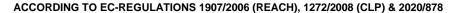
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#### SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name Naphtha (petroleum), light catalytic cracked

Product description V4039-Mogas / Naphtha light catalytic cracked-Naphtha (petroleum),

light catalytic cracked

Trade Name Mogas / Naphtha light catalytic cracked

 Product code
 NAPLCATA, V4039

 CAS No.
 64741-55-5

 EC No.
 265-056-2

REACH Registration No. 01-2119480177-34-xxxx

1.2 Relevant identified uses of the substance or mixture

and uses advised against

Identified use(s) **Exposure Scenario** Page: 1 Distribution of Naphtha (petroleum), light catalytic cracked (0 -12 1 % benzene content) 2 Formulation and (re)packing of Naphtha (petroleum), light 15 catalytic cracked (0 - 1 % benzene content) 3 Use of Naphtha (petroleum), light catalytic cracked (0 - 1 % 18 benzene content) as a fuel - Industrial 4 Use of Naphtha (petroleum), light catalytic cracked (0 - 1 % 21 benzene content) as a fuel - Professional

Anything other than the above.

benzene content) as a fuel - Consumer

5

1.3 Details of the supplier of the safety data sheet

Company Identification Vitol SA

Place des Bergues 3 1201 Geneva Switzerland +31 10 498 7200 +31 10 452 9545 xreach@vitol.com

1.4 Emergency Telephone Number

E-mail (competent person)

Telephone

Fax

Uses advised against

Emergency Phone No. +44 (0) 1235 239 670, 24/7 Language(s) 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)

Use of Naphtha (petroleum), light catalytic cracked (0 - 1 %

Aquatic Chronic 2; H411

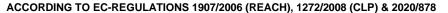
2.2 Label elements According to Regulation (EC) No. 1272/2008 (CLP)

Product description V4039-Mogas / Naphtha light catalytic cracked-Naphtha (petroleum),

light catalytic cracked

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Hazard Pictogram(s)









Signal Word(s) DANGER

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.

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. 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 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), light catalytic	64741-55-5	265-056-2	100
cracked			

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



Inhalation

Skin contact

Eye contact

Ingestion

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 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.

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.

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. All official European languages. Do not use sparking tools. Use non-sparking ventilation systems, approved explosion-proof equipment, and intrinsically safe electrical systems.

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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 Small spillages: Wear flame-resistant antistatic protective clothing. Evacuate the area and keep personnel upwind. Drench contaminated clothing Large spillages: 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.

See Section: 8,13

## **SECTION 7: HANDLING AND STORAGE**

Reference to other sections

7.1 Precautions for safe handling

6.4

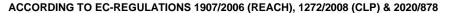
H2S Warning:

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 and water pollution in the event of spillage. Keep only in original packaging. Keep

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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.

Storage temperature Storage measures

Incompatible materials

7.3 Specific end use(s)

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Occupational Exposure Limits

**PNECs and DNELs** 

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

8.1.2 Biological limit value

8.1.3

alue

Not established.

PNEC: Not established. Naphtha (petroleum), light catalytic cracked 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), light catalytic	Oral	Inhalation	Dermal
cracked Derived No Effect Level			
Worker - Long Term - Systemic effects	-	1300 mg/m³	-
Worker - Long Term - Local effects	-	840 mg/m <sup>3</sup>	-
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 <sup>3</sup>	

#### 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, well-ventilated (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 (PPE)

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

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

Eye/ face protection



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.

Recommended: Nitrile rubber.

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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

Α1

Closed system(s): Not normally required.

Not applicable - Liquid

< 0 °C

> 220 °C Not established.

Not established

1 mm<sup>2</sup>/s @ 20 °C

Immiscible with water.

4 - 240 kPa @ 37.8°C 0.62 - 0.88 g/cm3 @ 15 °C

Flammable Limits (Lower) (%v/v) 1 Flammable Limits (Upper) (%v/v) 10

Not applicable. Substance is complex UVCB.

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 Not established Melting point/freezing point < - 60 °C Boiling point or initial boiling point and boiling range < 35 °C

Flammability

Lower and upper explosion limit

Flash point Auto-ignition temperature

Decomposition temperature

рΗ

Kinematic viscosity Solubility

Partition coefficient: n-octanol/water (log value)

Vapour pressure

Density and/or relative density

Relative vapour density

Particle characteristics

Not established

9.2 Other information None known.

## **SECTION 10: STABILITY AND REACTIVITY**

10.1 Reactivity Stable under normal conditions. Reacts with - Strong oxidising agents Chemical stability 10.2

> 2

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.

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

of ignition and flashback. Product may release Hydrogen Sulphide.

10.4 Conditions to avoid 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,

## SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008 **Acute toxicity - Ingestion** 

All test data taken from existing ECHA registrations for the substances

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

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	LD50 > 5000 mg/kg bw/day (rat) (OECD 401)
Acute toxicity - Inhalation	Based upon the available data, the classification criteria are not met.

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

Acute toxicity - Skin contact

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

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

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

Serious eye damage/irritation Based upon the available data, the classification criteria are not met.

Not irritating to eyes (rabbit) (OECD 405)

Respiratory or skin sensitisation Based upon the available data, the classification criteria are not met.

Sensitisation (guinea pig) - Negative (OECD 406)

Germ cell mutagenicity 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

Carcinogenicity 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

Reproductive toxicity 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 - Single Exposure STOT SE 3; May cause drowsiness or dizziness.

Weight of evidence approach

STOT - Repeated Exposure Based upon the available data, the classification criteria are not met.

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

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

Chronic - Systemic effects NOAEC 1402 mg/m³

Dermal: No adverse effect observed. (mouse) (OECD TG 410) Chronic - Systemic effects NOAEL 375 mg/kg bw/day

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

Classification.

Viscosity: 1 mm<sup>2</sup>/s @ 20 °C

11.2 Information on other hazards

12.5

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

humans.

**11.2.2** Other information None.

#### **SECTION 12: ECOLOGICAL INFORMATION**

**12.1 Toxicity** Aquatic Chronic 2; Toxic to aquatic life with long lasting effects.

Short Term (acute): LL50 (Fish) (96hr) 10 mg/l (OCED 203)

Long Term (Chronic): 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.

**12.2** Persistence and degradability Readily biodegradable. (OECD 301F)

**12.3** Bioaccumulative potential 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)

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

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

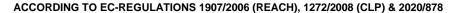
included in the SVHC candidate list at concentrations above 0.1%.

**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.

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## **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

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

regional waste disposal company. Waste code: 13 07 01 Waste classification according to Directive 2008/98/EC EU Waste Codes: HP3, HP4, HP7, HP10, HP11, HP14

(Waste Framework Directive)

## **SECTION 14: TRANSPORT INFORMATION**

ADR/RID IMDG/ADN

14.1 UN number UN 1268 UN 1268

14.2 Proper Shipping Name PETROLEUM DISTILLATES N.O.S.

14.3 Transport hazard class(es) 3 3+(N2, CMR,F)

14.4 Packing group

14.5 Environmental hazards MILEUGEVAARLIJK / ENVIRONMENTALLY HAZARDOUS / UMWELTGEFÄHRDEND /

DANGEREUX POUR L'ENVIRONNEMENT

14.6 Special precautions for user Vapour may create explosive atmosphere. The vapour is heavier than air; beware of pits and

confined spaces.

to IMO instruments to Chapter 7 'Handling and Storage' for special precautions which a user needs to be aware of,

or needs to comply with, in connection with transport.

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

This product is being carried under the scope of MARPOL Annex 1. Special Precautions: Refer

Limited Quantity: 500 ml

Special Provisions 664

## **SECTION 15: REGULATORY INFORMATION**

Maritime transport in bulk according

15.1 Safety, health and environmental

**Additional Information** 

regulations/legislation specific for the substance or

mixture

15.1.1 EU regulations

14.7

14.8

Seveso Upper Tier: 25000 tonnes 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

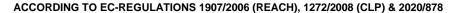
annexes for exposure scenarios detailing use specific exposure controls.

## **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.

References: Existing ECHA registration(s) for Naphtha (petroleum), light catalytic cracked (CAS No. 64741-55-5) and Chemical Safety Report.

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

STEL Short term exposure limit

vPvB vPvB: very Persistent and very Bioaccumulative

ES Exposure Scenario

#### 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), light catalytic cracked (0 -1% benzene content) CAS No. 64741-55-5

CAS No. 64741-55-5 EC No. 265-056-2

## **Summary of Parameters**

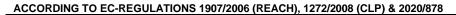
Physical Parame	ters			
Vapour pressure (Pa)			4 – 240 @ 37.8 °C (Value used for exposure assessment = 340)	
Partition Coefficie	nt (log K <sub>ow</sub> )		2.00 - 20.43	
Aqueous solubility	(mg L <sup>-1</sup> )		1.6E+03 - 5.1E-18 (Value used for exposure assessment = 2.0E+02)	
Molecular weight			Not applicable	
Biodegradability			Not defined	
Human health Pa	rameter (DNELs)			
	Short term	Inhalation (mg/m³)	1100	
Worker	Short term	Dermal (mg/kg bw/day)	Not applicable	
vvoikei	Long Torm	Inhalation (mg/m³)	3.2 (= 1 ppm)*	
	Long Term	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 <sup>-1</sup> bw/day <sup>-1</sup> )	8.8	

## **Environmental Parameter (PNECs)**

Naphtha (petroleum), light catalytic cracked 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.

<sup>\*</sup> Concentration: benzene (Worst case assumption. Contains benzene. @1%).

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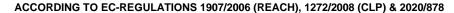
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## **Contributing Scenarios**

Workers	
PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
DD 0.00	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes wit
PROC2	equivalent containment conditions
DDOCO (Ctamana)	Use in closed, continuous process with occasional controlled exposure.
PROC2 (Storage)	Bulk product storage.
PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure
11003	or processes with equivalent containment condition.
PROC3 (Sampling)	Use in closed, continuous process with occasional exposure.
Troco (campinig)	Sample collection
DD000 (M : /	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated
PROC8a (Maintenance)	facilities
	Clean down and maintenance of vessels and containers.  Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC8b (Bulk)	Bulk transfer in a closed system
	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC8b (Drum)	Drum or batch transfers.
	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC8b (Refueling)	Refueling vehicles, light aircraft or marine craft
DD 0.001 ( ) ( )	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC8b (aircraft)	Refueling 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	
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 ERC6a	Industrial use resulting in inclusion into or onto a matrix
ERC6b	Industrial use resulting in manufacture of another substance (use of intermediates) 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 indoor use of substances in closed systems
Consumer	
PC13	Fuels
	(Automotive refueling)
	(Scooter refueling)
	(Garden equipment refueling)
	(Garden equipment use)

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## Exposure Scenario 1 - Distribution of Naphtha (petroleum), light catalytic cracked (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
Process category [PROC]	PROC1 PROC2 PROC2 (Storage) PROC3 PROC3 (Sampling) PROC8a (Maintenance) PROC8b (Bulk) PROC15
Chemical product category [PC]	Not applicable
Article Categories [AC]	Not applicable
Environmental release categories [ERC]	ERC4 ERC5 ERC6a ERC6b ERC6c ERC6d ERC7
Specific Environmental Release Categories SPERC	ESVOC SpERC 1.1b v.1

2.0 Operational conditions and risk managem	nent 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 10	00% (≤ 1 % benzene content)		
Human factors not influenced by risk manage	ement			
Potential exposure area	Not defined	Not defined		
Frequency and duration of use				
Exposure duration per day	Covers daily exposures up to 8	B hours (unless stated differently).		
Frequency of use (days per year)	300			
Other operational conditions affecting worker	r exposure			
Area of was	PROC3, PROC2 (Storage)	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, PROC3	Handle substance within a closed system.
PROC8b (Bulk)	Ensure material transfers are under containment or extract ventilation. (Efficiency of at
1 NOOD (Balk)	least 90 %)
PROC15	Use fume cupboard. (Efficiency of at least 90 %)
Organisational measures	
PROC3 (Sampling)	Sample via a closed loop or other system to avoid exposure. (Efficiency of at least 95 %)
	Drain down and flush system prior to equipment break-in or maintenance. Retain drain
PROC8a (Maintenance)	downs in sealed storage pending disposal or for subsequent recycle. Clear spills
	immediately. (Inhalation - efficiency of at least 90 %)
Risk management measures related to h	numan health
Respiratory protection	No special measures are required.

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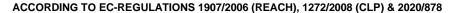
	PROC2		Wear suitable gloves tested to EN374. (Efficiency of at least 80 %)		
Hand and/or Skin protection	PROC8a (Maintenance)		Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Efficiency of at least 90 %)		
Eye Protection	No special measures	are require	d.		
Other operational conditions affecting worker exp	oosure				
Wear suitable coveralls to prevent exposure to the sk	kin. Clear transfer lines p	rior to de-co	oupling. 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):		4.3E+05			
Fraction of Regional tonnage used locally: tons/y	rear	2.0E-03			
Annual site tonnage (tons/year):		860			
Average daily use (kg/day)		43000			
Environment factors not influenced by risk manage	gement				
Flow rate of receiving surface water (m³/d):		Not define	ed (default = 18,000)		
Local freshwater dilution factor:		10			
Local marine water dilution factor:		100			
Operational conditions					
Emission days (days/year):		20			
Release fraction to air from process (initial release pr		1.0E-03			
Release fraction to wastewater from process (initial re		1.0E-05			
Release fraction to soil from process (initial release p	orior to RMM):	1.0E-05			
Technical onsite conditions and measures to red		1	ions and releases to soil		
Treat air emission to provide a typical removal efficie	, , ,	90			
If there is no discharge to domestic sewage treatmen wastewater (prior to receiving water discharge) to pro- removal efficiency of (%):		0			
If discharging to domestic sewage treatment plant, pronsite wastewater removal efficiency of (%):	·	0			
Treat soil emission to provide a typical removal efficient	,	0			
onsite wastewater treatment required.		imates used	d. If discharging to domestic sewage treatment plant, no		
Organisational measures to prevent/limit release					
Do not apply industrial sludge to natural soils. Sludge		contained o	r reclaimed.		
Conditions and measures related to municipal se		2000			
Size of municipal sewage system/treatment plant (m <sup>3</sup>	7(a)	2000			
Degradation effectiveness (%)	· · · · · · · · · · · · · · · · · · ·	95.9			
Conditions and measures related to external trea			and a middle Cons		
External treatment and disposal of waste should com	· · · · · · · · · · · · · · · · · · ·	and/or natio	onal regulations.		
Substance release quantities after risk management	ent measures				
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d):			5.9E+06		

## 3. Exposure estimation and reference to its source

3.1 Human exposure prediction

	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

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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 Enviro	nmental exposure predic	tion								
Exposure a	ssessment (method/calcu	lation model)	The Hydrocarb	on Block	Method	has	been	used	to	calculate
	•	,	environmental e	xposure w	vith the Pe	etroris	sk mod	el.		

Naphtha (petroleum), light catalytic cracked is a hydrocarbon UVCB. The hydrocarbon block method is used in PETRORISK to calculate the PEC of each group of components in the substance. These are used to estimate the environmental risk for the substance As the model assumes fractionation before entering the environment, the PEC is not of the substance as manufactured but is a some of the constituents expected to be present in the environmental compartment.

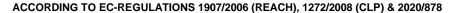
Environmental exposure	STP	freshwater	marine water	Soil	freshwater sediment	marine sediment
Predicted Environmental Exposure (PEC)	9.0E-03 mg/L	9.0E-04 mg/L	9.0E-05 mg/L	1.1E-05 mg/kg ww	7.0E-03 mg/kg ww	7.0E-04 mg/kg ww
Risk characterisation ratio (RCR)	1.2E-03	5.6E-03	5.6E-04	5.2E-06	7.3E-03	7.3E-04

Human exposure prediction:

Route of Exposure	Exposure (µg/kg <sup>-1</sup> day <sup>-1</sup> )	Risk characterisation ratio (RCR)
Oral	0.024	2.4E-04
Inhalation	0.06	6.4E-05

4.0 Evaluation guidance to dov	vnstream user	
For scaling see	risks are managed to at least Available hazard data do no Further details on scaling an for-industries-libraries.html).	t support the need for a DNEL to be established for other health effects. d control technologies are provided in SpERC factsheet (http://cefic.org/en/reach- izene and assumes that the substance contains 1 % benzene. Arithmetic scaling
Exposure assessment	Worker	ECETOC TRA
instrument/tool/method	Environment	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

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Exposure Scenario 2 – Formulation and (re)packing of Naphtha (petroleum), light catalytic cracked (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 (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 1009	% (≤ 1 % benzene content)			
Human factors not influenced by risk management					
Potential exposure area	Potential exposure area Not defined				
Frequency and duration of use					
Exposure duration per day	Covers daily exposures up to 8 ho	ours (unless stated differently).			
Frequency of use (days per year)	300				
Other operational conditions affecting worker exp	osure				
Area 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)

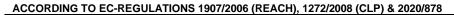
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise 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	Handle substance within a closed system.			
PROC3 (Sampling)	Sample via a closed loop or other	r system to avoid exposure. (Efficiency of at least 95 %)		
PROC8b (Bulk), PROC8b (Drum/batch transfers)	Ensure material transfers are und	ler containment or extract ventilation. (Efficiency of at		
PROCOD (Bulk), PROCOD (Diulii/balcii tialisieis)	least 97 %)			
PROC15	Use fume cupboard. (Efficiency of at least 90 %)			
Organisational measures				
	Drain down and flush system prior to equipment break-in or maintenance. Retain drain			
PROC8a (Maintenance)	downs in sealed storage pending disposal or for subsequent recycle. Clear spills			
	immediately. (Efficiency of at least 90 %)			
Risk management measures related to human hea	alth			
Respiratory protection	No special measures are required.			
Hand and/or Skin protection	BBOC2 BBOC2 (Storage)	Wear suitable gloves tested to EN374. (Efficiency of at		
Tianu anu/or Skin protection	PROC2, PROC2 (Storage)	least 80 %)		

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	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	d.		
Other operational conditions affecting worker exp	osure				
Wear suitable coveralls to prevent exposure to the ski	in. Clear transfer lines p	rior to de-co	oupling. 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):		3.6E+04			
Fraction of Regional tonnage used locally: (tons/year)		8.3E-01			
Annual site tonnage (tons/year):		3.0E+04			
Average daily use (kg/day):		1.0E+05			
Environment factors not influenced by risk manag	gement				
Flow rate of receiving surface water (m³/d):		Not define	ed (default = 18,000)		
Local freshwater dilution factor:		10			
Local marine water dilution factor:		100			
Operational conditions		.00			
Emission days (days/year):		300			
Release fraction to air from process (initial release pri	or to RMM):	2.5E-02			
Release fraction to wastewater from process (initial re		5.4E-04			
Release fraction to soil from process (initial release pr	rior to RMM):	1.0E-04			
Technical onsite conditions and measures to redu	ıce or limit discharges	, air emissi	ions and releases to soil		
Treat air emission to provide a typical removal efficier	ncy of (%):	0			
If there is no discharge to domestic sewage treatment	plant, Treat onsite				
wastewater (prior to receiving water discharge) to pro- removal efficiency of (%):	vide the required	95.5			
If discharging to domestic sewage treatment plant, proonsite wastewater removal efficiency of (%):	ovide the required	0			
Treat soil emission to provide a typical removal efficie	nov of (%):	0			
, ,,	• , ,		d. If discharging to domestic sewage treatment plant, no		
onsite wastewater treatment required.	•	mates used	i. If discharging to domestic sewage treatment plant, no		
Organisational measures to prevent/limit release to Do not apply industrial sludge to natural soils. Sludge		contained or	reclaimed		
Conditions and measures related to municipal sev		Joi Itali Ieu Ol	TEGIAIITEU.		
-		2000			
Size of municipal sewage system/treatment plant (m³/d)  Degradation effectiveness (%)			95.9		
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	mont of woots for dis-				
Conditions and measures related to external treat			and regulations		
External treatment and disposal of waste should comp	, · · · · · · · · · · · · · · · · · · ·	and/or natio	onal regulations.		
Substance release quantities after risk manageme Maximum allowable site tonnage (MSafe) based on re					
wastewater treatment removal (kg/d):	elease following total	1.1E+05			

## 3. Exposure estimation and reference to its source

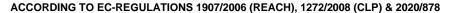
#### 3.1 Human exposure prediction

Exposure assessment (method/calculation model) EC

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)	0.50	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)	0.25	0.25	0.14	0.59	0.84
PROC8b (Bulk)	0.05	0.05	0.07	0.30	0.35

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PROC8b (Drum/batch transfers)	0.05	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), light catalytic cracked is a hydrocarbon UVCB. The hydrocarbon block method is used in PETRORISK to calculate the PEC of each group of components in the substance. These are used to estimate the environmental risk for the substance As the model assumes fractionation before entering the environment, the PEC is not of the substance as manufactured but is a some of the constituents expected to be present in the environmental compartment.

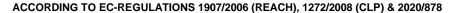
Environmental exposure	STP	freshwater	marine water	Soil	freshwater sediment	marine sediment
Predicted Environmental Exposure (PEC)	1.1 mg/L	0.11 mg/L	0.011 mg/L	2.4E-03 mg/kg ww	0.11 mg/kg ww	0.011 mg/kg ww
Risk characterisation ratio (RCR)	0.16	0.7	0.07	7.3E-03	0.91	0.091

Human exposure prediction:

Route of Exposure	Exposure (μg/kg <sup>-1</sup> day <sup>-1</sup> )	Risk characterisation ratio (RCR)
Oral	7.2	0.072
Inhalation	160	0.18

4.0 Evaluation guidance to d	lownstream user		
For scaling see	risks are managed to at l Available hazard data do Further details on scaling for-industries-libraries.ht Exposure calculated for	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/reachfor-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	
Exposure assessment instrument/tool/method	Environment	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.	

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Exposure Scenario 3 – Use of Naphtha (petroleum), light catalytic cracked (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
Process category [PROC]	PROC1 PROC2 PROC2 (Storage) PROC3 PROC8a (Maintenance) PROC8b (Bulk) PROC8b (Drum/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

ement measures			
Liquid with high volatility.			
Covers concentrations up	to 100% (≤ 1 % benzene content)		
ngement			
Not defined			
Covers daily exposures u	Covers daily exposures up to 8 hours (unless stated differently).		
300	300		
ker exposure			
PROC3	Outdoor		
All other PROC's	Not defined (default = Indoor)		
Not defined	Not defined		
	Covers concentrations up	Liquid with high volatility.  Covers concentrations up to 100% (≤ 1 % benzene content)  ngement  Not defined  Covers daily exposures up to 8 hours (unless stated differently).  300  ker exposure  PROC3  All other PROC's  Not defined (default = Indoor)	

## 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)

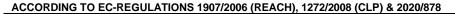
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise 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),	Ensure material transfers are und	ler containment or extract ventilation. (Efficiency of at	
PROC8b (refuelling), PROC8b (refuelling aircraft)	least 90 %)		
Organisational measures			
	Drain down and flush system prior to equipment break-in or maintenance. Retain drain		
PROC8a (Maintenance)	downs in sealed storage pending disposal or for subsequent recycle. Clear spills		
	immediately. (Efficiency of at least 86 %)		
Risk management measures related to human hea	lth		
Respiratory protection	No special measures are required.		
Lland and/or Chin protection	DDOC2	Wear suitable gloves tested to EN374. (Efficiency of at	
Hand and/or Skin protection	PROC2	least 80 %)	

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	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		d.
Other operational conditions affecting worker exp	osure		
Wear suitable coveralls to prevent exposure to the ski	n. Clear transfer lines p	rior to de-co	oupling. 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):		3.2E+04	
Fraction of Regional tonnage used locally: (tons/year)		1	
Annual site tonnage (tons/year):		3.2E+04	
Average daily use (kg/day):		1.1E+05	
Environment factors not influenced by risk manag	gement		
Flow rate of receiving surface water (m³/d):	•	Not define	ed (default = 18,000)
Local freshwater dilution factor:		10	-11
Local marine water dilution factor:		100	
Operational conditions		1.00	
Emission days (days/year):		300	
Release fraction to air from process (initial release pri	or to RMM):	5.00E-02	
Release fraction to wastewater from process (initial re		1.0E-05	
Release fraction to soil from process (initial release pr		0	
Technical onsite conditions and measures to redu	ıce or limit discharges	, air emissi	ions and releases to soil
Treat air emission to provide a typical removal efficien	ncy of (%):	95.0	
If there is no discharge to domestic sewage treatment	plant, Treat onsite		
wastewater (prior to receiving water discharge) to provermoval efficiency of (%):	vide the required	0	
If discharging to domestic sewage treatment plant, pro	ovide the required	0	
onsite wastewater removal efficiency of (%):		U	
Treat soil emission to provide a typical removal efficie	<u> </u>	0	
onsite wastewater treatment required.		imates used	I. If discharging to domestic sewage treatment plant, no
Organisational measures to prevent/limit release to			and delegated
Do not apply industrial sludge to natural soils. Sludge		contained oi	reclaimed.
Conditions and measures related to municipal sev			
Size of municipal sewage system/treatment plant (m³/d)		2000	
Degradation effectiveness (%)		95.9	
Conditions and measures related to external treat			
External treatment and disposal of waste should comp	, ,,	and/or nation	onal regulations.
Substance release quantities after risk manageme		1	
Maximum allowable site tonnage (MSafe) based on rewastewater treatment removal (kg/d):	elease following total	5.30E+06	

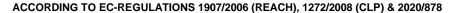
## 3. Exposure estimation and reference to its source

#### 3.1 Human exposure prediction

Exposure assessment (method/calculation model) ECETOC TRA (benzene content)

	Inhalation		Dei	Combined	
Process category	inhalation	Risk	dermal	Risk	Risk
[PROC]	exposure	characterisation	exposure	characterisation	characterisation
	(mg/m³)	ratio (RCR)	(mg/kg bw/day)	ratio (RCR)	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	0.35	0.35	0.14	0.59	0.94
(Storage)	0.33	0.33	0.14	0.59	0.94
PROC3	0.70	0.70	0.03	0.15	0.85
PROC8a	0.35	0.35	0.14	0.59	0.94
(Maintenance)	0.33	0.33	0.14	0.59	0.94
PROC8b	0.09	0.09	0.07	0.30	0.39
(Bulk)	0.09	0.09	0.07	0.30	0.39
PROC8b	0.15	0.15	0.07	0.30	0.45

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(Drum/batch transfers)					
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
PROC16 (Additive)	0.25	0.25	0.03	0.15	0.40

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), light catalytic cracked is a hydrocarbon UVCB. The hydrocarbon block method is used in PETRORISK to calculate the PEC of each group of components in the substance. These are used to estimate the environmental risk for the substance As the model assumes fractionation before entering the environment, the PEC is not of the substance as manufactured but is a some of the constituents expected to be present in the environmental compartment.

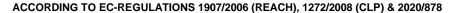
Environmental exposure	STP	freshwater	marine water	Soil	freshwater sediment	marine sediment
Predicted Environmental Exposure (PEC)	0.022 mg/L	2.2E-03 mg/L	2.2E-04 mg/L	2.5E-04 mg/kg ww	0.017 mg/kg ww	0.0017 mg/kg ww
Risk characterisation ratio (RCR)	3.1E-03	0.014	0.0014	7.7E-04	0.018	0.0018

Human exposure prediction:

Route of Exposure	Exposure (μg/kg <sup>-1</sup> day <sup>-1</sup> )	Risk characterisation ratio (RCR)
Oral	0.15	1.5E-03
Inhalation	17	1.9E-02

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/reachfor-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.	

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Exposure Scenario 4 – Use of Naphtha (petroleum), light catalytic cracked (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 manage	ement 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 mana	agement			
Potential exposure area	Not defined	Not defined		
Frequency and duration of use				
Exposure duration per day	Covers daily exposures u	Covers daily exposures up to 8 hours (unless stated differently).		
Frequency of use (days per year)	300			
Other operational conditions affecting work	ker exposure			
Area of use	PROC3	Outdoor		
Area or use	All other PROC's	Not defined (default = Indoor)		
Characteristics of the surroundings	Not defined	Not defined		
0 1 " 11 1 " 11 11	•			

## 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	Handle substance within a closed system.
PROC2 (Storage)	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. (Efficiency of at least 30 %)
PROC8b (Bulk), PROC8b (Drum/batch transfers), PROC8b (refuelling)	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 83 %)
Risk management measures related to human hea	alth
Respiratory protection	No special measures are required.

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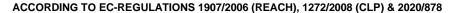
	PROC2		Wear suitable gloves tested to EN374. (Efficiency of at least 80 %)
Hand and/or Skin protection PROC8a (Maintenance		Wear chemically resistant gloves (tested to EN combination with 'basic' employee training. (Eff of at least 98 %)	
Eye Protection	No special measures	are require	d.
Other operational conditions affecting worker exp	oosure		
Wear suitable coveralls to prevent exposure to the sk	kin. Clear transfer lines p	orior to de-c	oupling. 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):		200	
Fraction of Regional tonnage used locally: (tons/year	·)	5.0E-04	
Annual site tonnage (tons/year):		0.1	
Average daily use (kg/day):		0.28	
Environment factors not influenced by risk mana	gement	·L	
Flow rate of receiving surface water (m³/d):	-	Not defin	ed (default = 18,000)
Local freshwater dilution factor:		10	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Local marine water dilution factor:		100	
Operational conditions		1	
Emission days (days/year):		365	
Release fraction to air from process (initial release pr	ior to RMM):	1.0E-02	
Release fraction to wastewater from process (initial re		1.0E-05	
Release fraction to soil from process (initial release p	orior to RMM):	1.0E-05	
Technical onsite conditions and measures to red	•	s, air emiss	ions and releases to soil
Treat air emission to provide a typical removal efficie		Not applie	cable
If there is no discharge to domestic sewage treatmen			
wastewater (prior to receiving water discharge) to pro	ovide the required	0	
removal efficiency of (%):			
If discharging to domestic sewage treatment plant, pr	rovide the required	0	
onsite wastewater removal efficiency of (%):		U	
Treat soil emission to provide a typical removal efficient	ency of (%):	0	
Common practices vary across sites thus conservat onsite wastewater treatment required.	tive process release est	imates use	d. If discharging to domestic sewage treatment plant, no
Organisational measures to prevent/limit release	from site		
Do not apply industrial sludge to natural soils. Sludge	e should be incinerated,	contained o	r reclaimed.
Conditions and measures related to municipal se			
Size of municipal sewage system/treatment plant (m³/d)		2000	
Degradation effectiveness (%)		95.9	
Conditions and measures related to external treat	tment of waste for disp	oosal	
External treatment and disposal of waste should com	ply with applicable local	and/or nati	onal regulations.
Substance release quantities after risk manageme			
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d):		110	

#### 3. Exposure estimation and reference to its source

3.1 Human exposure prediction

	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

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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), light catalytic cracked is a hydrocarbon UVCB. The hydrocarbon block method is used in PETRORISK to calculate the PEC of each group of components in the substance. These are used to estimate the environmental risk for the substance As the model assumes fractionation before entering the environment, the PEC is not of the substance as manufactured but is a some of the constituents expected to be present in the environmental compartment.

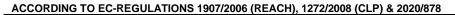
Environmental exposure	STP	freshwater	marine water	Soil	freshwater sediment	marine sediment
Predicted Environmental Exposure (PEC)	5.5E-08 mg/L	2.2E-04 mg/L	7.4E-07 mg/L	1.0E-05 mg/kg ww	5.2E-04 mg/kg ww	1.3E-06 mg/kg ww
Risk characterisation ratio (RCR)	8.1E-09	1.6E-03	4.8E-06	4.3E-06	5.4E-04	1.3E-06

Human exposure prediction:

Route of Exposure	Exposure (μg/kg <sup>-1</sup> day <sup>-1</sup> )	Risk characterisation ratio (RCR)
Oral	0.02	2.0E-04
Inhalation	0.04	4.3E-05

4.0 Evaluation guidance to	downstream user	
For scaling see	risks are managed to at Available hazard data do Further details on scaling for-industries-libraries.htr Exposure calculated for I	not support the need for a DNEL to be established for other health effects. If and control technologies are provided in SpERC factsheet (http://cefic.org/en/reachml). It is benzene and assumes that the substance contains 1 % benzene. Arithmetic scaling atch 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.

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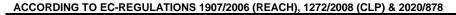


Exposure Scenario 5 – Use of Naphtha (petroleum), light catalytic cracked (0 – 1 % benzene content) as a fuel - Consumer

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 (Automotive refueling) PC13 (Scooter refueling) PC13 (Garden equipment refueling) PC13 (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 manage	ement measures			
2.1 Control of worker exposure				
Product characteristics	T., ., .,			
Physical form of product		nigh volatility.		
Concentration of substance in product		centrations up to 100% (≤ 1 % benzene c	content)	
Human factors not influenced by risk mana	gement	Automotive refueller	T	
		Automotive refueling; Scooter refueling	210 cm <sup>2</sup>	
Potential exposure area (Skin Contact)	PC13	Garden equipment use;		
		Garden equipment refueling	420 cm <sup>2</sup>	
Frequency and duration of use	•		•	
		Automotive refueling;	0.05	
Exposure duration (hours/Event)	PC13	Scooter refueling	0.05	
Exposure duration (nodis/Event)	1 0 13	Garden equipment use	0.03	
		Garden equipment refueling	2.00	
		Automotive refueling:	52	
		Scooter refueling	(Covers frequency up to:	
Frequency of use (days per year)	PC13	<u> </u>	weekly use)	
		Garden equipment use;	26 (Covers frequency up to: once	
		Garden equipment refueling	in two weeks.)	
		Automotive refueling	37500	
		Scooter refueling	3750	
Amounts used (g/Event)	PC13	Garden equipment use;		
		Garden equipment refueling	750	
Other operational conditions affecting work				
Area of use	Not defined			
		Automotive refueling;		
Characteristics of the aurroundings	PC13	Scooter refueling;	Outdoor	
Characteristics of the surroundings	PCIS	Garden equipment use		
		Garden equipment refueling	34 m³	
Risk Management Measures	-			
Respiratory protection		measures identified.		
Hand and/or Skin protection		measures identified.		
Eye Protection	No specific	measures identified.		
2.2 Control of environmental exposure				
Amounts used		1		
Fraction of EU tonnage used in region:			0.1	
Regional use tonnage (tons/year):		4.1E+03	1.7	
Fraction of Regional tonnage used locally: (tons/year)		5.0E-04	5.0E-04	
Annual site tonnage (tons/year):		2.0		
Average daily use (kg/day):		5.6		
Environment factors not influenced by risk	management			
Flow rate of receiving surface water (m³/d):		Not defined (default = 18,00	0)	
Local freshwater dilution factor:		10	10	
Local marine water dilution factor:		100	100	
Operational conditions				

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Emission days (days/year):	365		
Release fraction to air from process (initial release prior to RMM):	1.0E-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):	1.0E-05		
Conditions and measures related to municipal sewage treatment plant			
Size of municipal sewage system/treatment plant (m³/d)	2000		
Degradation effectiveness (%)	95.9		
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 wastewater treatment removal (kg/d):	2200		

#### 3. Exposure estimation and reference to its source

## 3.1 Human exposure prediction

Exposure assessment (method/calculation model)

ECETOC TRA (benzene content)

Yearly Use (Chronic)

	Inhalation		Dermal		Combined
Chemical 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 (Automotive refueling)	0.002	0.69	0.00	0.01	0.70
PC13 (Scooter refueling)	0.001	0.46	0.00	0.01	0.47
PC13 (Garden equipment use)	0.003	0.87	0.00	0.00	0.87
PC13 (Garden equipment refueling)	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.

Naphtha (petroleum), light catalytic cracked is a hydrocarbon UVCB. The hydrocarbon block method is used in PETRORISK to calculate the PEC of each group of components in the substance. These are used to estimate the environmental risk for the substance As the model assumes fractionation before entering the environment, the PEC is not of the substance as manufactured but is a some of the constituents expected to be present in the environmental compartment.

Environmental exposure	STP	freshwater	marine water	Soil	freshwater sediment	marine sediment
Predicted Environmental Exposure (PEC)	1.2E-06 mg/L	2.2E-04 mg/L	7.5E-07 mg/L	1.1E-05 mg/kg ww	5.2E-04 mg/kg ww	1.4E-06 mg/kg ww
Risk characterisation ratio (RCR)	1.6E-07	1.6E-03	4.8E-06	5.0E-06	5.4E-04	1.4E-06

Human exposure prediction:

Route of Exposure	Exposure (μg/kg <sup>-1</sup> day <sup>-1</sup> )	Risk characterisation ratio (RCR)
Oral	0.02	2.0E-04
Inhalation	0.04	4.3E-05

4.0 Evaluation guidance to downstream user			
	Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that		
	risks are managed to at least equivalent levels.		
For scaling see	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).		

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



	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 environr exposure with the Petrorisk model.