SAFETY DATA SHEET
NESTE PRO 4T ALKYLATE GASOLINE

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

1.1. Product identifier

Product name NESTE PRO 4T ALKYLATE GASOLINE

Product number ID 16476

Internal identification 7960, 130130

Synonyms; trade names Previous product name: Neste-Pienmoottoribensiini 4-T, product number 7665

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

Identified uses Special and small engine fuel.

1.3. Details of the supplier of the safety data sheet

Supplier Neste Markkinointi Oy
Keilaranta 21, Espoo, P.O.B. 95, FIN-00095 NESTE, FINLAND
Tel. +358 10 45811
lubetec@neste.com

1.4. Emergency telephone number

National emergency telephone number +358-9-471 977, +358-9-4711, Poison Information Centre

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

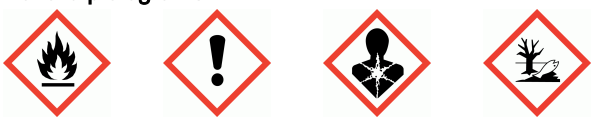
Physical hazards Flam. Liq. 1 - H224

Health hazards Skin Irrit. 2 - H315 STOT SE 3 - H336 Asp. Tox. 1 - H304

Environmental hazards Aquatic Chronic 2 - H411

2.2. Label elements

Hazard pictograms



Signal word Danger

Hazard statements H224 Extremely flammable liquid and vapour.
H315 Causes skin irritation.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.
H304 May be fatal if swallowed and enters airways.

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Precautionary statements

P102 Keep out of reach of children.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273 Avoid release to the environment.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P331 Do NOT induce vomiting.
P501 Dispose of contents/ container in accordance with local regulations.

Contains

Naphtha (petroleum), full-range alkylate, butane-contg., Hydrocarbons, C≥5, C5-6-rich

2.3. Other hazards

Other hazards

Volatile. Vapours may form explosive mixtures with air. Risk of soil and ground water contamination.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Naphtha (petroleum), full-range alkylate, butane-contg. **67 -74 %**

CAS number: 68527-27-5 EC number: 271-267-0 REACH registration number: 01-2119471477-29-XXXX

Classification
Flam. Liq. 1 - H224
Skin Irrit. 2 - H315
STOT SE 3 - H336
Asp. Tox. 1 - H304
Aquatic Chronic 2 - H411

Hydrocarbons, C≥5, C5-6-rich **26 - 33 %**

CAS number: 68476-50-6 EC number: 270-690-8 REACH registration number: 01-2119489866-14-0003

Classification
Flam. Liq. 1 - H224
Skin Irrit. 2 - H315
STOT SE 3 - H336
Asp. Tox. 1 - H304
Aquatic Chronic 2 - H411

Category: Low boiling point naphthas (Gasolines) **<1%**

CAS number: —

Classification
Flam. Liq. 1 - H224
Skin Irrit. 2 - H315
STOT SE 3 - H335
Asp. Tox. 1 - H304
Aquatic Chronic 2 - H411

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition comments

Mixture of a petroleum product and additives. Benzene (CAS 71-43-2) < 0,1 %. n-hexane (CAS 110-54-3) < 0,5 %. Total aromatics at maximum: 0,5 %.

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Other information Tests performed on the mixture do not support the environmental classifications of the components.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation Remove person to fresh air and keep comfortable for breathing. Get medical attention if symptoms are severe or persist.

Ingestion Do not induce vomiting. Get medical attention immediately.

Skin contact Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing.

Eye contact Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation persists after washing.

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

General information Irritating to skin. May irritate eyes. Vapours in high concentrations are narcotic. May cause nausea, headache, dizziness and intoxication. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.

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

Notes for the doctor Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards Extremely flammable liquid and vapour. Risk of explosion. Vapours may accumulate on the floor and in low-lying areas. Containers can burst violently or explode when heated, due to excessive pressure build-up.

Hazardous combustion products Carbon dioxide (CO2). Carbon monoxide (CO).

5.3. Advice for firefighters

Protective actions during firefighting Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Prevent fire extinguishing water from contaminating surface water or the ground water system.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid inhalation of vapours and contact with skin and eyes. Wear adequate protective equipment at all operations.

For non-emergency personnel Keep upwind to avoid inhalation of gases, vapours, fumes and smoke.

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For emergency responders Prevent unauthorized access. Vapours are heavier than air and may spread near ground and travel a considerable distance to a source of ignition and flash back. Use only in well-ventilated areas. Eliminate all ignition sources if safe to do so. Take precautionary measures against static discharge.

6.2. Environmental precautions

Environmental precautions Avoid release to the environment. Stop leak if safe to do so. Avoid the spillage or runoff entering drains, sewers or watercourses. Contain spillage with sand, earth or other suitable non-combustible material. Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air). Risk of soil and ground water contamination.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Immediately start clean-up of the liquid and contaminated soil. Small Spillages: Absorb spillage with sand or other inert absorbent. Pay attention to the fire and health hazards caused by the product.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions The product contains volatile substances which may spread in the atmosphere. Vapours may accumulate on the floor and in low-lying areas. Avoid heat, flames and other sources of ignition. Take precautionary measures against static discharges. Use explosion-proof electrical equipment. All handling should only take place in well-ventilated areas. Try to avoid product volatilization during handling and transferring. Avoid inhalation of vapours and contact with skin and eyes. Use personal protective equipment and/or local ventilation when needed. Do not eat, drink or smoke when using this product. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. During tank operations follow special instructions (risk of oxygen displacement and hydrocarbons).

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Flammable liquid storage. Store in accordance with local regulations. Protect from sunlight. Store in a demarcated bunded area to prevent release to drains and/or watercourses. Take precautions against leakage by constructing collecting pools and sewerage systems as well as by surfacing the loading and unloading stations. Store in tightly-closed, original container. Use containers made of the following materials: Stainless steel.

7.3. Specific end use(s)

Specific end use(s) Not known.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

Solvent naphtha, group 1: 500 mg/m3 (8h), HTP 2018/FIN.
The individual limit values can be applied for the hydrocarbons.

PNEC Not available.

Category: Low boiling point naphthas (Gasolines)

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DNEL	Workers - Inhalation; Short term systemic effects: 1300 mg/m³, (15 min) Workers - Inhalation; Short term local effects: 1100 mg/m³, (15 min) Workers - Inhalation; Long term local effects: 840 mg/m³, (8h) Consumer - Inhalation; Short term systemic effects: 1200 mg/m³, (15 min) Consumer - Inhalation; Short term local effects: 640 mg/m³, (15 min) Consumer - Inhalation; Long term local effects: 180 mg/m³, (24h)

8.2. Exposure controls

Appropriate engineering controls	All handling should only take place in well-ventilated areas. Use personal protective equipment and/or local ventilation when needed. Handle in accordance with good industrial hygiene and safety practice. During tank operations follow special instructions (risk of oxygen displacement and hydrocarbons).
Eye/face protection	Tight-fitting safety glasses. Face shield when needed.
Hand protection	Wear protective gloves. It is recommended that gloves are made of the following material: Nitrile rubber. The selected gloves should have a breakthrough time of at least 8 hours. Protection class 6. Protective gloves according to standards EN 420 and EN 374. Change protective gloves regularly.
Other skin and body protection	Protective clothing when needed. Wear anti-static protective clothing if there is a risk of ignition from static electricity.
Respiratory protection	Filter device/half mask Gas filter, type AX. Filter device could be used maximum 2 hours at a time. Filter devices must not be used in conditions where the oxygen level is low (< 19 vol.-%). At high concentrations a breathing apparatus must be used (self-contained or fresh air hose breathing apparatus). Filter must be changed often enough. Respirator according to standard EN 140.
Environmental exposure controls	Take precautions against leakage by constructing collecting pools and sewerage systems as well as by surfacing the loading and unloading stations.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Mobile liquid.
Colour	Clear. Bluish when lubricant has been added.
Odour	Hydrocarbons. Mild.
Odour threshold	-
pH	-
Melting point	-
Initial boiling point and range	30 - 200°C
Flash point	< 0°C
Upper/lower flammability or explosive limits	Lower flammable/explosive limit: 1,4 % Upper flammable/explosive limit: 7,6 %
Vapour pressure	50 - 65 kPa @ 38°C , 84.1 kPa @ 50°C
Vapour density	> 3 (Air = 1.0)
Relative density	0,68 - 0,72 @ 15/4°C
Solubility(ies)	The product has poor water-solubility. < 50 mg/l @ 20°C
Partition coefficient	log Kow: > 3

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Auto-ignition temperature	~ 400°C
Decomposition Temperature	-
Viscosity	Kinematic viscosity < 1 mm2/s @ 38°C
Explosive properties	Not considered to be explosive.
Oxidising properties	Does not meet the criteria for classification as oxidising.

9.2. Other information

Other information	Not known.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability	Stable at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	No potentially hazardous reactions known.

10.4. Conditions to avoid

Conditions to avoid	Keep away from heat, sparks and open flame.

10.5. Incompatible materials

Materials to avoid	Oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products	Does not decompose when used and stored as recommended.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects	Based on available data the classification criteria are not met.

Skin corrosion/irritation

Skin corrosion/irritation	Irritating to skin. (OECD 404) The product irritates mucous membranes and may cause abdominal discomfort if swallowed. May cause respiratory irritation.

Serious eye damage/irritation

Serious eye damage/irritation	Based on available data the classification criteria are not met. (OECD 405).

Skin sensitisation

Skin sensitisation	Based on available data the classification criteria are not met. (OECD 406).

Germ cell mutagenicity

Genotoxicity - in vitro	Based on available data the classification criteria are not met. (OECD 471, 476).
Genotoxicity - in vivo	Based on available data the classification criteria are not met. (OECD 475, EPA OPPTS 870.5395).

Carcinogenicity

Carcinogenicity	Based on available data the classification criteria are not met. (OECD 451)

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Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met. (OECD 416, 421)

Reproductive toxicity - development Based on available data the classification criteria are not met. (OECD 414)

Specific target organ toxicity - single exposure

STOT - single exposure May cause nausea, headache, dizziness and intoxication. Anaesthetic in high concentrations.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met. (OECD 410, 412, 453, EPA OPPTS 870.3465).

Aspiration hazard

Aspiration hazard May be fatal if swallowed and enters airways. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.

Toxicological information on ingredients.

Naphtha (petroleum), full-range alkylate, butane-contg.

Acute toxicity - oral

Notes (oral LD_{50}) LD_{50} > 5000 mg/kg, Oral, Rat (OECD 401).

Acute toxicity - dermal

Notes (dermal LD_{50}) LD_{50} > 2000 mg/kg, bw, Dermal, Rabbit (OECD 402).

Acute toxicity - inhalation

Notes (inhalation LC_{50}) LC_{50} > 5610 mg/m³, Inhalation, Rat (OECD 403).

Category: Low boiling point naphthas (Gasolines)

Acute toxicity - oral

Notes (oral LD_{50}) LD_{50} > 5000 mg/kg, Oral, Rat (OECD 401).

Acute toxicity - dermal

Notes (dermal LD_{50}) LD_{50} > 2000 mg/kg, bw, Dermal, Rabbit (OECD 402).

Acute toxicity - inhalation

Notes (inhalation LC_{50}) LC_{50} > 5610 mg/m³, Inhalation, Rat (OECD 403).

SECTION 12: Ecological information

12.1. Toxicity

Toxicity Toxic to aquatic life with long lasting effects.

Acute aquatic toxicity

Acute toxicity - aquatic invertebrates EC_{50}, 48 hours: > 100 mg/l,
NOEC, 48 hours: 100 mg/l, Daphnia magna
, WAF (OECD 202, ref. report 086/15).

Acute toxicity - aquatic plants EC_{50}, 72 hours: > 100 mg/l,
NOEC, 72 hours: 100 mg/l, Pseudokirchneriella subcapitata
, WAF (OECD 201, ref. report 081/15)

Ecological information on ingredients.

Naphtha (petroleum), full-range alkylate, butane-contg.

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Acute aquatic toxicity

Acute toxicity - fish	LL_{50}, 96 hours: 8,2 mg/l, (EPA 66013-75-009, OECD 203)
Acute toxicity - aquatic invertebrates	EL50, 48 hours: 4,5 mg/l, NOELR, 48 hours: 0,5 mg/l, (OECD 202).
Acute toxicity - aquatic plants	EL50, 96 hours: 3,7 mg/l, NOELR, 72 hours: 0,5 mg/l, (OECD 201)

Chronic aquatic toxicity

Chronic toxicity - fish early life stage	EL50, 21 days: 10 mg/l, NOELR, 21 days: 2,6 mg/l, (OECD 211).

Category: Low boiling point naphthas (Gasolines)

Acute aquatic toxicity

Acute toxicity - fish	LL_{50}, 96 hours: 8,2 mg/l, (EPA 66013-75-009, OECD 203)
Acute toxicity - aquatic invertebrates	EL50, 48 hours: 4,5 mg/l, NOELR, 48 hours: 0,5 mg/l, (OECD 202).
Acute toxicity - aquatic plants	EL50, 96 hours: 3,7 mg/l, NOELR, 72 hours: 0,5 mg/l, (OECD 201)

Chronic aquatic toxicity

Chronic toxicity - fish early life stage	EL50, 21 days: 10 mg/l, NOELR, 21 days: 2,6 mg/l, (OECD 211).

12.2. Persistence and degradability

Phototransformation	The product contains volatile substances which may spread in the atmosphere. Can be photodegraded in the atmosphere.
Stability (hydrolysis)	No significant reaction in water.
Biodegradation	Inherently biodegradable. (OECD 301F, ISO/DIS 14593, CAS 68527-27-5 & 68476-50-6)

12.3. Bioaccumulative potential

Bioaccumulative potential	Possibly bioaccumulative.
Partition coefficient	log Kow: > 3

12.4. Mobility in soil

Mobility	Volatile. Volatilization is the fastest and most dominant elimination process in surface water and soil. Product can penetrate soil until reaching the surface of ground water. The product contains substances which are bound to particulate matter and are retained in soil.

12.5. Results of PBT and vPvB assessment

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Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Product residues retained in emptied containers can be hazardous. Waste packaging should be collected for reuse or recycling.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID) 1203

14.2. UN proper shipping name

Proper shipping name (ADR/RID) UN 1203, GASOLINE

14.3. Transport hazard class(es)

ADR/RID class 3

14.4. Packing group

ADR/RID packing group II

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
MARINE POLLUTANT

14.6. Special precautions for user

Hazard Identification Number (ADR/RID) 33

Tunnel restriction code (D/E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Noxious liquid, F, (6) n.o.s., (BE 95 SE, contains mineral oil). Pollution category: Cat Y Ship type: 2

SECTION 15: Regulatory information

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

EU legislation Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).
Commission Regulation (EU) No 2015/830 of 28 May 2015.
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

NESTE PRO 4T ALKYLATE GASOLINE

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet	DNEL = Derived No-Effect Level PNEC = Predicted No-Effect Concentration WAF = Water Accommodated Fraction
Key literature references and sources for data	Regulations, databases, literature, own research. CONCAWE Report 10/14: Hazard classification and labelling of petroleum substances in the EEA - 2014. Chemical Safety Report Low Boiling Point Naphthas (Gasolines) 2010. Test report 081/15. Neste Alkylate Gasoline, freshwater algae and cyanobacteria, growth inhibition test. Toxicon AB (2015). Test report 086/15. Neste Alkylate Gasoline, Daphnia magna, acute immobilisation test. Toxicon AB (2015).
Revision comments	Revised classification. Updated, sections: 2, 12, 14. NOTE: Lines within the margin indicate significant changes from the previous revision.
Revision date	01/04/2019
Supersedes date	11/05/2018
SDS number	5753
Hazard statements in full	H224 Extremely flammable liquid and vapour. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H336 May cause drowsiness or dizziness. H411 Toxic to aquatic life with long lasting effects.

Exposure scenario
Distribution of Substance - Industrial

Identification

Product name Low Boiling Point Naphthas (Gasolines); Benzene < 0,1 %

Version number 2018

1. Title of exposure scenario

Main title Distribution of Substance - Industrial

Process scope Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities.

Sector of use SU3 Industrial uses

Environment

Environmental release category
ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
ERC5 Use at industrial site leading to inclusion into/onto article
ERC6a Use of intermediate
ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article)
ERC6c Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)
ERC6d Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)
ERC7 Use of functional fluid at industrial site

SPERC ESVOC SPERC 1.1b.v1

Worker

Process category
PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC4 Chemical production where opportunity for exposure arises
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 18,700,000 tonnes/year
Fraction of Regional tonnage used locally: 2.0E-03
Annual site tonnage: 37,500 tonnes
Maximum daily site tonnage: 120 tonnes

Distribution of Substance - Industrial

Frequency and duration of use

Continuous release.
Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 1.0E-03
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 1.0E-05
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 1.0E-05

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice	Common practices vary across sites, thus conservative process release estimates used. Risk from environmental exposure is driven by humans via indirect exposure (primarily inhalation).
STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.5% Removal efficiency (total): 95,5% Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 1100 tonne/day Assumed domestic sewage treatment plant flow (m³/day): 2000.

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

Air	Treat air emission to provide a typical removal efficiency of 90%.
Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 12. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Soil	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method	External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	Vapour pressure > 10 kPa at STP.
Concentration details	Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Distribution of Substance - Industrial

Setting Assumes a good basic standard of occupational hygiene is implemented.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures 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.

Risk management measures

General exposures (closed systems)
No other specific measures identified.
.
General exposures (closed systems)
With sample collection
No other specific measures identified.
.
General exposures (open systems)
Provide extract ventilation to points where emissions occur.
.
Process sampling
No other specific measures identified.
.
Laboratory activities
Handle in a fume cupboard or under extract ventilation.
.
Bulk closed loading and unloading
No other specific measures identified.
.
Drum and small package filling
Fill containers/cans at dedicated fill points supplied with local extract ventilation.
.
Equipment cleaning and maintenance
No other specific measures identified.
.
Storage
No other specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

3. Exposure estimation (Health 1)

Distribution of Substance - Industrial

Assessment method

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

Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Exposure scenario
Formulation & (Re)packing of Substances and Mixtures - Industrial

Identification

Product name Low Boiling Point Naphthas (Gasolines); Benzene < 0,1 %

Version number 2018

1. Title of exposure scenario

Main title Formulation & (Re)packing of Substances and Mixtures - Industrial

Process scope Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

Sector of use SU3 Industrial uses

Environment

Environmental release category ERC2 Formulation into mixture

SPERC ESVOC SPERC 2.2.v1

Worker

Process category
PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC4 Chemical production where opportunity for exposure arises
PROC5 Mixing or blending in batch processes
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC14 Tabletting, compression, extrusion, pelletisation, granulation
PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 16,500,000 tonnes/year
Fraction of Regional tonnage used locally: 1.8E-03
Annual site tonnage: 30,000 tonnes
Maximum daily site tonnage: 100 tonnes

Frequency and duration of use

Continuous release.
Emission days: 300 days/year

Formulation & (Re)packing of Substances and Mixtures - Industrial

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 2.5E-02
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 2.0E-03
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 1.0E-04

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice	Common practices vary across sites, thus conservative process release estimates used. Risk from environmental exposure is driven by humans via indirect exposure (primarily inhalation).
STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.5% Removal efficiency (total): 95,5% Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 100 tonne/day Assumed domestic sewage treatment plant flow (m^3/day): 2000.

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

Air	Treat air emission to provide a typical removal efficiency of 56.5%.
Water	Prevent leaks and prevent soil/water pollution caused by leaks. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 94.7. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Soil	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method	External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	Vapour pressure > 10 kPa at STP.
Concentration details	Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Setting	Assumes a good basic standard of occupational hygiene is implemented.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Formulation & (Re)packing of Substances and Mixtures - Industrial

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures 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.

Risk management measures

General exposures (closed systems)
No other specific measures identified.
.
General exposures (closed systems)
With sample collection
No other specific measures identified.
.
General exposures (open systems)
Provide extract ventilation to points where emissions occur.
.
Process sampling
No other specific measures identified.
.
Mixing operations
(closed systems)
Provide extract ventilation to points where emissions occur.
.
Laboratory activities
Handle in a fume cupboard or under extract ventilation.
.
Bulk transfers
Ensure material transfers are under containment or extract ventilation.
.
Transfer from/pouring from containers
Manual
Ensure material transfers are under containment or extract ventilation.
.
Drum/batch transfers
Ensure material transfers are under containment or extract ventilation.
.
Drum and small package filling
Fill containers/cans at dedicated fill points supplied with local extract ventilation.
.
Equipment cleaning and maintenance
No other specific measures identified.
.
Storage
No other specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

Formulation & (Re)packing of Substances and Mixtures - Industrial

Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

3. Exposure estimation (Health 1)

Assessment method

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

Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Exposure scenario
Use as a Fuel - Industrial

Identification

Product name Low Boiling Point Naphthas (Gasolines); Benzene < 0,1 %

Version number 2018

1. Title of exposure scenario

Main title Use as a Fuel - Industrial

Process scope Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

Sector of use SU3 Industrial uses

Environment

Environmental release category ERC7 Use of functional fluid at industrial site

SPERC ESVOC SPERC 7.12a.v1

Worker

Process category PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC16 Use of fuels

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 1,400,000 tonnes/year
Fraction of Regional tonnage used locally: 1
Annual site tonnage: 1,400,000 tonnes
Maximum daily site tonnage: 4600 tonnes

Frequency and duration of use

Continuous release.
Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 2.5E-03

Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 1.0E-05

Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 0

Environmental factors not influenced by risk management measures

Use as a Fuel - Industrial

Dilution

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

Risk management measures

Good practice

Common practices vary across sites, thus conservative process release estimates used.

Risk from environmental exposure is driven by humans via indirect exposure (primarily inhalation).

STP details

Estimated substance removal from wastewater via domestic sewage treatment: 95.5%
Removal efficiency (total): 95,5%
Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 4600 tonne/day
Assumed domestic sewage treatment plant flow (m³/day):
2000.

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

Air

Treat air emission to provide a typical removal efficiency of 99.4%.

Water

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 76.9. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.

Soil

Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment

Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment.

Conditions and measures related to external recovery of waste

Recovery method

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state

Liquid

Vapour pressure

Vapour pressure > 10 kPa at STP.

Concentration details

Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Setting

Assumes a good basic standard of occupational hygiene is implemented.

Temperature

Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures

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.

Risk management measures

Use as a Fuel - Industrial

General exposures (closed systems)
No specific measures identified.
.
Bulk closed unloading
No specific measures identified.
.
Drum/batch transfers
No specific measures identified.
.
Refuelling
No specific measures identified.
.
Refuelling aircraft
Ensure material transfers are under containment or extract ventilation.
.
Use as a fuel
(closed systems)
No specific measures identified.
.
Equipment maintenance
No other specific measures identified.
.
Storage
No specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

3. Exposure estimation (Health 1)

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

Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Exposure scenario
Use as a Fuel - Professional

Identification

Product name Low boiling point naphtas (gasolines); Benzene < 0.1%

Version number 2018

1. Title of exposure scenario

Main title Use as a Fuel - Professional

Process scope Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

Sector of use SU22 Professional uses

Environment

Environmental release category
ERC9a Widespread use of functional fluid (indoor)
ERC9b Widespread use of functional fluid (outdoor)

SPERC ESVOC SPERC 9.12b.v1

Worker

Process category
PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC16 Use of fuels

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 1,190,000 tonnes/year
Fraction of Regional tonnage used locally: 5.0E-04
Annual site tonnage: 590 tonnes
Maximum daily site tonnage: 1.6 tonnes

Frequency and duration of use

Continuous release.
Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from wide dispersive use (regional only): 0.01

Emission factor - water Release fraction to wastewater from wide dispersive use: 1.0E-05

Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 1.0E-05

Environmental factors not influenced by risk management measures

Use as a Fuel - Professional

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

Risk management measures

Good practice	Common practices vary across sites, thus conservative process release estimates used. Risk from environmental exposure is driven by humans via indirect exposure (primarily inhalation).
STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.5% Removal efficiency (total): 95,5% Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 15 tonne/day Assumed domestic sewage treatment plant flow (m³/day): 2000.

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

Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 3.4. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Soil	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment.

Conditions and measures related to external recovery of waste

Recovery method	This substance is consumed during use and no waste of the substance is generated.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	Vapour pressure > 10 kPa at STP.
Concentration details	Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Setting	Assumes a good basic standard of occupational hygiene is implemented.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	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.

Risk management measures

Use as a Fuel - Professional

General exposures (closed systems)
No other specific measures identified.
.
Preparation of material for application
Mixing operations
(closed systems)
No other specific measures identified.
.
Bulk closed unloading
No other specific measures identified.
.
Drum/batch transfers
No other specific measures identified.
.
Refuelling
No other specific measures identified.
.
Use as a fuel
(closed systems)
No other specific measures identified.
.
Equipment cleaning and maintenance
Drain down and flush system prior to equipment break-in or maintenance.
Wear chemically-resistant gloves (tested to EN374) in combination with intensive management supervision controls.
.
Storage
No other specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

3. Exposure estimation (Health 1)

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

Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Exposure scenario
Use as a Fuel - Consumer

Identification

Product name Low Boiling Point Naphthas (Gasolines); Benzene < 0,1 %

Version number 2018

1. Title of exposure scenario

Main title Use as a Fuel - Consumer

Process scope Covers consumer uses in liquid fuels.

Product category PC13 Fuels.

Sector of use SU21 Consumer uses

Environment

Environmental release category
ERC9a Widespread use of functional fluid (indoor)
ERC9b Widespread use of functional fluid (outdoor)

SPERC ESVOC SPERC 9.12c.v1

Non-industrial

Product sub-category
PC13_1 Liquid: automotive refuelling
PC13_2 Liquid: scooter refuelling
PC13_3 Liquid: garden equipment - use
PC13_4 Liquid: Garden equipment - Refuelling

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 13,900,000 tonnes/year
Fraction of Regional tonnage used locally: 5.0E-04
Annual site tonnage: 7000 tonnes
Maximum daily site tonnage: 19 tonnes

Frequency and duration of use

Continuous release.
Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from wide dispersive use (regional only): 0.01

Emission factor - water Release fraction to wastewater from wide dispersive use: 1.0E-05

Emission factor - soil Release fraction to soil from wide dispersive use (regional only): 1.0E-05

Environmental factors not influenced by risk management measures

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

Risk management measures

Use as a Fuel - Consumer

Risk from environmental exposure is driven by humans via indirect exposure (primarily inhalation).

STP details

Estimated substance removal from wastewater via domestic sewage treatment: 95.5%
Maximum allowable site tonnage (Msafe): 180 tonne/day
Assumed domestic sewage treatment plant flow (m^3/day):
2000.

Conditions and measures related to external treatment of waste for disposal

Disposal method

Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment.

Conditions and measures related to external recovery of waste

Recovery method

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

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state

Liquid

Vapour pressure

Vapour pressure > 10 kPa at STP.

Concentration details

Covers percentage substance in the product up to 100% (unless stated differently).

Amounts used

PC13_1 Liquid: automotive refuelling
For each use event, covers use amounts up to 37.5 kg.
.
PC13_2 Liquid: scooter refuelling
For each use event, covers use amounts up to 3.75 kg.
.
PC13_3 Liquid: garden equipment - use
For each use event, covers use amounts up to 750 g.
.
PC13_4 Liquid: Garden equipment - Refuelling
For each use event, covers use amounts up to 750 g.

Frequency and duration of use

Use as a Fuel - Consumer

PC13_1 Liquid: automotive refuelling
Covers use up to 52 days/year.
Covers use up to 1 time(s)/day.
Covers exposure up to 0.05 hours per event.
.
PC13_2 Liquid: scooter refuelling
Covers use up to 52 days/year.
Covers use up to 1 time(s)/day.
Covers exposure up to 0.03 hours per event.
.
PC13_3 Liquid: garden equipment - use
Covers use up to 26 days/year.
Covers use up to 1 time(s)/day.
Covers exposure up to 2.00 hours per event.
.
PC13_4 Liquid: Garden equipment - Refuelling
Covers use up to 26 days/year.
Covers use up to 1 time(s)/day.
Covers exposure up to 0.03 hours per event.

Human factors not influenced by risk management

Potentially exposed body parts	PC13_1 Liquid: automotive refuelling . PC13_2 Liquid: scooter refuelling : Covers skin contact area up to 210.00 cm². PC13_4 Liquid: Garden equipment - Refuelling : Covers skin contact area up to 420.00 cm².

Other given operational conditions affecting Non-industrial exposure

Setting	PC13_1 Liquid: automotive refuelling . PC13_2 Liquid: scooter refuelling . PC13_3 Liquid: garden equipment - use : Covers outdoor use. . PC13_4 Liquid: Garden equipment - Refuelling : Covers use in a one car garage (34 m³) under typical ventilation.
Temperature	Assumes activities are at ambient temperature (unless stated differently).
Room size	PC13_1 Liquid: automotive refuelling . PC13_2 Liquid: scooter refuelling . PC13_3 Liquid: garden equipment - use : Covers use in room size of 100 m³. PC13_4 Liquid: Garden equipment - Refuelling : Covers use in room size of 34 m³.

Other given operational conditions affecting Non-industrial exposure

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

3. Exposure estimation (Environment 1)

Assessment method	Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

3. Exposure estimation (Health 1)

Assessment method	The ECETOC TRA tool has been used to estimate consumer exposures, unless otherwise indicated.

4. Guidance to check compliance with the exposure scenario (Health 1)

Use as a Fuel - Consumer

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.