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

1.1 **Product identifier**

Product name Naphtha (petroleum), sweetened

V4019-CONDENSATE-Naphtha (petroleum), unsweetened Product description

Trade Name **CONDENSATE** Product code COND, V4019 CAS No. 64741-42-0 265-042-6 EC No.

REACH Registration No. 01-2119474679-18-xxxx

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

Ide

dentified Use(s)	No	Exposure Scenario	Page:
	1	Distribution of Naphtha (petroleum), full-range straight-run (0 -	11
		1 % benzene content)	
	2	Formulation and (re)packing of Naphtha (petroleum), full-range	14
		straight-run (0 – 1 % benzene content) and Mixtures	
	3	Use of Gasoline (0 – 1 % benzene content) as a	16
		fuel(Industrial)	
	4	Use of Gasoline (0 – 1 % benzene content) as a	19
		fuel(Professional)	
	5	Use of Gasoline (0 – 1 % benzene content) as a	22
		fuel(Consumer)	

Uses advised against Anything other than the above.

1.3 Details of the supplier of the safety data sheet

Vitol SA Company Identification

Place des Bergues 3 1201 Geneva Switzerland +31 10 498 7200 +31 10 452 9545 E-mail (competent person) xreach@vitol.com

1.4 **Emergency telephone number**

Telephone

Fax

+44 (0) 1235 239 670, 24/7 Emergency Phone No. Languages spoken All official European languages.

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Regulation (EC) No. 1272/2008 (CLP) Flam. Liq. 1; H224

Asp. Tox. 1; H304 Skin Irrit. 2; H315 Muta. 1B; H340 Carc. 1B; H350 Repr. 2; H361fd

STOT SE 3; H336 (central nervous system, inhalation)

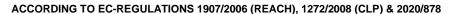
Aquatic Chronic 2; H411

According to Regulation (EC) No. 1272/2008 (CLP) 2.2 Label elements

V4019-CONDENSATE-Naphtha (petroleum), unsweetened Product description

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CONDENSATE V4019

Hazard Pictogram(s)









Signal Word(s)

Hazard Statement(s)

Danger

H224: Extremely flammable liquid and vapour.

H304: May be fatal if swallowed and enters airways.

H315: Causes skin irritation.

H340: May cause genetic defects.

H350: May cause cancer.

H361fd: Suspected of damaging fertility. Suspected of damaging the unborn

child

H336: May cause drowsiness or dizziness. (central nervous system, inhalation)

H411: Toxic to aquatic life with long lasting effects.

Precautionary Statement(s)

P201: Obtain special instructions before use.

P210: Keep away from heat, hot surfaces, sparks, open flames and other

ignition sources. No smoking.

P273: Avoid release to the environment.

P280: Wear protective gloves/protective clothing/eye protection/face

protection/hearing protection.

P301+P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.

P331: Do NOT induce vomiting.

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

2.3 Other hazards

May form explosive mixture with air. The vapour is heavier than air; beware of pits and confined spaces. May cause irritation to eyes and air passages.

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

spaces, product residue, tank waste and waste water, and unintentional releases should be made to help determine controls appropriate to local circumstances.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

-				
	SUBSTANCE	CAS No.	EC No.	%W/W
	Naphtha (petroleum), full-range straight-run	64741-42-0	265-042-6	100

SECTION 4: FIRST AID MEASURES



4.1 Description of first aid measures

Self-protection of the first aider

Eliminate sources of ignition. If it is suspected that fumes are still present, the responder should wear an appropriate mask or self-contained breathing apparatus. Drench contaminated clothing with water before removing to avoid risk of sparks from static electricity. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Avoid all contact. Do not ingest. If swallowed then seek immediate medical assistance.

Hydrogen sulphide (H2S) can accumulate in the headspace of storage tanks and reach potentially hazardous concentrations.

If there is any suspicion of inhalation: A self contained breathing apparatus should be worn. Remove to fresh air immediately.

H2S Warning:

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Eye contact

Ingestion

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2020/878



inhalation

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical advice/attention if you feel unwell.

Skin contact

IF ON SKIN (or hair): Remove contaminated clothing immediately and wash affected skin with plenty of water or soap and water. If irritation (redness, rash, blistering) develops, get medical attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

IF SWALLOWED: Do not induce vomiting because of risk of aspiration into the lungs. If vomiting occurs spontaneously, keep head below hips to prevent aspiration into the lungs. If unconscious, place in recovery position and get medical attention immediately. Do not give anything by mouth to an unconscious person. Get medical attention immediately. Do not wait for symptoms to appear. inhalation: May cause drowsiness or dizziness. Headache, nausea and vomiting. Skin contact: Causes skin irritation.

Eye contact: Causes serious eye irritation.

Ingestion: Aspiration into the lungs may cause chemical pneumonitis, which can be fatal. Ingestion may cause irritation of the gastrointestinal tract. Nausea, Vomiting and Diarrhoea

Treat symptomatically..

4.2 Most important symptoms and effects, both acute and delayed

4.3 Indication of any immediate medical attention and special treatment needed

Notes to a physician:

IF INHALED: If unconscious, place in recovery position and get medical attention immediately. Administer oxygen if available and artificial respiration if necessary. IF SWALLOWED: Do not induce vomiting because of risk of aspiration into the lungs. If aspiration is suspected obtain immediate medical attention. If vomiting occurs spontaneously, keep head below hips to prevent aspiration into the lungs.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Unsuitable extinguishing media

5.2 Special hazards arising from the substance or mixture

5.3 Advice for firefighters

Extinguish with sand or dry chemical. Foam, Carbon dioxide, Water fog or dry powder

Do not use water jet. Direct water jet may spread the fire.

Extremely flammable liquid and vapour. Will float and can be reignited on surface water. Decomposes in a fire giving off toxic fumes: A mixture of solid and liquid particulates and gases including unidentified organic and inorganic compounds. May form explosive mixture with air. Prevent liquid entering sewers, basements and any watercourses. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. If sulphur compounds are present in appreciable amounts, combustion products may include also H2S and SOx (sulfur oxides) or sulfuric acid

Fight fire with normal precautions from a reasonable distance. Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Keep containers cool by spraying with water if exposed to fire. Avoid release to the environment. Dike fire control water for later disposal.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures Caution - spillages may be slippery. Ensure operatives are trained to minimise exposures. Ensure suitable personal protection during removal of spillages. Eliminate sources of ignition. Shut off leaks if without risk. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid all contact with substance. Ensure adequate ventilation Do not breathe vapour. Do not ingest. If swallowed then seek immediate medical assistance. Do not use sparking tools. Use non-sparking ventilation systems, approved explosion-proof equipment, and intrinsically safe electrical systems.

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Small spillages:

Large spillages:

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2020/878



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H2S Warning: Product may release Hydrogen Sulphide. Exposure controls - These controls may include: Segregation of areas, Access only to authorised persons, Permit to work

systems, Confined space working procedures, Area H2S alarms, Personal H2S alarms, Personal escape sets, H2S awareness training. Please see section 8 for

appropriate personal protection equipment

Wear flame-resistant antistatic protective clothing.

Evacuate the area and keep personnel upwind. Drench contaminated clothing with water before removing to avoid risk of sparks from static electricity. Avoid all contact. Wear chemical protection suit and breathing apparatus. See Also

Section: 8.

6.2 **Environmental precautions** Avoid release to the environment. Do not allow to enter drains, sewers or

> watercourses. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body. If necessary: Dike area to contain the spill and prevent releases to sewers, drains,

or other waterways. 6.3 Methods and material for containment and cleaning Provided it is safe to do so, isolate the source of the leak. Use non-sparking equipment when picking up flammable spill. The vapour is heavier than air; up

> beware of pits and confined spaces. Ensure that the equipment is adequately grounded. Allow small spillages to evaporate provided there is adequate ventilation. Wear flame-resistant antistatic protective clothing. Wear chemical

protection suit and breathing apparatus.

Spillages onto land: In case of soil contamination, remove contaminated soil and treat in accordance with local regulations. Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a lidded container for disposal or recovery. Dispose of this

material and its container as hazardous waste

Small spillages: Allow small spillages to evaporate provided there is adequate

ventilation. Wear flame-resistant antistatic protective clothing.

Large spillages: Cover spillage with foam to reduce evaporation. Do not use

water iet.

Spillages on water or at sea: Collect as much as possible in clean container for reuse or disposal.

Small spillages: Contain product with floating barriers or other equipment.

Collect spilled product by absorbing with specific floating absorbents.

Large spillages: Open waters should be contained with floating barriers or other mechanical means and recovered, only if this is strictly necessary and if fire/explosion risks can be adequately prevented. Otherwise control the spreading

of the spillage, and let the substance evaporate naturally.

Reference to other sections See Section: 8,13 6.4

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

H2S Warning:

7.2

Conditions for safe storage, including any incompatibilities

Obtain special instructions before use. Keep away from sources of ignition - No smoking. Use only outdoors or in a well-ventilated area. Prevent vapour build up by providing adequate ventilation during and after use. May form explosive mixtures with air. Take action to prevent static discharges. Use non-sparking tools. All parts of the plant and equipment should be electrically bonded together and connected to earth. Electrical continuity should be checked at regular intervals. Antistatic clothing and footwear should be used. The vapour is heavier than air; beware of pits and confined spaces. Avoid all contact with substance. Do not ingest. If swallowed then seek immediate medical assistance. Do not breathe vapour. See Section: 8. Keep good industrial hygiene. Wash hands thoroughly after handling. Contaminated clothing should be thoroughly cleaned.

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. These controls may include: Segregation of areas, Access only to authorised persons, Permit to work systems, Confined space working procedures, Area H2S alarms, Personal H2S alarms, Personal escape sets, H2S awareness training. Light hydrocarbon vapours can build up in the headspace of containers. These

can cause flammability / explosion hazards. Bund storage facilities to prevent soil

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storage temperature

Incompatible materials

Specific end use(s)

Storage measures





and water pollution in the event of spillage. Keep only in original packaging. Keep containers properly sealed when not in use. Protect from sunlight. Containers of this material may be hazardous when empty since they retain product residue. Empty container may contain product residue which may result in flammable or explosive vapours inside the container.

Stable at ambient temperatures.

Suitable containers: Stainless steel, Mild steel

Do not store in: Synthetic materials Keep away from oxidising agents.

See Section: 1.2 and/or Exposure Scenario.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

7.3

8.1.1 Occupational exposure limits No Occupational Exposure Limit assigned. Users are advised to consider national Occupational Exposure Limits or other equivalent values.

8.1.2 **Biological Limit Value** Not established

PNECs and DNELs 8.1.3

PNEC: Not established Naphtha (petroleum), full-range straight-run is a hydrocarbon UVCB. The hydrocarbon block method is used in PETRORISK to calculate the environmental toxicity (HC5) of each group of components in the substance. These are used to estimate the environmental risk for the substance. Therefore individual environmental compartments PNECs are not available for

this product.

Naphtha (petroleum), full-range straight-run Derived no effect level	oral	inhalation	dermal
Worker - Long Term - Systemic effects	-	1300 mg/m³	-
Worker - Long Term - Local effects	-	840 mg/m ³	-
Worker - acute - Local effects	-	1100 mg/m³	-
Consumer - Long Term - Systemic effects	=	1200 mg/m³	-
Consumer - Long Term - Local effects	-	180 mg/m³	-
Consumer - acute - Local effects	-	640 mg/m ³	-

8.2 **Exposure controls**

8.2.1 Appropriate engineering controls Provide adequate ventilation, including appropriate local extraction if dusts, fumes or vapours are likely to be evolved. Store in a cool/low-temperature, wellventilated (dry) place away from heat and ignition sources. Guarantee that the eye flushing systems and safety showers are located close to the working place.

8.2.2 Individual protection measures, such as personal protective equipment

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Fuels are typically used, transferred and transported in closed systems. If exposure is likely (i.e. during sampling) the following advice may be appropriate. Keep good industrial hygiene. Always wash hands before smoking, eating and drinking. Do not eat, drink or smoke at the work place. Refer to annexes for exposure scenarios detailing use specific exposure controls

Eye / face protection



Use eye protection according to EN 166, designed to protect against liquid splashes.

Skin protection

Hand protection: Wear impervious gloves (EN374). Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer.

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Recommended: Nitrile rubber.

Body protection: Wear anti-static clothing and shoes.

small scale: Wear suitable coveralls to prevent exposure to the skin.

large scale: Chemical protection suit

Respiratory protection



When the product is heated/In case of inadequate ventilation wear respiratory protection. The use of a high efficiency filter (EN143) is recommended. Filter type

Closed system(s): Not normally required.

Thermal hazards not applicable

8.2.3 **Environmental exposure controls** Avoid release to the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

> Physical state Liquid Colour Colourless Odour Hydrocarbon Melting point/freezing point < - 60 °C Boiling point or initial boiling point and boiling range < 35 °C

Flammability not applicable - Liquid

Lower and upper explosion limit Flammable Limits (Lower) (%v/v) 1.4 Flammable Limits (Upper) (%v/v) 7.6

Flash point < -40 °C > 220 °C Auto-ignition temperature Decomposition temperature Not established Not established Kinematic viscosity <1 mm²/s @ 20 °C

Solubility Immiscible with water. Partition coefficient: n-octanol/water (log value) not applicable. Substance is complex UVCB.

Vapour pressure 4 - 240 kPa @ 37.8°C Density and/or relative density 0.62 - 0.88 g/cm3 @ 15 °C

Relative vapour density > 2

Particle characteristics Not established

SECTION 10: STABILITY AND REACTIVITY

Other information

9.2

10.1 Reactivity Stable under normal conditions Reacts with - Strong oxidising agents 10.2 Chemical stability Stable under normal conditions Hazardous polymerisation will not occur.

Product may release Hydrogen Sulphide.

10.3 Possibility of hazardous reactions Extremely flammable liquid and vapour. May form explosive mixture with air.

None Known

Vapours are heavier than air and may travel considerable distances to a source

of ignition and flashback. Product may release Hydrogen Sulphide. Conditions to avoid

10.4 Elevated temperature. Keep away from heat, hot surfaces, sparks, open flames

and other ignition sources. No smoking. Keep away from direct sunlight.

10.5 Incompatible materials Keep away from oxidising agents. Strong Acids and Alkalis. 10.6

Hazardous decomposition products A mixture of solid and liquid particulates and gases including unidentified

organic and inorganic compounds. Decomposes in a fire giving off toxic fumes:

COx, H2S, SOx,

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ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2020/878



SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes as defined in

Regulation (EC) No 1272/2008

Acute toxicity - Ingestion

Acute toxicity - Inhalation

Acute toxicity - Skin contact

Skin corrosion/irritation

Serious eye damage/irritation

Respiratory or skin sensitisation

Germ cell mutagenicity

Carcinogenicity

Reproductive toxicity

STOT - Single Exposure

STOT - Repeated Exposure

Information on other hazards

Endocrine disrupting properties

Aspiration hazard

11.2.2 Other information

12.1 **Toxicity** Short Term (acute):

11.2

11.2.1

Long Term (Chronic):

12.2 Persistence and degradability 12.3 Bioaccumulative potential

12.4 Mobility in soil All test data taken from existing ECHA registrations for the substances

mentioned.

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

LD50 > 5000 mg/kg bw/day (rat) (OECD 401)

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

LC50 Vapour > 5600 mg/m³ Air (rat) (OECD 403)

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

LD50 > 2000 mg/kg bw/day (rabbit) (OECD 402)

Skin Irrit. 2; Causes skin irritation. Irritating to skin. (rabbit) (OECD 404)

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

Not irritating to eyes (rabbit) (OECD 405)

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

Sensitisation (guinea pig) - Negative (OECD 406)

Muta. 1B; May cause genetic defects. Harmonised Classification.

ECHA Registration Endpoint summary: According to EU CLP Classification (EC no. 1272/2008), there is a regulatory requirement to classify gasoline and naphtha streams as hazardous for this endpoint when they contain >0.1%

benzene

Carc. 1B; May cause cancer. Harmonised Classification.

ECHA Registration Endpoint summary: According to EU CLP Classification (EC no. 1272/2008), there is a regulatory requirement to classify gasoline and naphtha streams as hazardous for this endpoint when they contain >0.1%

benzene

Repr. 2; Suspected of damaging fertility or the unborn child.

ECHA Registration Endpoint summary: According to EU CLP Classification (EC no. 1272/2008), there is a regulatory requirement to classify gasoline and naphtha streams as hazardous for this endpoint when they contain >0.1%

Toluene and/Or n-Hexane

STOT SE 3; May cause drowsiness or dizziness.

Weight of evidence approach

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

oral: No adverse effect observed (rat) (Halder CA, et al. (1985))

No adverse effect observed (rat) (OECD 453) inhalation:

Chronic - Systemic effects NOAEC 1402 mg/m³

No adverse effect observed. (Mouse) (OECD TG 410)

Chronic - Systemic effects NOAEL 375 mg/kg bw/day

Asp. Tox. 1; May be fatal if swallowed and enters airways. Harmonised

Classification.

Viscosity: <1 mm²/s @ 20 °C

This substance does not have endocrine disrupting properties with respect to

humans.

None.

dermal:

SECTION 12: ECOLOGICAL INFORMATION

Aguatic Chronic 2: Toxic to aquatic life with long lasting effects.

LL50 (Fish) (96hr) 10 mg/l (OCED 203)

According to the EU CLP Regulation (EC No. 1272/2008) criteria, substances in the low boiling point naphtha category are classified as Chronic Category 2

(H411) for the environment based on acute invertebrate and alga toxicity.

Readily biodegradable. (OECD 301F)

Substance is complex UVCB. The BCF (fish) of this substance components is

well below the criteria for bioaccumulation. Therefore, this substance is not considered as bioaccumulative substance. (ECHA registration dossier: PBT

assessment 2)

The product is predicted to have low mobility in soil. Immiscible with water.

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CONDENSATE V4019

12.5 Results of PBT and vPvB assessment Substance is complex UVCB. This substance does not contain PBT constituents

included in the SVHC candidate list at concentrations above 0.1%.

12.6 Endocrine disrupting properties This substance does not have endocrine disrupting properties with respect to

non-target organisms.

12.7 Other adverse effects None Known

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods Dispose of this material and its container as hazardous waste Do not empty into

drains, dispose of this material and its container at hazardous or special waste collection point. Disposal should be in accordance with local, state or national legislation. Containers of this material may be hazardous when empty since they retain product residue. Containers must not be punctured or destroyed by burning, even when empty. Allocation of a waste code number, according to the

IMDG/ADN

European Waste Catalogue, should be carried out in agreement with the

regional waste disposal company. Waste code: 13 07 01 EU Waste Codes: HP3, HP4, HP7, HP10, HP11, HP14

Waste classification according to Directive 2008/98/EC

(Waste Framework Directive)

SECTION 14: TRANSPORT INFORMATION

14.1	UN number	UN 1268	UN 1268
14.2	Proper Shipping Name	PETROLEUM DISTILLATES N.O.S.	PETROLEUM DISTILLATES N.O.S.
14.3	Transport hazard class(es)	3	3+(N2, CMR,F)
14.4	Packing group	1	1
14.5	Environmental hazards	MILIEUGEVAARLIJK / ENVIRONMENTALLY / DANGEREUX POUR/ L'ENVIRONNEMENT	HAZARDOUS/ UMWELTGEFÄHREND
14.6	Special precautions for user	See Section: 2	
14.7	Maritime transport in bulk according	This product is being carried under the scope of	f MARPOL Annex 1. Special Precautions: Refer to
	to IMO instruments	Chapter 7 'Handling and Storage' for special p	recautions which a user needs to be aware of, or
		needs to comply with, in connection with transp	port.
14.8	Additional information	ADR HIN: 33	EmS: F-E, S-E

ADR HIN: 33 EmS: F-E, S-E
Tunnel restriction code: 3 (D/E) Limited Quantity: 500ml

Limited Quantity: 500 ml

Special Provisions 664

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental

regulations/legislation specific for the substance or

mixture

15.1.1 EU regulations

Seveso Upper Tier: 25000 tonnes

ADR/RID

Lower Tier: 2500 tonnes

Annex XVII (Restrictions) In accordance with REACH Annex XVII entry 30 (c) this substance is exempt from

Entry 28 and 29 of REACH Annex XVII as it is to be sold as a fuel in a closed

system.

15.1.2 National regulations

Germany Wassergefährdungsklasse (Germany). WGK number: 3

15.2 Chemical Safety Assessment A REACH chemical safety assessment (CSA) has been carried out. Refer to

annexes for exposure scenarios detailing use specific exposure controls.

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: New SDS Regulation 2020/878 format, all sections have been updated to include new information. Please review SDS with care.

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ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2020/878



References:

Existing ECHA registration(s) for Naphtha (petroleum), full-range straight-run (CAS No. 64741-42-0) and Chemical Safety Report.

Literature References:

 Halder CA, et al., 1985, Hydrocarbon nephropathy in male rats: identification of the nephrotoxic components of unleaded gasoline., Toxicol. Ind. Health 1:67-87

EU Classification: This Safety Data Sheet was prepared in accordance with EC Regulation (EC) 1907/2006 (REACH), 1272/2008 (CLP) & 2020/878

Legend

ADR ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN ADN: European Agreement on the International Transport of Dangerous Goods by Inland Waterways
CLP Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

DNEL Derived no effect level

IATA IATA: International Air Transport Association
ICAO ICAO: International Civil Aviation Organization
IMDG IMDG: International Maritime Dangerous Goods

LTEL Long term exposure limit

PBT PBT: Persistent, Bioaccumulative and Toxic

PNEC Predicted No Effect Concentration

REACH Registration, Evaluation, Authorisation and Restriction of Chemicals

RID RID: Regulations concerning the international railway transport of dangerous goods

STEL Short term exposure limit

vPvB vPvB: very Persistent and very Bioaccumulative

OECD Organisation for Economic Cooperation and Development

ES Exposure Scenario

NOAEC no observed adverse effect concentration
NOAEL No Observed Adverse Effect Level

Hazard classification / Classification code:

Flam. Liq. 1, Flammable liquid, Category 1 Asp. Tox. 1, Aspiration Toxicity, Category 1 Skin Irrit. 2, Skin irritation, Category 2 Muta. 1B, Germ cell mutagen, Sub-category 1B

Carc. 1B, Carcinogen, Category 1B Repr. 2, Reproductive toxicant, Category 2

STOT SE 3, Specific target organ toxicity - Single exposure, Category 3

Aquatic Chronic 2, Hazardous to the aquatic environment (Chronic), Category 2

Hazard Statement(s)

H224: Extremely flammable liquid and vapour. H304: May be fatal if swallowed and enters airways.

H315: Causes skin irritation. H340: May cause genetic defects.

H350: May cause cancer.

H361fd: Suspected of damaging fertility. Suspected of damaging the

unborn child.

H336: May cause drowsiness or dizziness. (central nervous system,

inhalation)

H411: Toxic to aquatic life with long lasting effects.

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

Disclaimers

Information contained in this publication or as otherwise supplied to Users is believed to be accurate and is given in good faith, but it is for the Users to satisfy themselves of the suitability of the product for their own particular purpose. Vitol SA gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that exclusion is prevented by law. Vitol SA accepts no liability for loss or damage (other than that arising from death or personal injury caused by defective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.

Annex to the extended Safety Data Sheet (eSDS)

See below -

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ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2020/878



Naphtha (petroleum), full-range straight-run (0 -1% benzene content)

CAS Number 64741-42-0 EC Number 265-042-6

Summary of Parameters

Physical Parameters	
Vapour pressure (Pa)	4 – 240 @ 37.8 °C (Value used for exposure assessment = 340)
Partition Coefficient (log K _{OW})	2.00 - 20.43
Aqueous solubility (mg L ⁻¹)	1.6E+03 - 5.1E-18 (Value used for exposure assessment = 2.0E+02)
Molecular weight	not applicable
Biodegradability	Not defined
Human Health parameter (DNFLs)	

Human Health par	ameter (DNELs)		
	Short term	inhalation (mg/m³)	1100
Worker	Short term	dermal (mg/kg bw/day)	not applicable
vvoikei	Long Term	inhalation (mg/m³)	3.2 (= 1 ppm)*
	Long remi	dermal (mg/kg bw/day)	0.234*
		inhalation (mg/m³)	0.0032 (=1 ppb)* (0.93 mg/kg bw/day)
Consumer		dermal (mg/kg bw/day)	0.234*
		oral (mg/kg bw/day)	8.8

Environmental parameter (PNECs)

Naphtha (petroleum), full-range straight-run is a hydrocarbon UVCB. The hydrocarbon block method is used in PETRORISK to calculate the environmental toxicity (HC5) of each group of components in the substance. These are used to estimate the environmental risk for the substance. Therefore individual environmental compartments PNECs are not available for this product.

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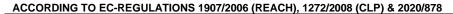
Contributing Scenarios

Workers	
PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

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^{*} Concentration: benzene (Worst case assumption. Contains benzene. @1%).

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PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC2 (Storage)	Use in closed, continuous process with occasional controlled exposure.
(1111)	Bulk product storage.
PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or
	processes with equivalent containment condition.
PROC3 (Sampling)	Use in closed, continuous process with occasional exposure. Sample collection
PROC8a (Maintenance)	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROCoa (Maintenance)	Clean down and maintenance of vessels and containers.
PROC8b (bulk)	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
FROCOD (Dalk)	Bulk transfer in a closed system
PROC8b (Drum)	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
1 NOOD (Bruin)	Drum or batch transfers.
PROC8b (Refueling)	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Tree cos (residening)	Refueling vehicles, light aircraft or marine craft
PROC8b (aircraft)	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
,	Refuelling aircraft
PROC15	Use as laboratory reagent.
PROC16	Using material as fuel sources, limited exposure to unburned product to be expected.
PROC16 (Additive)	Using material as fuel sources, limited exposure to unburned product to be expected. Use as a fuel additive.
Environment	OSC AS A TACT AUGITIVE.
ERC1	Manufacture of substance
ERC2	Formulation of preparations
ERC3	Formulation in materials
ERC4	Industrial use of processing aids in processes and products, not becoming part of articles
ERC5	Industrial use resulting in inclusion into or onto a matrix
ERC6a	Industrial use resulting in manufacture of another substance (use of intermediates)
ERC6b	Industrial use of reactive processing aids
ERC6c	Industrial use of monomers for manufacture of thermoplastics
ERC6d	Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers
ERC7	Industrial use of substances in closed systems
ERC9a	Wide dispersive indoor use of substances in closed systems
ERC9b	Wide dispersive outdoor use of substances in closed systems
Consumer	·
PC13	Fuels
	(Liquid: Automotive Refuelling)
	(Liquid Scooter Refuelling)
	(Liquid: Garden equipment - Refuelling)
	(Limited Condense and Line)

Exposure Scenario 1 – Distribution of Naphtha (petroleum), full-range straight-run (0 – 1 % benzene content)

(Liquid, Garden equipment - Use)

1.0 Contributing Scenarios	
Sector of uses SU	SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
	PROC1
	PROC2
	PROC2 (Storage)
Process category [PROC]	PROC3
Frocess category [FROC]	PROC3 (Sampling)
	PROC8a (Maintenance)
	PROC8b (bulk)
	PROC15
Chemical product category [PC]	not applicable
Article categories [AC]	not applicable
	ERC1
	ERC2
	ERC3
	ERC4
Environmental release categories [ERC]	ERC5
Environmental release categories [ENO]	ERC6a
	ERC6b
	ERC6c
	ERC6d
	ERC7

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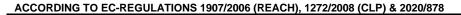


Specific Environmental Release Categories
SPERC

ESVOC SpERC 1.1b v.1

2.1 Control of worker exposure Product characteristics Physical form of product Covers concentrations up to 100% (s 1 % benzene content)
Physical form of product Covers concentration of substance in product Covers daily exposure area Covers daily exposure substance in product Covers daily exposure substance in the covers daily exposures up to 8 hours (unless stated differently). Frequency and duration per day Covers daily exposures up to 8 hours (unless stated differently). Frequency of use (days per year) 300 Cher operational conditions affecting worker exposure Characteristics of the surroundings Characteristics Characteristics Characteristics Characteristics Characteristics Characteristics Characteristics Characteristics Characteristics
Covers concentration of substance in product Covers concentrations up to 100% (s 1 % benzene content) Human factors not influenced by risk management Not defined Frequency and duration of use Exposure duration per day Covers daily exposures up to 8 hours (unless stated differently). Frequency of use (days per year) 300 Other operational conditions affecting worker exposure RROC3, PROC2 (Storage) Outdoor All other PROC5 Not defined Outdoor All other PROC5 Not defined Outdoor All other PROC5 Not defined Outdoor
Human factors not influenced by risk management
Potential exposure area Not defined
Covers daily exposures up to 8 hours (unless stated differently).
Exposure duration per day
Trequency of use (days per year) 300
Area of Use PROC3, PROC2 (Storage) Outdoor All other PROC's Not defined (default = Indoor) Characteristics of the surroundings Not defined General measures applicable to all activities Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). General measures sapplicable to all activities Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). General measures (skin intriants) Avoid direct skin contact with product, Identify potential areas for indirect skin contact. Wear glowes (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. General measures (carcinogens) Consider technical advances and process upgrades (including automation) for the elimination of releases. minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Cleanfliush equipment, where possible, prior to maintenance Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures: wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenario; clear up spills immediately and dispose of waste safely. Ensure as eystems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance. Fechnical conditions of use REOC1, PROC2, PROC3 Handle substance within a closed system. PROC3 (Sampling) Sample via a closed loop or other system to avoid ex
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Eye Protection No special measures are required. Other operational conditions affecting worker exposure
Other operational conditions affecting worker exposure
Other operational conditions affecting worker exposure
Wear suitable coveralls to prevent exposure to the skin. Clear transfer lines prior to de-coupling. Avoid dip sampling.
2.2 Control of environmental exposure
Amounts used
Fraction of EU tonnage used in region: 0.1
Regional use tonnage (tons/year): 3.1E+06
Fraction of Regional tonnage used locally: tons/year 2.0E-03
Annual site tonnage (tons/year): 62,000
Average daily use (kg/day) 210,000
Environment factors not influenced by risk management
Flow rate of receiving surface water (m³/d): Not defined (default = 18,000)

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CONDENSATE V4019

operational conditions						
Emission days (days/year):	300					
Release fraction to air from process (initial release prior to RMM):	1.0E-03					
Release fraction to wastewater from process (initial release prior to RMM):	1.0E-05					
Release fraction to soil from process (initial release prior to RMM):	1.0E-05					
Technical onsite conditions and measures to reduce or limit discharges, a	ir emissions and releases to soil					
Treat air emission to provide a typical removal efficiency of (%):	90					
If there is no discharge to domestic sewage treatment plant, Treat onsite						
wastewater (prior to receiving water discharge) to provide the required	0					
removal efficiency of (%):						
If discharging to domestic sewage treatment plant, provide the required onsite	2					
wastewater removal efficiency of (%):	0					
Treat soil emission to provide a typical removal efficiency of (%):	0					
Common practices vary across sites thus conservative process release estima	tes used. If discharging to domestic sewage treatment plant, no onsite					
wastewater treatment required.						
Organisational measures to prevent/limit release from site						
Do not apply industrial sludge to natural soils. Sludge should be incinerated, cor	ntained or reclaimed.					
Conditions and measures related to municipal sewage treatment plant						
Size of municipal sewage system/treatment plant (m³/d)	2000					
Degradation effectiveness (%)	95.7					
Conditions and measures related to external treatment of waste for disposal						
External treatment and disposal of waste should comply with applicable local and/or national regulations.						
Substance release quantities after risk management measures						
Maximum allowable site tonnage (MSafe) based on release following total	530,0000					
wastewater treatment removal (kg/d):	330,0000					

3. Exposure estimation and reference to its source

3.1 Human exposure prediction

Exposure assessment (method/calculation model)

ECETOC TRA (benzene content)

	inha	lation	der	Combined	
Process category [PROC]	inhalation exposure (mg/m³)	Risk characterisation ratio (RCR)	dermal exposure (mg/kg bw/day)	Risk characterisation ratio (RCR)	Risk characterisation ratio (RCR)
PROC1	0.00	0.00	0.03	0.15	0.15
PROC2	0.50	0.50	0.03	0.12	0.62
PROC2 (Storage)	0.35	0.35	0.14	0.57	0.94
PROC3	0.70	0.70	0.03	0.15	0.85
PROC3 (Sampling) 0.05	0.05	0.03	0.15	0.20	
PROC8a (Maintenance)	0.25	0.25	0.14	0.57	0.84
PROC8b (bulk)	0.15	0.15	0.07	0.30	0.45
PROC15	0.05	0.05	0.00	0.01	0.06

3.2 Environmental exposure prediction

Exposure assessment (method/calculation model)

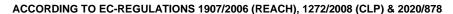
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Naphtha (petroleum), full-range straight-run is a hydrocarbon UVCB. The hydrocarbon block method is used in PETRORISK to calculate the environmental toxicity (HC5) of each group of components in the substance. These are used to estimate the environmental risk for the substance. Therefore individual environmental compartments PNECs are not available for this product.

Environmental exposure	STP	freshwater	marine water	soil	freshwater sediment	marine sediment
Predicted Environmental Exposure (PEC)	4.6E-03 mg/L	3.6E-03 mg/L	4.6E-05 mg/L	1,68E-4 mg/kg ww	0.15 mg/kg ww	4.6E-03 mg/kg ww
Risk characterisation ratio (RCR)	2.8E-04	1.2E-02	1.3E-04	2.3E-05	6.0E-03	1.9E-04

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Human exposure prediction:

Route of Exposure	Exposure (µg/kg ⁻¹ day ⁻¹)	Risk characterisation ratio (RCR)
oral	3.9	3.9E-02
inhalation	0.68	7.3E-04

4.0 Evaluation guidance to downstream user						
For scaling see	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 support the need for a DNEL to be established for other health effects. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). Exposure calculated for benzene and assumes that the substance contains 1 % benzene. Arithmetic scaling may be possible if the batch contains < 1 % benzene					
Exposure assessment	Worker ECETOC TRA					
instrument/tool/method	Environment	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.				

Exposure Scenario 2 – Formulation and (re)packing of Naphtha (petroleum), full-range straight-run (0 – 1 % benzene content)

1.0 Contributing Scenarios					
Sector of uses SU	SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)				
Process category [PROC]	PROC1 PROC2 PROC2 (Storage) PROC3 PROC3 (Sampling) PROC8a (Maintenance) PROC8b (bulk) PROC8b (Drum/batch transfers) PROC15				
Chemical product category [PC]	not applicable				
Article categories [AC]	not applicable				
Environmental release categories [ERC]	ERC2				
Specific Environmental Release Categories SPERC	ESVOC SPERC 2.2.v1				

2.0 Operational conditions and risk management measures						
2.1 Control of worker exposure						
Product characteristics						
Physical form of product	Liquid with high volatility.					
Concentration of substance in product	Covers concentrations up	to 100% (≤ 1 % benzene content)				
Human factors not influenced by risk managem	ent					
Potential exposure area	Not defined					
Frequency and duration of use						
Exposure duration per day	Covers daily exposures u	p to 8 hours (unless stated differently).				
Frequency of use (days per year)	300					
Other operational conditions affecting worker e	xposure					
A	PROC3	Outdoor				
Area of use	All other PROC's	Not defined (default = Indoor)				
Characteristics of the surroundings	Not defined					

General measures applicable to all activities

Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently).

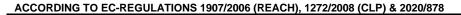
General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

General measures (carcinogens)

Consider technical advances and process upgrades (including automation) for the elimination of releases. minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance Where there is potential for exposure: restrict access to authorised persons;

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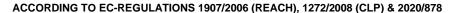




provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenario; clear up spills immediately and dispose of waste safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance.

Technical conditions of use					
	Handle substance with	hin a closed	evetem		
PROC1, PROC2, PROC2 (Storage), PROC3	Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure. (Efficiency of at least 95 %)				
PROC3 (Sampling) PROC8b (bulk), PROC8b (Drum/batch transfers)	Ensure material transfers are under containment or extract ventilation. (Efficiency of at least 97 %)				
PROC15	Use fume cupboard. (Efficiency of	at least 90 %)		
Organisational measures	<u>'</u>		·		
	Drain down and flush system prior to equipment break-in or maintenance. Retain drain				
PROC8a (Maintenance)	downs in sealed stora immediately. (Efficience		disposal or for subsequent recycle. Clear spills t 90 %)		
Risk management measures related to human hea	•	•	· · · · · · · · · · · · · · · · · · ·		
Respiratory protection	No special measures	are required			
	PROC2, PROC2 (Sto	rage)	Wear suitable gloves tested to EN374. (Efficiency of at least 80 %)		
Hand and/or Skin protection	PROC8a (Maintenanc	e)	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Efficiency of at least 90 %)		
Eye Protection	No special measures	are required			
Other operational conditions affecting worker exp	osure				
Wear suitable coveralls to prevent exposure to the ski		or to de-cou	pling. Avoid dip sampling.		
2.2 Control of environmental exposure			1 7 3		
Amounts used					
Fraction of EU tonnage used in region:		0.1			
Regional use tonnage (tons/year):		4.0E+05			
Fraction of Regional tonnage used locally: (tons/year)		7.4E-02			
Annual site tonnage (tons/year):		3.0E+04			
Average daily use (kg/day):		1.0E+05			
Environment factors not influenced by risk manage	vement	1.02+03			
Flow rate of receiving surface water (m³/d):	Jement	Not define	1/1-1-11 40 000		
Local freshwater dilution factor:			ed (default = 18,000)		
		10			
Local marine water dilution factor:		100			
operational conditions		200			
Emission days (days/year):	(DIMA)	300			
Release fraction to air from process (initial release pri		2.5E-02 1.1E-03			
Release fraction to wastewater from process (initial release prior to RMM):					
Release fraction to soil from process (initial release pr Technical onsite conditions and measures to redu		1.0E-04	ns and releases to soil		
Treat air emission to provide a typical removal efficien			is and releases to son		
		0			
If there is no discharge to domestic sewage treatment wastewater (prior to receiving water discharge) to prove removal efficiency of (%):		95.3			
If discharging to domestic sewage treatment plant, pro	ovide the required				
onsite wastewater removal efficiency of (%):		0			
Treat soil emission to provide a typical removal efficiency of (%):					
Common practices vary across sites thus conservative process release estimates used. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.					
Organisational measures to prevent/limit release to					
Do not apply industrial sludge to natural soils. Sludge		ontained or r	eciaimea.		
Conditions and measures related to municipal sewage treatment plant Size of municipal sewage system/treatment plant (m³/d) 2000					
Size of municipal sewage system/treatment plant (m³/d)					
Degradation effectiveness (%)		95.7			
Conditions and measures related to external treat					
External treatment and disposal of waste should comp		nd/or nation	al regulations.		
Substance release quantities after risk manageme	ent measures	1			
Maximum allowable site tonnage (MSafe) based on rewastewater treatment removal (kg/d):	elease following total	1.1E+05			

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3. Exposure estimation and reference to its source

3.1 Human exposure prediction

Exposure assessment (method/calculation model)

ECETOC TRA (benzene content)

	inhalation			dermal	Combined
Process category [PROC]	inhalation exposure (mg/m³)	Risk characterisation ratio (RCR)	dermal exposure (mg/kg bw/day)	Risk characterisation ratio (RCR)	Risk characterisation ratio (RCR)
PROC1	0.00	0.00	0.03	0.15	0.15
PROC2	0.50	0.50	0.03	0.12	0.62
PROC2 (Storage)	0.50	0.50	0.03	0.12	0.62
PROC3	0.70	0.70	0.03	0.15	0.85
PROC3 (Sampling)	0.05	0.05	0.03	0.15	0.20
PROC8a (Maintenance)	OC8a (Maintenance) 0.25 0.25		0.14	0.59	0.84
PROC8b (bulk)	0.05	0.05	0.07	0.30	0.35
PROC8b (Drum/batch transfers)		0.05	0.07	0.30	0.35
PROC15	0.05	0.05	0.00	0.01	0.06

3.2 Environmental exposure prediction

Exposure assessment (method/calculation model)

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

Naphtha (petroleum), full-range straight-run is a hydrocarbon UVCB. The hydrocarbon block method is used in PETRORISK to calculate the environmental toxicity (HC5) of each group of components in the substance. These are used to estimate the environmental risk for the substance. Therefore individual environmental compartments PNECs are not available for this product.

Environmental exposure	STP	freshwater	marine water	soil	freshwater sediment	marine sediment
Predicted Environmental Exposure (PEC)	2.4 mg/L	0.24 mg/L	2.4E-02 mg/L	1.67E-03 mg/kg ww	9.4E-01 mg/kg ww	9.4E-02 mg/kg ww
Risk characterisation ratio (RCR)	0.14	0.66	0.066	4.6E-03	0.91	0.091

Human exposure prediction:

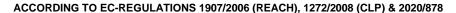
Route of Exposure	Exposure (μg/kg ⁻¹ day ⁻¹)	Risk characterisation ratio (RCR)	
oral	9.8	0.098	
inhalation	1700	0.18	

4.0 Evaluation guidance to downstream user						
For scaling see	Where other risk management measures/operational conditions are adopted, then users are managed to at least equivalent levels. Available hazard data do not support the need for a DNEL to be established for other hear					
Exposure assessment	Worker	ECETOC TRA				
instrument/tool/method	Environment	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.				

Exposure Scenario 3 – Use of Gasoline (0 – 1 % benzene content) as a fuel- Industrial

1.0 Contributing Scenarios	
Sector of uses SU	SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

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Process category [PROC]	PROC1 PROC2 PROC2 (Storage) PROC3 PROC8a (Maintenance) PROC8b (bulk) PROC8b (brum/batch transfers) PROC8b (Refuelling) PROC8b (Refuelling aircraft) PROC16 PROC16 (Additive)
Chemical product category [PC]	not applicable
Article categories [AC]	not applicable
Environmental release categories [ERC]	ERC7
Specific Environmental Release Categories SPERC	ESVOC SPERC 7.12a.v1

2.0 Operational conditions and risk manager	ment measures		
2.1 Control of worker exposure			
Product characteristics			
Physical form of product	Liquid with high volatility.		
Concentration of substance in product	Covers concentrations up	to 100% (≤ 1 % benzene content)	
Human factors not influenced by risk manag	gement		
Potential exposure area	Not defined		
Frequency and duration of use			
Exposure duration per day	Covers daily exposures up	to 8 hours (unless stated differently).	
Frequency of use (days per year)	300		
Other operational conditions affecting work	er exposure		
Avec of use	PROC3	Outdoor	
Area of use	All other PROC's	Not defined (default = Indoor)	
Characteristics of the surroundings	Not defined	•	

General measures applicable to all activities

Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently).

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

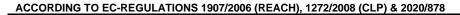
General measures (carcinogens)

Consider technical advances and process upgrades (including automation) for the elimination of releases. minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenario; clear up spills immediately and dispose of waste safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance.

Technical conditions of use				
PROC1, PROC2, PROC2 (Storage), PROC3, PROC16, PROC16 (Additive)	Handle substance within a closed system.			
PROC8b (bulk), PROC8b (Drum/batch transfers), PROC8b (Refuelling), PROC8b (Refuelling aircraft)	Ensure material transfers are 90 %)	Ensure material transfers are under containment or extract ventilation. (Efficiency of at least 90 %)		
Organisational measures	•			
PROC8a (Maintenance)	Drain down and flush system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Clear spills immediately. (Efficiency of at least 86 %)			
Risk management measures related to human heal	lth			
Respiratory protection	No special measures are requ	ired.		
	PROC2	Wear suitable gloves tested to EN374. (Efficiency of at least 80 %)		
Hand and/or Skin protection	PROC8a (Maintenance)	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Efficiency of at least 90 %)		
Eye Protection	No special measures are required.			
Other operational conditions affecting worker expo	osure			
Maar quitable according to provent avecause to the circ	Clear transfer lines prior to do s	acupling. Avoid dis compling		

Wear suitable coveralls to prevent exposure to the skin. Clear transfer lines prior to de-coupling. Avoid dip sampling.

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2.2 Control of environmental exposure					
Amounts used					
Fraction of EU tonnage used in region:	0.1				
Regional use tonnage (tons/year):	2.5E+05				
Fraction of Regional tonnage used locally: (tons/year)	1				
Annual site tonnage (tons/year):	2.5E+05				
Average daily use (kg/day):	8.2E+05				
Environment factors not influenced by risk management					
Flow rate of receiving surface water (m³/d):	Not defined (default = 18,000)				
Local freshwater dilution factor:	10				
Local marine water dilution factor:	100				
operational conditions					
Emission days (days/year):	300				
Release fraction to air from process (initial release prior to RMM):	5.00E-02				
Release fraction to wastewater from process (initial release prior to RMM):	1.0E-05				
Release fraction to soil from process (initial release prior to RMM):	0				
Technical onsite conditions and measures to reduce or limit discharges, a	ir emissions and releases to soil				
Treat air emission to provide a typical removal efficiency of (%):	95.0				
If there is no discharge to domestic sewage treatment plant, Treat onsite					
wastewater (prior to receiving water discharge) to provide the required	42.3				
removal efficiency of (%):					
If discharging to domestic sewage treatment plant, provide the required onsite					
wastewater removal efficiency of (%):	0				
Treat soil emission to provide a typical removal efficiency of (%):	0				
Common practices vary across sites thus conservative process release estima	tes used. If discharging to domestic sewage treatment plant, no onsite				
wastewater treatment required.					
Organisational measures to prevent/limit release from site					
Do not apply industrial sludge to natural soils. Sludge should be incinerated, cor	ntained or reclaimed.				
Conditions and measures related to municipal sewage treatment plant	T				
Size of municipal sewage system/treatment plant (m³/d)	2000				
Degradation effectiveness (%)	95.7				
Conditions and measures related to external treatment of waste for dispos	eal				
External treatment and disposal of waste should comply with applicable local an	External treatment and disposal of waste should comply with applicable local and/or national regulations.				
Substance release quantities after risk management measures					
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d):	4.30E+06				

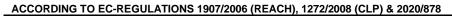
3. Exposure estimation and reference to its source

3.1 Human exposure prediction

	inhalation		der	mal	Combined
Process category [PROC]	inhalation exposure (mg/m³)	Risk characterisation ratio (RCR)	dermal exposure (mg/kg bw/day)	Risk characterisation ratio (RCR)	Risk characterisation ratio (RCR)
PROC1	0.00	0.00	0.03	0.15	0.15
PROC2	0.50	0.50	0.03	0.12	0.62
PROC2 (Storage)	0.35	0.35	0.14	0.59	0.94
PROC3	0.70	0.70	0.03	0.15	0.85
PROC8a (Maintenance)	0.35	0.35	0.14	0.59	0.94
PROC8b (bulk)	0.09	0.09	0.07	0.30	0.39
PROC8b (Drum/batch transfers)	0.15	0.15	0.07	0.30	0.45
PROC8b (Refuelling)	0.15	0.15	0.07	0.30	0.45
PROC8b (Refuelling aircraft)	0.15	0.15	0.07	0.30	0.45
PROC16	0.25	0.25	0.03	0.15	0.40

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1.11	ROC16 dditive)	0.25	0.25	0.03	0.15	0.40	
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3.2 Environmental exposure prediction

Exposure assessment (method/calculation model)

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

Naphtha (petroleum), full-range straight-run is a hydrocarbon UVCB. The hydrocarbon block method is used in PETRORISK to calculate the environmental toxicity (HC5) of each group of components in the substance. These are used to estimate the environmental risk for the substance. Therefore individual environmental compartments PNECs are not available for this product.

Environmental exposure	STP	freshwater	marine water	soil	freshwater sediment	marine sediment
Predicted Environmental Exposure (PEC)	0.18 mg/L	0.018 mg/L	1.8E-03 mg/L	4.7E-03 mg/kg ww	0.22 mg/kg ww	7.2E-03 mg/kg ww
Risk characterisation ratio (RCR)	0.011	0.051	5.1E-03	3.6E-03	0.074	7.0E-03

Human exposure prediction:

	Route of Exposure	Exposure (μg/kg ⁻¹ day ⁻¹)	Risk characterisation ratio (RCR)
ſ	oral	4.6	0.046
ſ	inhalation	1.3E+02	0.15

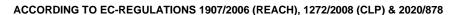
4.0 Evaluation guidance to dow	nstream user	
For scaling see	are managed to at least equivalent Available hazard data do not Further details on scaling and industries-libraries.html).	support the need for a DNEL to be established for other health effects. It control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-ene and assumes that the substance contains 1 % benzene. Arithmetic scaling may
Exposure assessment	Worker	ECETOC TRA
instrument/tool/method	Environment	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

Exposure Scenario 4 – Use of Gasoline (0 – 1 % benzene content) as a fuel- Professional

1.0 Contributing Scenarios	
Sector of uses SU	SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process category [PROC]	PROC1 PROC2 PROC2 (Storage) PROC3 PROC8a (Maintenance) PROC8b (bulk) PROC8b (Drum/batch transfers) PROC8b (Refuelling) PROC16
Chemical product category [PC]	not applicable
Article categories [AC]	not applicable
Environmental release categories [ERC]	ERC9a ERC9b
Specific Environmental Release Categories SPERC	ESVOC SPERC 9.12b.v1

2.0 Operational conditions and risk management measures		
2.1 Control of worker exposure		
Product characteristics		
Physical form of product	Liquid with high volatility.	
Concentration of substance in product	Covers concentrations up to 100% (≤ 1 % benzene content)	
Human factors not influenced by risk management		

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Potential exposure area	Not defined	Not defined				
Frequency and duration of use						
Exposure duration per day	Covers daily exposures up	Covers daily exposures up to 8 hours (unless stated differently).				
Frequency of use (days per year)	300	300				
Other operational conditions affecting work	ker exposure					
Avec of use	PROC3	Outdoor				
Area of use	All other PROC's	All other PROC's Not defined (default = Indoor)				
Characteristics of the surroundings	Not defined	Not defined				
	•					

General measures applicable to all activities

Release fraction to soil from process (initial release prior to RMM):

Treat air emission to provide a typical removal efficiency of (%):

Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently).

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

General measures (carcinogens)

Consider technical advances and process upgrades (including automation) for the elimination of releases, minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation. Drain down systems and clear transfer lines prior to breaking containment. Clean/flush equipment, where possible, prior to maintenance Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenario; clear up spills immediately and dispose of waste safely. Ensure safe systems of work or equivalent arrangements are in place to manage risks. Regularly inspect, test and maintain all control measures. Consider the need for risk based health surveillance.

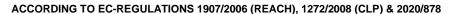
Handle substance within a closed system.				
Provide a good standa	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc.			
Controlled ventilation r	means air is	supplied or removed by a powered fan. (Efficiency of at		
least 30 %)				
Ensure material transf	ers are unde	er containment or extract ventilation. (Efficiency of at least		
90 %)				
Drain down and flush s	system prior	to equipment break-in or maintenance. Retain drain down		
in sealed storage pend	ding disposa	or for subsequent recycle. Clear spills immediately.		
(Efficiency of at least 8	33 %)			
lth				
No special measures a	are required.			
DDCC2		Wear suitable gloves tested to EN374. (Efficiency of at		
FROCZ		least 80 %)		
		Wear chemically resistant gloves (tested to EN374) in		
PROC8a (Maintenance)		combination with 'basic' employee training. (Efficiency of		
		at least 98 %)		
No special measures a	are required.			
osure				
n. Clear transfer lines prior	r to de-coupl	ing. Avoid dip sampling.		
	•			
	0.1			
	6.9E+04			
	5.0E-04			
Fraction of Regional tonnage used locally: (tons/year) Annual site tonnage (tons/year):				
	350			
	350 950			
ement				
ement	950	d (default = 18,000)		
ement	950	d (default = 18,000)		
ement	950 Not define	d (default = 18,000)		
ement	950 Not define	d (default = 18,000)		
ement	950 Not define	d (default = 18,000)		
or to RMM):	950 Not define 10 100	d (default = 18,000)		
•	Provide a good standar Controlled ventilation in least 30 %) Ensure material transfigurers good with transfigurers and flush sin sealed storage pendice (Efficiency of at least 8 lith No special measures and PROC2 PROC8a (Maintenance of No special measures and posure)	Provide a good standard of general Controlled ventilation means air is least 30 %) Ensure material transfers are under 90 %) Drain down and flush system prior in sealed storage pending disposal (Efficiency of at least 83 %) Ith No special measures are required. PROC2 PROC8a (Maintenance) No special measures are required. Dosure n. Clear transfer lines prior to de-coupled.		

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

1.0E-05

not applicable

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If there is no discharge to domestic sewage treatment plant, Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%):	0					
If discharging to domestic sewage treatment plant, provide the required onsite						
wastewater removal efficiency of (%):	0					
Treat soil emission to provide a typical removal efficiency of (%):	0					
Common practices vary across sites thus conservative process release estimates used. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.						
Organisational measures to prevent/limit release from site						
Do not apply industrial sludge to natural soils. Sludge should be incinerated, con	ntained or reclaimed.					
Conditions and measures related to municipal sewage treatment plant						
Size of municipal sewage system/treatment plant (m³/d)	2000					
Degradation effectiveness (%)	95.7					
Conditions and measures related to external treatment of waste for dispos	sal					
External treatment and disposal of waste should comply with applicable local and/or national regulations.						
Substance release quantities after risk management measures						
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d):	2.4E+03					

3. Exposure estimation and reference to its source

3.1 Human exposure prediction

Exposure assessment (method/calculation model)

ECETOC TRA (benzene content)

	inhalation		der	Combined	
Process category [PROC]	inhalation exposure (mg/m³)	Risk characterisation ratio (RCR)	dermal exposure (mg/kg bw/day)	Risk characterisation ratio (RCR)	Risk characterisation ratio (RCR)
PROC1	0.00	0.00	0.03	0.15	0.15
PROC2	0.50	0.50	0.03	0.12	0.62
PROC2 (Storage)	0.35	0.35	0.14	0.59	0.94
PROC3	0.70	0.70	0.03	0.15	0.85
PROC8a (Maintenance)	0.85	0.85	0.03	0.12	0.97
PROC8b (bulk)	0.25	0.25	0.07	0.30	0.55
PROC8b (Drum/batch transfers)	0.25	0.25	0.07	0.30	0.55
PROC8b (Refuelling)	0.25	0.25	0.07	0.30	0.55
PROC16	0.50	0.50	0.03	0.15	0.65

3.2 Environmental exposure prediction

Exposure assessment (method/calculation model)

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

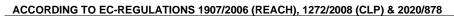
Naphtha (petroleum), full-range straight-run is a hydrocarbon UVCB. The hydrocarbon block method is used in PETRORISK to calculate the environmental toxicity (HC5) of each group of components in the substance. These are used to estimate the environmental risk for the substance. Therefore individual environmental compartments PNECs are not available for this product.

Environmental exposure	STP	freshwater	marine water	soil	freshwater sediment	marine sediment
Predicted Environmental Exposure (PEC)	2.1E-05 mg/L	3.1E-03 mg/L	1.1E-05 mg/L	3.5E-03 mg/kg ww	0.15 mg/kg ww	4.4E-03 mg/kg ww
Risk characterisation ratio (RCR)	1.3E-06	0.011	3.1E-05	2.3E-05	4.3E-03	1.2E-03

Human exposure prediction:

Route of Exposure	Exposure (µg/kg ⁻¹ day ⁻¹)	Risk characterisation ratio (RCR)
oral	3.8	0.038

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inhalation	0.54	5.8E-04	

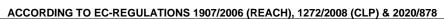
4.0 Evaluation guidance to downstream user				
For scaling see	Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not support the need for a DNEL to be established for other health effects. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). Exposure calculated for benzene and assumes that the substance contains 1 % benzene. Arithmetic scaling may be possible if the batch contains < 1 % benzene			
Exposure assessment	Worker	ECETOC TRA		
instrument/tool/method	Environment	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.		

Exposure Scenario 5 - Use of Gasoline (0 - 1 % benzene content) as a fuel- Consumer

1.0 Contributing Scenarios					
Sector of uses SU	SU21 Consumer uses: Private households (= general public = consumers)				
Process category [PROC]	not applicable				
Chemical product category [PC]	PC13 PC13 (Liquid: Automotive Refuelling) PC13 (Liquid Scooter Refuelling) PC13 (Liquid: Garden equipment - Refuelling) PC13 (Liquid, Garden equipment - Use)				
Article categories [AC]	not applicable				
Environmental release categories [ERC]	ERC9a ERC9b				
Specific Environmental Release Categories SPERC	ESVOC SPERC 9.12c.v1				

2.0 Operational conditions and risk management me 2.1 Control of worker exposure	easures		
Product characteristics			
Physical form of product	Liquid with high	volatility.	
Concentration of substance in product		ations up to 100% (≤ 1 % benzene content)	
Human factors not influenced by risk management			
Detactial exposure area (Skin contact)	PC13	Liquid: Automotive Refuelling Liquid Scooter Refuelling	210 cm ²
Potential exposure area (Skin contact)	PCI3	Liquid, Garden equipment - Use; Liquid: Garden equipment - Refuelling	420 cm ²
Frequency and duration of use			
Employed American (hours (Emplo)	PC13	Liquid: Automotive Refuelling; Liquid Scooter Refuelling	0.05
Exposure duration (hours/Event)		Liquid, Garden equipment - Use	0.03
		Liquid: Garden equipment - Refuelling	2.00
Frequency of use (days per year)		Liquid: Automotive Refuelling; Liquid Scooter Refuelling	52 (Covers frequency up to: weekly use)
riequency or use (days per year)	PC13	Liquid, Garden equipment - Use; Liquid: Garden equipment - Refuelling	26 (Covers frequency up to: once in two weeks.)
		Liquid: Automotive Refuelling	37500
Amounts used (g/Event)	PC13	Liquid Scooter Refuelling	3750
Amounts used (g/Event)	1013	Liquid, Garden equipment - Use; Liquid: Garden equipment - Refuelling	750
Other operational conditions affecting worker expos			
Area of use	Not defined		
Characteristics of the surroundings	PC13	Liquid: Automotive Refuelling;	Outdoor

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		Lincial Occupian Deficiallians			
		Liquid Scooter Refuelling;			
	<u> </u>	Liquid, Garden equipment - Use			
		Liquid: Garden equipment - Refuelling	34 m³		
risk management measures					
Respiratory protection	No specific meas				
Hand and/or Skin protection	No specific meas				
Eye Protection	No specific meas	sures identified.			
2.2 Control of environmental exposure					
Amounts used					
Fraction of EU tonnage used in region:		0.1			
Regional use tonnage (tons/year):		8.7E+04			
Fraction of Regional tonnage used locally: (tons/year)		5.0E-04			
Annual site tonnage (tons/year):		4.4E+01			
Average daily use (kg/day):		1.2E+02	1.2E+02		
Environment factors not influenced by risk managen	nent				
Flow rate of receiving surface water (m³/d):		Not defined (default = 18,000)			
Local freshwater dilution factor:		10			
Local marine water dilution factor:		100			
operational conditions					
Emission days (days/year):		365			
Release fraction to air from process (initial release prior	to RMM):	1.0E-02	114= 4=		
Release fraction to wastewater from process (initial release	ase prior to RMM):	1.0E-05	1.0E-05		
Release fraction to soil from process (initial release prior		1.0E-05	1.0E-05		
Conditions and measures related to municipal seway	ge treatment plant	·			
Size of municipal sewage system/treatment plant (m³/d)		2000	2000		
Degradation effectiveness (%)		95.7	95.7		
Conditions and measures related to external treatme	ent of waste for dis	sposal			
External treatment and disposal of waste should comply	with applicable loca	al and/or national regulations.			
Substance release quantities after risk management	measures				
Maximum allowable site tonnage (MSafe) based on release	ase following total	31000			
wastewater treatment removal (kg/d):		31000			

3. Exposure estimation and reference to its source

3.1 Human exposure prediction

Exposure assessment (method/calculation model)

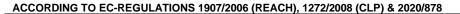
Yearly Use (Chronic)

ECETOC TRA	(benzene content)	

Chemical	inhalation		der	Combined	
product category [PC]	inhalation exposure (mg/m³)	Risk characterisation ratio (RCR)	dermal exposure (mg/kg bw/day)	Risk characterisation ratio (RCR)	Risk characterisation ratio (RCR)
PC13 (Liquid: Automotive Refuelling)	0.002	0.69	0.00	0.01	0.70
PC13 (Liquid Scooter Refuelling)	0.001	0.46	0.00	0.01	0.47
PC13 (Liquid, Garden equipment - Use)	0.003	0.87	0.00	0.00	0.87
PC13 (Liquid: Garden equipment - Refuelling)	0.001	0.18	0.00	0.02	0.20

3.2 Environmental exposure prediction			
Exposure assessment (method/calculation model)	The Hydrocarbon Block Method has been used to calculate		
	environmental exposure with the Petrorisk model.		

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Naphtha (petroleum), full-range straight-run is a hydrocarbon UVCB. The hydrocarbon block method is used in PETRORISK to calculate the environmental toxicity (HC5) of each group of components in the substance. These are used to estimate the environmental risk for the substance. Therefore individual environmental compartments PNECs are not available for this product.

Environmental exposure	STP	freshwater	marine water	soil	freshwater sediment	marine sediment
Predicted Environmental Exposure (PEC)	2.6E-05 mg/L	3.1E-03 mg/L	1.1E-05 mg/L	3.5E-03 mg/kg ww	0.15 mg/kg ww	4.5E-03 mg/kg ww
Risk characterisation ratio (RCR)	1.6E-06	0.011	3.1E-05	2.4E-05	4.3E-03	1.2E-05

Human exposure prediction:

Route of Exposure	Exposure (µg/kg ⁻¹ day ⁻¹)	Risk characterisation ratio (RCR)
oral	3.8	0.038
inhalation	0.54	5.8E-04

4.0 Evaluation guidance to do	ownstream user			
For scaling see	are managed to at le Available hazard dat Further details on sc industries-libraries.ht Exposure calculated	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 support the need for a DNEL to be established for other health effects. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). Exposure calculated for benzene and assumes that the substance contains 1 % benzene. Arithmetic scaling may be possible if the batch contains < 1 % benzene		
Exposure assessment instrument/tool/method	Consumer	ECETOC TRA		
	Environment	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.		