCR = 2.34E-4	Final RCR = 0.224 Final RCR < 0.01
Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic, acute Dermal, systemic,	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa	Exposure concentration 2.678 mg/m³ (TRA Workers) RCR = 0.163 0.901 mg/m³ (TRA Workers) RCR = 0.055 0.088 mg/m³ (TRA Workers) RCR = 5.35E-3 10.71 mg/m³ (TRA Workers) RCR = 7.14E-3 3.604 mg/m³ (TRA Workers) RCR = 2.4E-3 0.351 mg/m³ (TRA Workers) RCR = 2.34E-4 1.371 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.224
Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic, acute Dermal, systemic, long term	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure concentration 2.678 mg/m³ (TRA Workers) RCR = 0.163 0.901 mg/m³ (TRA Workers) RCR = 0.055 0.088 mg/m³ (TRA Workers) RCR = 5.35E-3 10.71 mg/m³ (TRA Workers) RCR = 7.14E-3 3.604 mg/m³ (TRA Workers) RCR = 2.4E-3 0.351 mg/m³ (TRA Workers) RCR = 2.34E-4	Final RCR = 0.224 Final RCR < 0.01 Final RCR < 0.471
Route of exposure and type of effects Inhalation, systemic, long term Inhalation, systemic,	Assessment entity Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa Vapour 10-500 Pa Vapour 10-500 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa	Exposure concentration 2.678 mg/m³ (TRA Workers) RCR = 0.163 0.901 mg/m³ (TRA Workers) RCR = 0.055 0.088 mg/m³ (TRA Workers) RCR = 5.35E-3 10.71 mg/m³ (TRA Workers) RCR = 7.14E-3 3.604 mg/m³ (TRA Workers) RCR = 2.4E-3 0.351 mg/m³ (TRA Workers) RCR = 2.34E-4 1.371 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.224 Final RCR < 0.01



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

systemic, long term Vapour 500-10.000 Pa Vapour >10.000 Pa 8.77E-3 mg/m³ (TRA Workers) RCR = 5.49E-3 Pa Vapour >10.000 Pa 8.77E-3 mg/m³ (TRA Workers) RCR = 5.35E- 4 Inhalation, systemic, acute Vapour 10-500 Pa 1.071 mg/m³ (TRA Workers) RCR = 7.14E-4 Vapour 500-10.000 Pa Vapour 500-10.000 Pa Vapour >10.000 Pa 0.035 mg/m³ (TRA Workers) RCR = 2.4E-4 Pa Vapour >10.000 Pa 0.035 mg/m³ (TRA Workers) RCR = 2.34E-5 Dermal, systemic, long term Combined routes, systemic, long-term Combined routes, systemic, acute 4.2. Environment Offshore drilling: Discharge to aquatic environment is restricted by law and industry prohibits release. [ESCO 10133223608] OSPAR Commission 2009. Discharges, Spills and Emissions from Offshore Oil and Gas Installat in 2007, including the assessment of data reported in 2006 and 2007. Onshore drilling: Environmental releases are minimized during onshore drilling operations; waste recycling a disposal is managed according to national and/or local regulations. International Finance Corporation 2007.	Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Vapour 500-10.000 Pa 0.09 mg/m³ (TRA Workers) RCR = 5.49E-3 A Vapour >10.000 Pa 8.77E-3 mg/m³ (TRA Workers) RCR = 5.35E-4 Inhalation, systemic, acute Vapour 10-500 Pa 1.071 mg/m³ (TRA Workers) RCR = 7.14E-4 Pa Final RCR < 0.0	systemic,	Vapour 10-500 Pa	0.268 mg/m ³ (TRA Workers) RCR = 0.016	Final RCR = 0.022
4 Inhalation, systemic, acute Vapour 10-500 Pa 1.071 mg/m³ (TRA Workers) RCR = 7.14E-4 Final RCR < 0.0	0		0.09 mg/m ³ (TRA Workers) RCR = 5.49E-3	
systemic, acute Vapour 500-10.000 Pa Vapour >10.000 Pa 0.36 mg/m ³ (TRA Workers) RCR = 2.4E-4 Pa Vapour >10.000 Pa 0.35 mg/m ³ (TRA Workers) RCR = 2.34E-5 Dermal, systemic, long term Combined routes, systemic, long-term Combined routes, systemic, acute 4.2. Environment Offshore drilling: Discharge to aquatic environment is restricted by law and industry prohibits release. [ESCO 10133223608] OSPAR Commission 2009. Discharges, Spills and Emissions from Offshore Oil and Gas Installat in 2007, including the assessment of data reported in 2006 and 2007. Onshore drilling: Environmental releases are minimized during onshore drilling operations; waste recycling a disposal is managed according to national and/or local regulations. International Finance Corporation 2007.		Vapour >10.000 Pa		
Pa Output Vapour >10.000 Pa 0.035 mg/m³ (TRA Workers) RCR = 2.34E-5 Dermal, systemic, long term Dermal 1.37 mg/kg bw/day (TRA Workers) RCR = Final RCR = 0.4 Combined routes, systemic, long-term 0.471 Final RCR = 0.4 Combined routes, systemic, acute Final RCR = 0.4 4.2. Environment Final RCR < 0.0	systemic,	Vapour 10-500 Pa	1.071 mg/m ³ (TRA Workers) RCR = 7.14E-4	Final RCR < 0.01
Dermal, systemic, long term Dermal 1.37 mg/kg bw/day (TRA Workers) RCR = Final RCR = 0.4 Combined routes, systemic, long-term Final RCR = 0.4 Final RCR = 0.4 Combined routes, systemic, long-term Final RCR = 0.4 Combined routes, systemic, acute Final RCR < 0.0		•	0.36 mg/m ³ (TRA Workers) RCR = 2.4E-4	
long term 0.471 Combined routes, systemic, long-term Final RCR = 0.4 Combined routes, systemic, acute Final RCR < 0.0		Vapour >10.000 Pa	0.035 mg/m ³ (TRA Workers) RCR = 2.34E-5	
systemic, long-term Final RCR < 0.0	•	Dermal		Final RCR = 0.471
systemic, acute 4.2. Environment Offshore drilling: Discharge to aquatic environment is restricted by law and industry prohibits release. [ESCo 10133223608] OSPAR Commission 2009. Discharges, Spills and Emissions from Offshore Oil and Gas Installat in 2007, including the assessment of data reported in 2006 and 2007. Onshore drilling: Environmental releases are minimized during onshore drilling operations; waste recycling a disposal is managed according to national and/or local regulations. International Finance Corporation 2007.	,			Final RCR = 0.493
Offshore drilling: Discharge to aquatic environment is restricted by law and industry prohibits release. [ESCo 10133223608] OSPAR Commission 2009. Discharges, Spills and Emissions from Offshore Oil and Gas Installat in 2007, including the assessment of data reported in 2006 and 2007. Onshore drilling: Environmental releases are minimized during onshore drilling operations; waste recycling a disposal is managed according to national and/or local regulations. International Finance Corporation 2007.				Final RCR < 0.01
10133223608] OSPAR Commission 2009. Discharges, Spills and Emissions from Offshore Oil and Gas Installat in 2007, including the assessment of data reported in 2006 and 2007. Onshore drilling: Environmental releases are minimized during onshore drilling operations; waste recycling a disposal is managed according to national and/or local regulations. International Finance Corporation 2007.	4.2. Environment		·	
Onshore drilling: Environmental releases are minimized during onshore drilling operations; waste recycling a disposal is managed according to national and/or local regulations. International Finance Corporation 2007.	10133223608] OSPAR	Commission 2009. Dise	charges, Spills and Emissions from Offshore Oil	-
Environmental, Health, and Safety Guidelines: onshore oil and gas development. Mining Waste Directive	-			
		•		
(2006/21/EC), European Waste Directive (2008/98/EC) and national transpositions, e.g. Novelle des Kreislaufwirtschaftsgesetzes (KrWG) in Germany.		•		velle des

in compliance with EC Regulation no. 1907/2006 and s.m.i



GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

12a - Use in fuel; Industrial

Section 1				
Title				
12a - Use in fuel; Industrial				
Use Descriptor				
Sector(s) of Use				
Process Categories		1, 2, 8a, 8b, 16, 28		
Environmental Release Cate	gories	7		
Specific Environmental Rele		ESVOC SpERC 7. 12a.v1		
Processes, tasks, activities of				
		vities associated with its transfer, use, equipment		
maintenance and handling of		nies associated with its transier, use, equipment		
Assessment Method				
See Section 3.				
	itions and risk management m	oscuroc		
Section 2.1 Control of work		easures		
Product characteristics	erexposure			
Physical form of product	Liquid			
Vapour pressure		5 kPa at Standard Temperature and Pressure With		
		tion [ESCom-11133171333 ESCom-11133171301]		
Concentration of		e in the product up to 100 %. (unless stated		
substance in product		71310 ESCom-18309152101 ESCom-16173221408		
	ESCom-18309152200]			
Frequency and duration		o 8 hours (unless stated differently) [ESCom-		
of use/exposure		152101 ESCom-16173221408 ESCom-18309152200]		
Other Operational		ard of occupational hygiene is implemented [ESCom-		
Conditions affecting	11133171303]			
exposure	-	eratures. (unless stated differently) [ESCom-		
		152101 ESCom-16173221408 ESCom-18309152200]		
Contributing Scenarios		Measures and Operating Conditions		
General measures		24 or H225 or H226, refer to section 2 of the SDS; For		
(flammability) [ESCom-		om physicochemical properties, refer to main body of		
19350151900]	the SDS, section 7 and/or 8.			
General measures	applicable if classified as H304, refer to section 2 of the SDS; Do not ingest. If			
(aspiration hazard)	swallowed then seek immediate medical assistance. []			
Bulk transfers; Dedicated	Wear chemically resistant g	oves (tested to EN374) in combination with 'basic'		
facility (PROC_8b)	employee training. If skin co	ntamination is expected to extend to other parts of		
		arts should also be protected with impervious		
	garments in a manner equiv	alent to those described for the hands. For further		
	specification, refer to sectio	n 8 of the SDS. [ESCom-11133171457 ESCom-		
	17297180800 ESCom-12355	-		
	Additional good practice adv	vice. Obligations according to Article 37(4) of REACH do		
	not apply.			
	Ensure no splashing occurs of	during transfer. [ESCom-16173221409]		
	If repeated and/or prolonged skin exposure to the substance is likely, then wear			
	_	374. Provide employee with skin care programmes.		
	[ESCom-16354145601 ESCo			
Drum/batch transfers;	Wear chemically resistant g	oves (tested to EN374) in combination with 'basic'		
Dedicated facility	employee training. If skin co	ntamination is expected to extend to other parts of		
(PROC_8b)	the body, then these body p	arts should also be protected with impervious		
· _ /	garments in a manner equivalent to those described for the hands. For further			
(_ /	garments in a manner equiv	alent to those described for the hands. For further		



S.P.A.						
REVISION I - 23/01/2023	REPLACES REVISION H - 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON BEHALF OF: ALMA PETROLI S.p.A.			
17297180800 ESCom-12355002165]						
Additional good practice advice. Obligations according to Article 37(4) of REACH d						
		Ace. Obligations according	to Article 37(4) of REACH do			
	not apply.	luring transfor [FCCom 16	172221400]			
	Ensure no splashing occurs during transfer. [ESCom-16173221409] If repeated and/or prolonged skin exposure to the substance is likely, then wear					
	_	suitable gloves tested to EN374. Provide employee with skin care programmes.				
	[ESCom-16354145601 ESCom-15193135615] Handle substance within a closed system. [ESCom-11133171405]					
General exposures;			_			
Closed systems (PROC_2,	Sample via a closed loop or	other system to avoid expo	osure. [ESCom-			
PROC_1)	11133171361]					
		lice. Obligations according	to Article 37(4) of REACH do			
	not apply.	al al da anna anna da dha an la	at a second s			
	If repeated and/or prolonge		-			
	suitable gloves tested to EN		n skin care programmes.			
	[ESCom-16354145601 ESCon		224744051			
Use of fuels; Closed	Handle substance within a c	-	_			
systems (PROC_16)		lice. Obligations according	to Article 37(4) of REACH do			
	not apply.	al al da anna anna da dha an la	et en en la liberte ette en errenne			
	If repeated and/or prolonge					
	suitable gloves tested to EN		n skin care programmes.			
	[ESCom-16354145601 ESCon		· · · ·			
Equipment cleaning and	Drain down and flush system	n prior to equipment break	k-in or maintenance.			
maintenance (PROC_8a,	[ESCom-11133171413]	ever (tested to ENDTA) in				
PROC_28)	Wear chemically resistant gl					
	employee training. If skin co	-	-			
	the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands. For further					
	specification, refer to sectio 17297180800 ESCom-12355		133171457 ESCOM-			
			to Article 37(4) of REACH do			
	not apply.	nce. Obligations according	to Article 37(4) of REACH do			
	Wear suitable coveralls to p	revent exposure to the ski	$p [ESCom_{11122171468}]$			
	Clear spills immediately. [ES	•	. [LSCOM-11155171408]			
	If repeated and/or prolonge		stance is likely, then wear			
	suitable gloves tested to EN	-	-			
	[ESCom-16354145601 ESCo		in skin cure programmes.			
Storage (PROC_2,	Store substance within a clo		3171437]			
PROC_1)						
1100_1	not apply.	Additional good practice advice. Obligations according to Article 37(4) of REACH do				
	If repeated and/or prolonge	d skin exposure to the sub	stance is likely, then wear			
	suitable gloves tested to EN	-	-			
	[ESCom-16354145601 ESCo					
Section 2.2 Control of env		·······				
Product characteristics						
	B. [ESCom-11133171600] Predor	ninantly hydrophobic. [ESC	Com-11133171601]			
Amounts used	-					
Fraction of EU tonnage use	ed in region		0,1			
Regional use tonnage (ton			4,7E+04			
Fraction of Regional tonna			1,0E+00			
Annual site tonnage (tonnes/year) 4,7E+04						
Annual site tonnage (tonn	es/year)		4,7E+04			
Annual site tonnage (tonn Maximum daily site tonna			4,7E+04 1,6E+05			

in compliance with EC Regulation no. 1907/2006 and s.m.i



GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

Continuous release. [ESCom-10133212701]	
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)	5,0E-03
Release fraction to wastewater from process (initial release prior to RMM)	5,0E-06
Release fraction to soil from process (initial release prior to RMM)	0
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used. [E	SCom-10133220229]
Technical onsite conditions and measures to reduce or limit discharges, air emissions a	nd releases to soil
Risk from environmental exposure is driven by freshwater sediment. [TCR1b]	
If discharging to domestic sewage treatment plant, no onsite wastewater treatment requ	ired [TCR9]
Treat air emission to provide a typical removal efficiency of (%)	9,5E+01
Treat onsite wastewater (prior to receiving water discharge) to provide the required	91,3
removal efficiency >= (%)	
If discharging to domestic sewage treatment plant, provide the required onsite	0,0
wastewater removal efficiency of >= (%)	,
Organisation measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. [ESCom-10133221228] Sludge should be in	cinerated. contained o
reclaimed. [ESCom-10133221229]	
Conditions and measures related to municipal sewage treatment plant	
Not applicable as there is no release to wastewater. [ESCom-10133222100]	
Estimated substance removal from wastewater via domestic sewage treatment (%)	92,5
Total efficiency of removal from wastewater after onsite and offsite (domestic	92,5
treatment plant) RMMs (%)	0 =)0
Maximum allowable site tonnage (MSafe) based on release following total wastewater	1,8E+05
treatment removal (kg/d)	_,
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and measures related to external treatment of waste for disposal	_,
Combustion emissions limited by required exhaust emission controls. [ESCom-10133222]	9011 Combustion
emissions considered in regional exposure assessment. [ESCom-10133222902] External t	-
waste should comply with applicable local and/or national regulations. [ESCom-1013322	
Conditions and measures related to external recovery of waste	
This substance is consumed during use and no waste of the substance is generated. [ESC	om-10133223502]
Section 3 Exposure Estimation	
3.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise in	ndicated.
3.2. Environment	
The Hydrocarbon Block Method has been used to calculate environmental exposure with	the PFTRORISK model
[ESCom-11133171701]	The FEIRonisk model.
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 managemen	t measures/onerationa
conditions outlined in section 2 are implemented.; Where other risk management measu	
· · · ·	-
CONDITIONS are adopted then lisers should ensure that risks are managed to at least equi	
conditions are adopted, then users should ensure that risks are managed to at least equi	ant measures are base
hazard data do not enable the derivation of a DNEL for aspiration effects.; Risk managem	



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

Worker CS 1: Bulk transfers; Dedicated facility (PROC 8b)

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Aerosol	0.96 mg/m ³ (TRA Workers) RCR = 0.059	Final RCR = 0.171
	Vapour 10-500 Pa	1.339 mg/m ³ (TRA Workers) RCR = 0.082	
	Vapour 500-10.000 Pa	0.451 mg/m ³ (TRA Workers) RCR = 0.027	
	Vapour >10.000 Pa	0.053 mg/m ³ (TRA Workers) RCR = 3.21E-3	
Inhalation, systemic, acute	Aerosol	3.838 mg/m ³ (TRA Workers) RCR = 2.56E-3	Final RCR < 0.01
	Vapour 10-500 Pa	5.355 mg/m ³ (TRA Workers) RCR = 3.57E-3	
	Vapour 500-10.000 Pa	1.802 mg/m ³ (TRA Workers) RCR = 1.2E-3	
	Vapour >10.000 Pa	0.211 mg/m ³ (TRA Workers) RCR = 1.4E-4	
Dermal, systemic, long term	Dermal	1.371 mg/kg bw/day (TRA Workers) RCR = 0.471	Final RCR = 0.471
Combined routes, systemic, long-term			Final RCR = 0.642
Combined routes, systemic, acute			Final RCR < 0.01

Worker CS 2: Drum/batch transfers; Dedicated facility (PROC 8b)

Route of exposure	Assessment entity	Exposure concentration	Risk quantification
and type of effects			
Inhalation,	Aerosol	0.96 mg/m ³ (TRA Workers) RCR = 0.059	Final RCR = 0.171
systemic,			
long term			_
	Vapour 10-500 Pa	1.339 mg/m ³ (TRA Workers) RCR = 0.082	
	Vapour 500-10.000	0.451 mg/m ³ (TRA Workers) RCR = 0.027	
	Ра		
	Vapour >10.000 Pa	0.053 mg/m ³ (TRA Workers) RCR = 3.21E-3	
Inhalation,	Aerosol	3.838 mg/m ³ (TRA Workers) RCR = 2.56E-3	Final RCR < 0.01
systemic,			
acute			
	Vapour 10-500 Pa	5.355 mg/m ³ (TRA Workers) RCR = 3.57E-3	
	Vapour 500-10.000	1.802 mg/m ³ (TRA Workers) RCR = 1.2E-3	
	Ра		
	Vapour >10.000 Pa	0.211 mg/m ³ (TRA Workers) RCR = 1.4E-4	
Dermal, systemic,	Dermal	1.371 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.471
long term		0.471	
Combined routes,			Final RCR = 0.642
systemic, long-term			
Combined routes,			Final RCR < 0.01
systemic, acute			

General exposures; Closed systems (PROC 2, PROC 1)



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation,	Vapour 10-500 Pa	0.268 mg/m ³ (TRA Workers) RCR = 0.016	Final RCR = 0.022
systemic, long term	Vapour 500-10.000 Pa	0.09 mg/m ³ (TRA Workers) RCR = 5.49E-3	
	Vapour >10.000 Pa	8.77E-3 mg/m ³ (TRA Workers) RCR = 5.35E- 4	
Inhalation, systemic, acute	Vapour 10-500 Pa	1.071 mg/m ³ (TRA Workers) RCR = 7.14E-4	Final RCR < 0.01
	Vapour 500-10.000 Pa	0.36 mg/m ³ (TRA Workers) RCR = 2.4E-4	
	Vapour >10.000 Pa	0.035 mg/m ³ (TRA Workers) RCR = 2.34E-5	
Dermal, systemic, long term	Dermal	1.37 mg/kg bw/day (TRA Workers) RCR = 0.471	Final RCR = 0.471
Combined routes, systemic, long-term			Final RCR = 0.493
Combined routes, systemic, acute			Final RCR < 0.01
Worker CS 4: Use of f	uels; Closed systems (F	PROC 16)	
Route of exposure	Assessment entity	Exposure concentration	Risk quantification
and type of effects			
Inhalation, systemic, long term	Vapour 10-500 Pa	0.268 mg/m ³ (TRA Workers) RCR = 0.016	Final RCR = 0.022
0	Vapour 500-10.000	0.09 mg/m ³ (TRA Workers) RCR = 5.49E-3	

	Pa		
	Vapour >10.000 Pa	8.77E-3 mg/m ³ (TRA Workers) RCR = 5.35E- 4	
Inhalation, systemic, acute	Vapour 10-500 Pa	1.071 mg/m ³ (TRA Workers) RCR = 7.14E-4	Final RCR < 0.01
	Vapour 500-10.000 Pa	0.36 mg/m ³ (TRA Workers) RCR = 2.4E-4	
	Vapour >10.000 Pa	0.035 mg/m ³ (TRA Workers) RCR = 2.34E-5	
Dermal, systemic, long term	Dermal	0.34 mg/kg bw/day (TRA Workers) RCR = 0.117	Final RCR = 0.117
Combined routes, systemic, long-term			Final RCR = 0.139
Combined routes, systemic, acute			Final RCR < 0.01

Worker CS 5: Equipment cleaning and maintenance (PROC 8a, PROC 28)

Route of exposure	Assessment entity	Exposure concentration	Risk quantification
and type of effects			
Inhalation, systemic, long term	Vapour 10-500 Pa	2.678 mg/m ³ (TRA Workers) RCR = 0.163	Final RCR = 0.224
	Vapour 500-10.000 Pa	0.901 mg/m ³ (TRA Workers) RCR = 0.055	
	Vapour >10.000 Pa	0.088 mg/m ³ (TRA Workers) RCR = 5.35E-3	



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

S.P.A. REVISION I - 23/01/2023	REPLACES REVISION H	I - 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON BEHALF OF: ALMA PETROLI S.p.A.
				-
Inhalation,	Vapour 10-500 Pa	10.71 mg/ı	m ³ (TRA Workers) RCR = 7.14	E-3 Final RCR < 0.01
systemic,				
acute				
	Vapour 500-10.000	3.604 mg/ı	m ³ (TRA Workers) RCR = 2.4E	-3
	Pa	0.054 /	3/704.14	5.4
Demand existencia	Vapour >10.000 Pa	-	m ³ (TRA Workers) RCR = 2.34	
Dermal, systemic,	Dermal	0.471	kg bw/day (TRA Workers) RCF	R = Final RCR = 0.471
long term Combined routes,		0.471		Final RCR = 0.695
systemic, long-term				
Combined routes,				Final RCR < 0.01
systemic, acute				
Worker CS 6: Storage	(PROC 2, PROC 1)			
Route of exposure	Assessment entity	Exposure of	oncentration	Risk quantification
and type of effects				
Inhalation,	Vapour 10-500 Pa	0.268 mg/ı	m ³ (TRA Workers) RCR = 0.01	6 Final RCR = 0.022
systemic,				
long term	Vanaur 500, 10,000	0.00 m = /m		2
	Vapour 500-10.000 Pa	0.09 mg/m	³ (TRA Workers) RCR = 5.49E	-3
	Vapour >10.000 Pa	8 77E-3 mg	/m³ (TRA Workers) RCR = 5.3	25F-
	Vapour >10.000 r a	4		JJL-
Inhalation,	Vapour 10-500 Pa	1.071 mg/i	m ³ (TRA Workers) RCR = 7.14	E-4 Final RCR < 0.01
systemic,		0,	х <i>,</i>	
acute				
	Vapour 500-10.000	0.36 mg/m	³ (TRA Workers) RCR = 2.4E-4	1
	Ра			
	Vapour >10.000 Pa	-	m³ (TRA Workers) RCR = 2.34	
Dermal, systemic,	Dermal		g bw/day (TRA Workers) RCR	= Final RCR = 0.471
long term		0.471		
Combined routes,				Final RCR = 0.493
systemic, long-term Combined routes,				Final RCR < 0.01
systemic, acute				
systemic, acute	1	1		
4.2. Environment				
	assumed operating cor	ditions whicl	n may not be applicable to all	l sites; thus, scaling may be
necessary to define a	opropriate site-specific	risk manager	nent measures. [ESCom-1013	33223600] Required
removal efficiency for	wastewater can be acl	nieved using	onsite/offsite technologies, e	ither alone or in
			ficiency for air can be achieve	-
-			33223602] Further details or	-
	ided in SpERC factsheet	t (http://cefic	.org/en/reach-for-industries	-libraries.html). [ESCom-
10133223603]	torication Datia for Ala		Doir	1.95.02
IVIAXIMUM KISK Charac	cterisation Ratio for Air	Emissions RC	.KdII	1,8E-03

Maximum Risk Characterisation Ratio for Wastewater Emissions RCRwater

8,6E-01



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

12b - Use in fuel; Professional

Section 1			
Title			
12b - Use in fuel; Profession	al		
Use Descriptor			
Sector(s) of Use			
Process Categories		1, 2, 8a, 8b, 16, 28	
Environmental Release Cate	gories	9a, 9b	
Specific Environmental Rele	-	ESVOC SpERC 9.12b.v1	
Processes, tasks, activities		· · ·	
		ities associated with its transfer, use, equipment	
maintenance and handling of			
Assessment Method			
See Section 3.			
	itions and risk management m	easures	
Section 2.1 Control of work			
Product characteristics	•		
Physical form of product	Liquid		
Vapour pressure		5 kPa at Standard Temperature and Pressure With	
		tion [ESCom-11133171333 ESCom-11133171301]	
Concentration of		e in the product up to 100 %. (unless stated	
substance in product		71310 ESCom-18309152101 ESCom-16173221408	
	ESCom-18309152200]		
Frequency and duration		8 hours (unless stated differently) [ESCom-	
of use/exposure	, , , , ,	152101 ESCom-16173221408 ESCom-18309152200]	
Other Operational	Assumes a good basic standard of occupational hygiene is implemented [ESCom-		
Conditions affecting	11133171303]		
exposure	Covers use at ambient temperatures. (unless stated differently) [ESCom-		
	10133224959 ESCom-18309152101 ESCom-16173221408 ESCom-18309152200]		
Contributing Scenarios		Veasures and Operating Conditions	
General measures		24 or H225 or H226, refer to section 2 of the SDS; For	
(flammability) [ESCom-		om physicochemical properties, refer to main body of	
19350151900]	the SDS, section 7 and/or 8.		
General measures		04, refer to section 2 of the SDS; Do not ingest. If	
(aspiration hazard)	swallowed then seek immed		
Bulk transfers; Dedicated	Wear chemically resistant g	oves (tested to EN374) in combination with 'basic'	
facility (PROC_8b)	employee training. If skin co	ntamination is expected to extend to other parts of	
	the body, then these body p	arts should also be protected with impervious	
	garments in a manner equiv	alent to those described for the hands. For further	
	specification, refer to sectio	n 8 of the SDS. [ESCom-11133171457 ESCom-	
	17297180800 ESCom-12355	002165]	
	Additional good practice adv	vice. Obligations according to Article 37(4) of REACH do	
	not apply.		
		during transfer. [ESCom-16173221409]	
		d skin exposure to the substance is likely, then wear	
		374. Provide employee with skin care programmes.	
	[ESCom-16354145601 ESCon	-	
Drum/batch transfers;	Use drum pumps. [ESCom-1		
Dedicated facility		oves (tested to EN374) in combination with 'basic'	
(PROC_8b)		ntamination is expected to extend to other parts of	
		arts should also be protected with impervious	
	garments in a manner equiv	alent to those described for the hands. For further	



S.P.A. REVISION I - 23/01/2023	REPLACES REVISION H - 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON BEHALF OF: ALMA PETROLI S.p.A.
		on 8 of the SDS. [ESCom-111	33171457 ESCom-
	17297180800 ESCom-1235		
	Additional good practice ad	dvice. Obligations according	to Article 37(4) of REACH do
	not apply.		
		during transfer. [ESCom-161	
	If repeated and/or prolong	ed skin exposure to the subs	tance is likely, then wear
	suitable gloves tested to El	N374. Provide employee with	n skin care programmes.
	[ESCom-16354145601 ESCo	om-15193135615]	
Refuelling (PROC_8b)	Wear chemically resistant a	gloves (tested to EN374) in c	ombination with 'basic'
		ontamination is expected to	-
		parts should also be protected	-
		ivalent to those described for	
		on 8 of the SDS. [ESCom-111	33171457 ESCom-
	17297180800 ESCom-1235	-	
		dvice. Obligations according	to Article 37(4) of REACH do
	not apply.		
		during transfer. [ESCom-161	
		ed skin exposure to the subs	-
	_	N374. Provide employee with	n skin care programmes.
	[ESCom-16354145601 ESCo		
General exposures;		closed system. [ESCom-1113	
Closed systems (PROC_2,		r other system to avoid expo	sure. [ESCom-
PROC_1)	11133171361]		
		dvice. Obligations according	to Article 37(4) of REACH do
	not apply.		
		ed skin exposure to the subs	-
	_	N374. Provide employee with	n skin care programmes.
	[ESCom-16354145601 ESCo	-	
Use of fuels; Closed		closed system. [ESCom-1113	
systems (PROC_16)		dvice. Obligations according t	to Article 37(4) of REACH do
	not apply.		
		ed skin exposure to the subs	-
	0	N374. Provide employee with	n skin care programmes.
	[ESCom-16354145601 ESCo		
Equipment cleaning and	-	em prior to equipment break	-in or maintenance.
maintenance (PROC_8a,	[ESCom-11133171413]		
PROC_28)		gloves (tested to EN374) in c	
		ontamination is expected to	
		parts should also be protect	-
		ivalent to those described for	
	-	on 8 of the SDS. [ESCom-111	331/145/ ESCom-
	17297180800 ESCom-1235	-	to Article 27(4) of DEACU do
		dvice. Obligations according t	to Article 37(4) of REACH do
	not apply.		[550
		prevent exposure to the skin	. [[3001111331/1468]
	Clear spills immediately. [E	ed skin exposure to the subs	tanco is likely, then wear
		N374. Provide employee with	
			i skin care programmes.
Storage (BBOC 2	[ESCom-16354145601 ESCo		171427]
Storage (PROC_2,		osed system. [ESCom-11133	
PROC_1)		dvice. Obligations according	to ALLICE 37(4) OF REACH 00
	not apply.	od chin ovnosuro to the out-	tanco is likely than waar
	ii repeated and/or prolong	ed skin exposure to the subs	tance is likely, then wear



GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

suitable gloves tested to EN374. Provid [ESCom-16354145601 ESCom-1519313]	e employee with skin care programmes. 5615]
Section 2.2 Control of environmental exposure	1
Product characteristics	
Substance is complex UVCB. [ESCom-11133171600] Predominantly hy	drophobic. [ESCom-11133171601]
Amounts used	
Fraction of EU tonnage used in region	0,1
Regional use tonnage (tonnes/year)	3,2E+03
Fraction of Regional tonnage used locally	5,0E-04
Annual site tonnage (tonnes/year)	1,6E+00
Maximum daily site tonnage (kg/day)	4,4E+00
Frequency and duration of use	
Continuous release. [ESCom-10133212701]	
Emission days (days/year)	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor	10
Local marine water dilution factor	100
Other given operational conditions affecting environmental exposur	e
Release fraction to air from wide dispersive use (regional use only)	5,0E-03
Release fraction to wastewater from wide dispersive use	1,0E-06
Release fraction to soil from wide dispersive use (regional use only)	0.00025
Technical conditions and measures at process level (source) to preve	nt release
Common practices vary across sites thus conservative process release	
Technical onsite conditions and measures to reduce or limit discharg	
Risk from environmental exposure is driven by freshwater. [TCR1a]	
No wastewater treatment required [TCR6]	
Treat air emission to provide a typical removal efficiency of (%)	N/A
Treat onsite wastewater (prior to receiving water discharge) to provid	e the required 0,0
removal efficiency >= (%)	
If discharging to domestic sewage treatment plant, provide the require	ed onsite 0,0
wastewater removal efficiency of >= (%)	
Organisation measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. [ESCom-10133221228]	Sludge should be incinerated, contained or
reclaimed. [ESCom-10133221229]	
Conditions and measures related to municipal sewage treatment pla	nt
Not applicable as there is no release to wastewater. [ESCom-1013322	2100]
Estimated substance removal from wastewater via domestic sewage t	
Total efficiency of removal from wastewater after onsite and offsite (c	lomestic 92,5
treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	total wastewater 1,5E+03
treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and measures related to external treatment of waste for	disposal
Combustion emissions limited by required exhaust emission controls.	-
emissions considered in regional exposure assessment. [ESCom-10133	
waste should comply with applicable local and/or national regulations	
Conditions and measures related to external recovery of waste	-
This substance is consumed during use and no waste of the substance	is generated. [ESCom-10133223502]
Section 3 Exposure Estimation	<u> </u>
3.1. Health	
The ECETOC TRA tool has been used to estimate workplace exposures	unless otherwise indicated



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

3.2. Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the PETRORISK model. [ESCom-11133171701]

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.; 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 aspiration effects.; Risk management measures are based on qualitative risk characterisation. [ESCom-11133171315; ESCom-10133224709; ESCom-16354132600; ESCom-11133171322]

Worker CS 1: Bulk transfers; Dedicated facility (PROC 8b)

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Aerosol	4.798 mg/m ³ (TRA Workers) RCR = 0.293	Final RCR = 0.516
	Vapour 10-500 Pa	2.678 mg/m ³ (TRA Workers) RCR = 0.163	
	Vapour 500-10.000 Pa	0.901 mg/m ³ (TRA Workers) RCR = 0.055	
	Vapour >10.000 Pa	0.088 mg/m ³ (TRA Workers) RCR = 5.35E-3	
Inhalation, systemic, acute	Aerosol	19.19 mg/m ³ (TRA Workers) RCR = 0.013	Final RCR = 0.023
	Vapour 10-500 Pa	10.71 mg/m ³ (TRA Workers) RCR = 7.14E-3	
	Vapour 500-10.000 Pa	3.604 mg/m ³ (TRA Workers) RCR = 2.4E-3	
	Vapour >10.000 Pa	0.351 mg/m ³ (TRA Workers) RCR = 2.34E-4	
Dermal, systemic, long term	Dermal	1.371 mg/kg bw/day (TRA Workers) RCR = 0.471	Final RCR = 0.471
Combined routes, systemic, long-term			Final RCR = 0.987
Combined routes, systemic, acute			Final RCR = 0.023

Worker CS 2: Drum/batch transfers; Dedicated facility (PROC 8b)				
Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification	
Inhalation, systemic, long term	Aerosol	0.96 mg/m ³ (TRA Workers) RCR = 0.059	Final RCR = 0.081	
	Vapour 10-500 Pa Vapour 500-10.000 Pa	0.268 mg/m ³ (TRA Workers) RCR = 0.016 0.09 mg/m ³ (TRA Workers) RCR = 5.49E-3		
	Vapour >10.000 Pa	8.77E-3 mg/m ³ (TRA Workers) RCR = 5.35E- 4		
Inhalation, systemic, acute	Aerosol	3.838 mg/m ³ (TRA Workers) RCR = 2.56E-3	Final RCR < 0.01	
	Vapour 10-500 Pa	1.071 mg/m ³ (TRA Workers) RCR = 7.14E-4]	
	Vapour 500-10.000	0.36 mg/m ³ (TRA Workers) RCR = 2.4E-4		



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

	Ра		
	Vapour >10.000 Pa	0.035 mg/m ³ (TRA Workers) RCR = 2.34E-5	-
Dermal, systemic,	Dermal	1.371 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.471
long term	Dermai	0.471	
Combined routes,		0.771	Final RCR = 0.552
systemic, long-term			1 mar New - 0.352
Combined routes,			Final RCR < 0.01
systemic, acute			
systemic, acate			
Worker CS 3: Refuelli	ng (PROC 8b)		
Route of exposure	Assessment entity	Exposure concentration	Risk quantification
and type of effects	-		
Inhalation,	Aerosol	4.798 mg/m ³ (TRA Workers) RCR = 0.293	Final RCR = 0.516
systemic,			
long term			
	Vapour 10-500 Pa	2.678 mg/m ³ (TRA Workers) RCR = 0.163	
	Vapour 500-10.000	0.901 mg/m ³ (TRA Workers) RCR = 0.055	
	Ра		
	Vapour >10.000 Pa	0.088 mg/m ³ (TRA Workers) RCR = 5.35E-3	
Inhalation,	Aerosol	19.19 mg/m ³ (TRA Workers) RCR = 0.013	Final RCR = 0.023
systemic,			
acute			
	Vapour 10-500 Pa	10.71 mg/m ³ (TRA Workers) RCR = 7.14E-3	-
	Vapour 500-10.000	3.604 mg/m ³ (TRA Workers) RCR = 2.4E-3	
	Pa		
	Vapour >10.000 Pa	0.351 mg/m ³ (TRA Workers) RCR = 2.34E-4	-
Dermal, systemic,	Dermal	1.371 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.471
long term		0.471	
Combined routes,			Final RCR = 0.987
systemic, long-term			
Combined routes,			Final RCR = 0.023
systemic, acute			
		tems (PROC 2, PROC 1)	
Route of exposure	Assessment entity	Exposure concentration	Risk quantification
and type of effects			
Inhalation,	Vapour 10-500 Pa	1.339 mg/m ³ (TRA Workers) RCR = 0.082	Final RCR = 0.105
systemic,			
long term			4
	Vapour 500-10.000	0.36 mg/m ³ (TRA Workers) RCR = 0.022	
	Pa		4
Lab alat!	Vapour >10.000 Pa	0.018 mg/m^3 (TRA Workers) RCR = 1.07E-3	
Inhalation,	Vapour 10-500 Pa	5.355 mg/m ³ (TRA Workers) RCR = 3.57E-3	Final RCR < 0.01
systemic,			
acute	No. 500 10 005		4
	Vapour 500-10.000	1.442 mg/m ³ (TRA Workers) RCR = 9.61E-4	
	Pa		4
	Vapour >10.000 Pa	0.07 mg/m ³ (TRA Workers) RCR = 4.68E-5	
Dermal, systemic,	Dermal	1.37 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.471
long term		0.471	
Combined routes, systemic, long-term			Final RCR = 0.576
	1		

in compliance with EC Regulation no. 1907/2006 and s.m.i



GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

Combined routes,			Final RCR < 0.01
systemic, acute			
	uels; Closed systems (F	Exposure concentration	Diek eusentification
Route of exposure and type of effects	Assessment entity		Risk quantification
Inhalation, systemic, long term	Vapour 10-500 Pa	0.268 mg/m ³ (TRA Workers) RCR = 0.016	Final RCR = 0.028
	Vapour 500-10.000 Pa	0.18 mg/m ³ (TRA Workers) RCR = 0.011	
	Vapour >10.000 Pa	0.018 mg/m ³ (TRA Workers) RCR = 1.07E-3	-
Inhalation, systemic, acute	Vapour 10-500 Pa	1.071 mg/m ³ (TRA Workers) RCR = 7.14E-4	Final RCR < 0.01
	Vapour 500-10.000 Pa	0.721 mg/m ³ (TRA Workers) RCR = 4.8E-4	
	Vapour >10.000 Pa	0.07 mg/m ³ (TRA Workers) RCR = 4.68E-5	
Dermal, systemic, long term	Dermal	0.34 mg/kg bw/day (TRA Workers) RCR = 0.117	Final RCR = 0.117
Combined routes, systemic, long-term			Final RCR = 0.145
Combined routes, systemic, acute			Final RCR < 0.01

Worker CS 6: Equipment cleaning and maintenance (PROC 8a, PROC 28)

Route of exposure and type of effects	Assessment entity	Exposure concentration	Risk quantification
Inhalation, systemic, long term	Aerosol	1.919 mg/m ³ (TRA Workers) RCR = 0.117	Final RCR = 0.223
0	Vapour 10-500 Pa	1.339 mg/m ³ (TRA Workers) RCR = 0.082	
	Vapour 500-10.000 Pa	0.36 mg/m ³ (TRA Workers) RCR = 0.022	
	Vapour >10.000 Pa	0.035 mg/m ³ (TRA Workers) RCR = 2.14E-3	
Inhalation, systemic, acute	Aerosol	7.677 mg/m ³ (TRA Workers) RCR = 5.12E-3	Final RCR < 0.01
	Vapour 10-500 Pa	5.355 mg/m ³ (TRA Workers) RCR = 3.57E-3	
	Vapour 500-10.000 Pa	1.442 mg/m ³ (TRA Workers) RCR = 9.61E-4	
	Vapour >10.000 Pa	0.14 mg/m ³ (TRA Workers) RCR = 9.35E-5	
Dermal, systemic, long term	Dermal	1.371 mg/kg bw/day (TRA Workers) RCR = 0.471	Final RCR = 0.471
Combined routes, systemic, long-term			Final RCR = 0.694
Combined routes, systemic, acute			Final RCR < 0.01

Worker CS 7: Storage (PROC 2, PROC 1)

Route of exposure	Assessment entity	Exposure concentration	Risk quantification
and type of effects			



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023 REPLACES REVISION H - 31/03/2022 DEVELOPED BY: ICARO S.r.I ON BEHALF OF: ALMA PETROLI S.p.A.

Inhalation,	Vapour 10-500 Pa	1.339 mg/m ³ (TRA Workers) RCR = 0.082	Final RCR = 0.105		
systemic, long term					
	Vapour 500-10.000 Pa	0.36 mg/m ³ (TRA Workers) RCR = 0.022			
	Vapour >10.000 Pa	0.018 mg/m ³ (TRA Workers) RCR = 1.07E-3			
Inhalation,	Vapour 10-500 Pa	5.355 mg/m ³ (TRA Workers) RCR = 3.57E-3	Final RCR < 0.01		
systemic,					
acute					
	Vapour 500-10.000 Pa	1.442 mg/m ³ (TRA Workers) RCR = 9.61E-4			
	Vapour >10.000 Pa	0.07 mg/m ³ (TRA Workers) RCR = 4.68E-5			
Dermal, systemic,	Dermal	1.37 mg/kg bw/day (TRA Workers) RCR =	Final RCR = 0.471		
long term		0.471			
Combined routes,			Final RCR = 0.576		
systemic, long-term					
Combined routes,			Final RCR < 0.01		
systemic, acute					
4.2. Environment					
		ditions which may not be applicable to all site			
		risk management measures. [ESCom-1013322			
		ieved using onsite/offsite technologies, either			
combination. [ESCom-10133223601] Required removal efficiency for air can be achieved using onsite					
technologies, either alone or in combination. [ESCom-10133223602] Further details on scaling and control					
technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). [ESCom-					
-	10133223603]				
	terisation Ratio for Air		1,5E-04		
Maximum Risk Charac	cterisation Ratio for Wa	stewater Emissions RCRwater	2,9E-03		



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

S.P.A. REVISION I - 23/01/2023

ALM

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

ON BEHALF OF: ALMA PETROLI S.p.A.

12c - Use in fuel; Consumer

ETROLI

Section 1				
Title				
12c - Use in fuel; Consumer				
Use Descriptor				
Sector(s) of Use		42		
Product Categories		13		
Environmental Release Categ		9a, 9b		
Specific Environmental Relea		ESVOC SpERC 9.12c.v1		
Processes, tasks, activities co				
Covers consumer uses in liqu	iid fuels			
Assessment Method				
See Section 3.				
Section 2 Operational conditional	tions and risk management m	easures		
Section 2.1 Control of consu	mer exposure			
Product characteristics				
Physical form of product	Liquid			
Vapour pressure	-			
Concentration of	Covers concentrations up to	o 100.0 % [ESCom-11133171519]		
substance in product				
Frequency and duration of	Covers use up to 1.0 events	per day [ESCom-11133171521]		
use/exposure		-		
Other Operational	-			
Conditions affecting				
exposure				
Contributing Scenarios	Specific Risk Management	Measures and Operating Conditions		
General measures (skin	Avoid using without gloves.	[ESCom-10133224705 ESCom-10133224966]		
irritants) [ESCom-				
10133224705]				
General measures	applicable if classified as H224 or H225 or H226, refer to section 2 of the SDS; For			
(flammability) [ESCom-	measures to control risks from physicochemical properties, refer to main body of			
19350151900]	the SDS, section 7 and/or 8. []			
General measures	applicable if classified as H304, refer to section 2 of the SDS; Do not ingest. If			
(aspiration hazard)	swallowed then seek immediate medical assistance. []			
Fuels; Liquid; Automotive	For each use event, covers use amounts up to 44000.0 g/event [ESCom-			
refuelling; (; Diesel;)	11133171520]	-		
(PC_13)	Exposure duration = 0.05 h	/event [ESCom-11133170461]		
Based on	Outdoor use [ESCom-9313213238]			
Concawe_SCED_13_3_a	Assumes that potential dermal contact is limited to palm of one hand []			
Fuels; Liquid; Recreational	For each use event, covers use amounts up to 7500.0 g/event [ESCom-			
vehicles; (; Quad bikes or	11133171520]			
similar;) (PC_13)	Exposure duration = 0.017 h/event [ESCom-11133170461]			
Based on	Outdoor use [ESCom-9313213238]			
Concawe_SCED_13_7_a	Assumes that potential dermal contact is limited to palm of one hand []			
Fuels; Liquid; Garden	For each use event, covers use amounts up to 750.0 g/event [ESCom-			
equipment (PC_13)	11133171520]			
Based on	Exposure duration = 0.033 h/event [ESCom-11133170461]			
Concawe_SCED_13_4_a		mal contact is limited to inside hands / one hand /		
	palm of hands. [ESCom-123	55002181]		
Section 2.2 Control of enviro	onmental exposure			
Product characteristics				



in compliance with EC Regulation no. 1907/2006 and s.m.i

GASOIL (PETROLEUM), STRAIGHT-RUN FLUX ATZ

REVISION I - 23/01/2023

REPLACES REVISION H - 31/03/2022

DEVELOPED BY: ICARO S.r.I

Amounts used		71600] Predominantly hydrophobic. [ESCom-1	-	
Fraction of EU tonnag	ge used in region		0,1	
Regional use tonnage	1,4E+04			
Fraction of Regional t		5,0E-04		
Annual site tonnage (tonnes/year)		7,2E+00	
Maximum daily site to	onnage (kg/day)		2,0E+01	
Frequency and durat	ion of use			
Continuous release. [ESCom-10133212701]			
Emission days (days/			365	
Environmental factor	rs not influenced by ris	k management		
Local freshwater dilut	ion factor		10	
Local marine water di	lution factor		100	
Other given operatio	nal conditions affecting	g environmental exposure		
Release fraction to ai	r from wide dispersive u	use (regional use only)	1,0E-04	
Release fraction to w	astewater from wide di	spersive use	2,0E-07	
Release fraction to so	il from wide dispersive	use (regional use only)	0.00005	
Conditions and meas	ures related to munici	pal sewage treatment plant		
Not applicable as the	re is no release to wast	ewater. [ESCom-10133222100]		
Estimated substance	removal from wastewa	ter via domestic sewage treatment (%)	92,5	
Maximum allowable s	Aximum allowable site tonnage (MSafe) based on release following total wastewater			
treatment removal (k	g/d)			
Assumed domestic se	wage treatment plant f	flow (m3/d)	2,0E+03	
		al treatment of waste for disposal		
Combustion emission	s limited by required ex	khaust emission controls. [ESCom-1013322290	1] Combustion	
emissions considered	in regional exposure as	ssessment. [ESCom-10133222902] External tre	atment and disposal of	
waste should comply	with applicable local ar	nd/or national regulations. [ESCom-101332229	03]	
Conditions and meas	ures related to externa	al recovery of waste		
This substance is cons	sumed during use and r	no waste of the substance is generated. [ESCon	n-10133223502]	
Section 3 Exposure E	stimation			
3.1. Health				
The ECETOC TRA tool	has been used to estim	nate consumer exposures unless otherwise ind	icated.	
3.2. Environment				
The Hydrocarbon Blo	ck Method has been us	ed to calculate environmental exposure with tl	he PETRORISK model.	
[ESCom-1113317170]	1]			
Section 4 Guidance to	o check compliance wit	h the Exposure Scenario		
4.1. Health				
		eed the DN(M)EL when the risk management r		
		nted.; Available hazard data do not enable the		
	-	asures are based on qualitative risk characteris	sation. [ESCom-	
11122171215. 55000	n-16354132600; ESCom	-11133171322]		
111001/1010, E0COII				
		ing; (; Diesel;) (PC 13)		
Cons CS 1: Fuels; Liqu		Exposure concentration	Risk quantification	
Cons CS 1: Fuels; Liqu Route of exposure	id; Automotive refuell Assessment entity	Exposure concentration	nisk quantineation	
Cons CS 1: Fuels; Liqu Route of exposure and type of effects				
Cons CS 1: Fuels; Liqu Route of exposure and type of effects Inhalation,		0.222 mg/m ³ (TRA Consumers) RCR = 0.046	Final RCR = 0.046	
Cons CS 1: Fuels; Liqu Route of exposure and type of effects	Assessment entity Vapour 10-500 Pa	0.222 mg/m ³ (TRA Consumers) RCR = 0.046	-	
Cons CS 1: Fuels; Liqu Route of exposure and type of effects Inhalation,	Assessment entity		-	
Cons CS 1: Fuels; Liqu Route of exposure and type of effects Inhalation, systemic, long term	Assessment entity Vapour 10-500 Pa	0.222 mg/m ³ (TRA Consumers) RCR = 0.046	Final RCR = 0.046	

ALMA PETROLI

S.P.A. EVISION I - 23/01/2023	REPLACES F	REVISION H - 31/03/2022	DEVELOPED BY: ICARO S.r.I	ON BEHALF OF: ALMA PETRO	OLI S.p.
Dermal, systemic, long term	Dermal	0.175 mg/ = 0.14	0.175 mg/kg bw/day (TRA Consumers) RCR		1
Oral, systemic, long term	Dermal		0 mg/kg bw/day (TRA Consumers) RCR = 0		L
Combined routes,				Final RCR = 0.18	36
systemic, long-term					
Combined routes,				Final RCR = 0.11	18
systemic, acute					
Cons CS 2: Fuels; Liqu	id; Recreationa	l vehicles; (; Quad b	ikes or similar;) (PC 13)		
Route of exposure and type of effects	Assessment e	ntity Exposure	concentration	Risk quantificat	tion
Inhalation, systemic, long term	Vapour 10-50	0 Pa 0.068 mg/	m ³ (TRA Consumers) RCR = (0.014 Final RCR = 0.01	14
Inhalation, systemic, acute	Vapour 10-50	0 Pa 98.12 mg/ 3.1) RCR = 0.10	m ³ (ECETOC TRA Consumers	s Final RCR = 0.10)9
Dermal, systemic, long term	Dermal	0.35 mg/k 0.28	g bw/day (TRA Consumers)	RCR = Final RCR = 0.28	3
Oral, systemic, long term	Dermal	0 mg/kg b	w/day (TRA Consumers) RCF	R = 0 Final RCR < 0.01	L
Combined routes, systemic, long-term				Final RCR = 0.29	94
Combined routes,				Final RCR = 0.10)9
systemic, acute					
Cons CS 3: Fuels; Liqu	-				
Route of exposure and type of effects	Assessment e	ntity Exposure	concentration	Risk quantificat	tion
Inhalation, systemic, long term	Vapour 10-50	0 Pa 0.209 mg/	m ³ (TRA Consumers) RCR = (0.043 Final RCR = 0.04	13
Inhalation, systemic, acute	Vapour 10-50	0 Pa 150.4 mg/ 3.1) RCR = 0.16	m ³ (ECETOC TRA Consumers	s Final RCR = 0.16	57
Dermal, systemic, long term	Dermal	0.071 mg/ = 0.057	kg bw/day (TRA Consumers)) RCR Final RCR = 0.05	57
Oral, systemic, long term	Dermal		w/day (TRA Consumers) RCF	R = 0 Final RCR < 0.01	L
Combined routes,				Final RCR = 0.1	
systemic, long-term					
Combined routes,				Final RCR = 0.16	57
systemic, acute					
Guidance is based on		-	h may not be applicable to a ment measures. [ESCom-10	_	y be
	opropriate site-s	specific risk manage	ment measures. [ESCom-10	_	y be