Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Naphtha (petroleum), full-range reformed

Version number: GHS 1.0 Date of compilation: 22.02.2022

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

1.1 Product identifier

Identification of the substance	**Naphtha (petroleum), full-range reformed**
Registration number (REACH)	01-2119485808-20-xxxx
EC number	272-895-8
CAS number	68919-37-9
Product number	RDG-2016

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

Relevant identified uses	general use

1.3 Details of the supplier of the safety data sheet

Rosneft Deutschland GmbH
Behrenstr. 18
10117 Berlin
Germany

Telephone: +49 30 70014 2597
e-mail: hseq@rosneft.de
Website: www.rosneft.de

e-mail (competent person)	hseq@rosneft.de

1.4 Emergency telephone number

Poison centre

Country	Name	Telephone	Opening hours
Germany	Giftnotruf München	0049 - 89 -19240	Mon - Fri 00:00 - 23:59

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Section	Hazard class	Category	Hazard class and category	Hazard statement
2.6	flammable liquid	2	Flam. Liq. 2	H225
3.2	skin corrosion/irritation	2	Skin Irrit. 2	H315
3.5	germ cell mutagenicity	1B	Muta. 1B	H340
3.6	carcinogenicity	1A	Carc. 1A	H350
3.7	reproductive toxicity	2	Repr. 2	H361d
3.8D	specific target organ toxicity - single exposure (narcotic effects, drowsiness)	3	STOT SE 3	H336
3.10	aspiration hazard	1	Asp. Tox. 1	H304
4.1C	hazardous to the aquatic environment - chronic hazard	2	Aquatic Chronic 2	H411

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

The product is combustible and can be ignited by potential ignition sources. Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

- Signal word danger

- Pictograms

GHS02, GHS07, GHS08, GHS09



- Hazard statements

H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H350	May cause cancer.
H361d	Suspected of damaging the unborn child.
H411	Toxic to aquatic life with long lasting effects.

- Precautionary statements

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P331	Do NOT induce vomiting.
P370+P378	In case of fire: Use sand, carbon dioxide or powder extinguisher to extinguish.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.

2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance	Naphtha (petroleum), full-range reformed
Identifiers	
REACH Reg. No	01-2119485808-20-xxxx
CAS No	68919-37-9
EC No	272-895-8
Index No	649-307-00-7

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Narcotic effects.

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray, BC-powder, Carbon dioxide (CO2)

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture. Solvent vapours are heavier than air and may spread along floors. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO2)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Avoidance of ignition sources. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. Use only in well-ventilated areas. Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools.

- Specific notes/details

Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. Vapours are heavier than air, spread along floors and form explosive mixtures with air. Vapours may form explosive mixtures with air.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

- Explosive atmospheres

Keep container tightly closed and in a well-ventilated place. Use local and general ventilation. Keep cool. Protect from sunlight.

- Flammability hazards

Keep away from sources of ignition - No smoking. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Protect from sunlight.

- Ventilation requirements

Use local and general ventilation. Ground/bond container and receiving equipment.

- Packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

7.3 Specific end use(s)

See section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Ceiling-C [ppm]	Ceiling-C [mg/m³]	Notation	Source
DE	hydrocarbon mixture (RCP method)		AGW		200		400				TRGS 900
DE	toluene	108-88-3	MAK	50	190	100	380				DFG
DE	toluene	108-88-3	AGW	50	190	100	380			H, Y	TRGS 900
DE	hexane (n-hexane)	110-54-3	MAK	50	180	400	1.440				DFG
DE	n-hexane	110-54-3	AGW	50	180	400	1.440			Y	TRGS 900
DE	xylene, mixture of isomers	1330-20-7	MAK	50	220	100	440				DFG
DE	xylene, mixture of isomers	1330-20-7	AGW	50	220	100	440			H	TRGS 900
DE	benzene	71-43-2	CMR/GW	0,06	0,2					AR, H	TRGS 910
DE	benzene	71-43-2	CMR/GW	0,6	1,9	4,8	15,2			TR, H	TRGS 910
DE	hydrogen sulfide	7783-06-4	AGW	5	7,1	10	14,2			Y	TRGS 900
DE	sulfur hydride	7783-06-4	MAK	5	7,1	10	14,2				DFG
EU	toluene	108-88-3	IOELV	50	192	100	384				2006/15/EC
EU	n-hexane	110-54-3	IOELV	20	72						2006/15/EC
EU	xylene	1330-20-7	IOELV	50	221	100	442				2000/39/EC
EU	benzene	71-43-2	IOELV	1	3,25						2004/37/EC
EU	hydrogen sulfide	7783-06-4	IOELV	5	7	10	14				2009/161/EU

Notation	
AR	acceptable risk
Ceiling-C	ceiling value is a limit value above which exposure should not occur
H	absorbed through the skin
STEL	short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
TR	risk of tolerance
TWA	time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)
Y	a risk of developmental toxicity does not need to be expected if the occupational exposure limit value and the biological limit value (BGW) are adhered to

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Colour	colourless
Odour	characteristic
Melting point/freezing point	<-60 °C
Boiling point or initial boiling point and boiling range	36 – 223 °C
Flammability	flammable liquid in accordance with GHS criteria
Lower and upper explosion limit	1,4 vol% - 7,6 vol%
Flash point	<-40 °C

Auto-ignition temperature	≥280 – ≤470 °C at 101,3 kPa (ECHA)
Decomposition temperature	not relevant
pH (value)	not determined
Kinematic viscosity	<7 $^{mm^2}/_{s}$ at 40 °C

Solubility(ies)

Water solubility	(insoluble)

Partition coefficient

Partition coefficient n-octanol/water (log value)	this information is not available

Vapour pressure	4 kPa at 37,8 °C

Density and/or relative density

Density	810 $^{kg}/_{m^3}$ at 15 °C
Relative vapour density	information on this property is not available

Particle characteristics	not relevant (liquid)

9.2 Other information

Information with regard to physical hazard classes	there is no additional information

Other safety characteristics

Solvent content	100 %
Temperature class (EU, acc. to ATEX)	T3 (maximum permissible surface temperature on the equipment: 200°C)

SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". It's a reactive substance. The mixture contains reactive substance(s). Risk of ignition.

If heated:

Risk of ignition

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hints to prevent fire or explosion

Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

10.5 Incompatible materials

Oxidisers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

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

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Shall not be classified as acutely toxic.

GHS of the United Nations, annex 4: May be harmful in contact with skin.

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

May cause genetic defects.

Carcinogenicity

May cause cancer.

Reproductive toxicity

Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure). Depression of central nervous system.

Aspiration hazard

May be fatal if swallowed and enters airways.

11.2 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Acc. to 1272/2008/EC: Toxic to aquatic life with long lasting effects.
Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (Ordinance on facilities for handling substances hazardous to water) (AwSV): WGK 3, highly hazardous to water (Germany)

Aquatic toxicity (chronic)

Endpoint	Value	Species	Exposure time
EL50	10 $^{mg}/_{l}$	fish	21 d
EC50	15,41 $^{mg}/_{l}$	microorganisms	40 h

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

Not listed.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste treatment-relevant information

Solvent reclamation/regeneration.

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

14.1 UN number or ID number

ADR/RID/ADN	UN 1268
IMDG-Code	UN 1268
ICAO-TI	UN 1268

14.2 UN proper shipping name

ADR/RID/ADN	PETROLEUM DISTILLATES, N.O.S.
IMDG-Code	PETROLEUM DISTILLATES, N.O.S.
ICAO-TI	Petroleum distillates, n.o.s.

14.3 Transport hazard class(es)

ADR/RID/ADN	3
IMDG-Code	3
ICAO-TI	3

14.4 Packing group

ADR/RID/ADN	II
IMDG-Code	II
ICAO-TI	II

14.5 Environmental hazards

hazardous to the aquatic environment

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - Additional information

Classification code	F1
Danger label(s)	3, fish and tree



Environmental hazards	yes (hazardous to the aquatic environment)
Special provisions (SP)	640D, 664
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
Transport category (TC)	2
Tunnel restriction code (TRC)	D/E
Hazard identification No	33
ADN	Table C: 3+(N2, CMR, F)

International Maritime Dangerous Goods Code (IMDG) - Additional information

Marine pollutant	yes (hazardous to the aquatic environment)
Danger label(s)	3, fish and tree



Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
EmS	F-E, S-E
Stowage category	B

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Environmental hazards	yes (hazardous to the aquatic environment)
Danger label(s)	3



Special provisions (SP)	A3
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII

Dangerous substances with restrictions (REACH, Annex XVII)

Name of substance	Name acc. to inventory	CAS No	Restriction	No
Naphtha (petroleum), full-range reformed	this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC		R3	3
Naphtha (petroleum), full-range reformed	carcinogenic		R28-30	28
Naphtha (petroleum), full-range reformed	germ cell mutagenic (mutagenic)		R28-30	29
Naphtha (petroleum), full-range reformed	flammable / pyrophoric		R40	40
Naphtha (petroleum), full-range reformed	substances in tattoo inks and permanent make-up		R75	75

Legend

R28-30 1. Shall not be placed on the market, or used,
- as substances,
- as constituents of other substances, or,
- in mixtures,
for supply to the general public when the individual concentration in the substance or mixture is equal to or greater than:
- either the relevant specific concentration limit specified in Part 3 of Annex VI to Regulation (EC) No 1272/2008, or,
- the relevant concentration specified in Directive 1999/45/EC where no specific concentration limit is set out in Part 3 of Annex VI to Regulation (EC) No 1272/2008.
Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is marked visibly, legibly and indelibly as follows:

Legend

'Restricted to professional users'.
2. By way of derogation, paragraph 1 shall not apply to:
(a) medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/EC;
(b) cosmetic products as defined by Directive 76/768/EEC;
(c) the following fuels and oil products:
- motor fuels which are covered by Directive 98/70/EC,
- mineral oil products intended for use as fuel in mobile or fixed combustion plants,
- fuels sold in closed systems (e.g. liquid gas bottles);
(d) artists' paints covered by Directive 1999/45/EC;
(e) the substances listed in Appendix 11, column 1, for the applications or uses listed in Appendix 11, column 2. Where a date is specified in column 2 of Appendix 11, the derogation shall apply until the said date;
(f) devices covered by Regulation (EU) 2017/745.

R3 1. Shall not be used in:
- ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,
- tricks and jokes,
- games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
2. Articles not complying with paragraph 1 shall not be placed on the market.
3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
— can be used as fuel in decorative oil lamps for supply to the general public, and
— present an aspiration hazard and are labelled with H304.
4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).
5. Without prejudice to the implementation of other Union provisions relating to the classification, labelling and packaging of substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
(a) lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: "Keep lamps filled with this liquid out of the reach of children"; and, by 1 December 2010, "Just a sip of lamp oil – or even sucking the wick of lamps – may lead to life-threatening lung damage";
(b) grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: 'Just a sip of grill lighter fluid may lead to life threatening lung damage';
(c) lamps oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.';

R40 1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following:
- metallic glitter intended mainly for decoration,
- artificial snow and frost,
- 'whoopee' cushions,
- silly string aerosols,
- imitation excrement,
- horns for parties,
- decorative flakes and foams,
- artificial cobwebs,
- stink bombs.
2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with:
'For professional users only'.
3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/324/EEC (2).
4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.

Legend

R75 1. Shall not be placed on the market in mixtures for use for tattooing purposes, and mixtures containing any such substances shall not be used for tattooing purposes, after 4 January 2022 if the substance or substances in question is or are present in the following circumstances:
(a) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as carcinogen category 1A, 1B or 2, or germ cell mutagen category 1A, 1B or 2, the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight;
(b) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as reproductive toxicant category 1A, 1B or 2, the substance is present in the mixture in a concentration equal to or greater than 0,001 % by weight;
(c) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin sensitiser category 1, 1A or 1B, the substance is present in the mixture in a concentration equal to or greater than 0,001 % by weight;
(d) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin corrosive category 1, 1A, 1B or 1C or skin irritant category 2, or as serious eye damage category 1 or eye irritant category 2, the substance is present in the mixture in a concentration equal to or greater than:
(i) 0,1 % by weight, if the substance is used solely as a pH regulator;
(ii) 0,01 % by weight, in all other cases;
(e) in the case of a substance listed in Annex II to Regulation (EC) No 1223/2009 (*1), the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight;
(f) in the case of a substance for which a condition of one or more of the following kinds is specified in column g (Product type, Body parts) of the table in Annex IV to Regulation (EC) No 1223/2009, the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight:
(i) “Rinse-off products”;
(ii) “Not to be used in products applied on mucous membranes”;
(iii) “Not to be used in eye products”;
(g) in the case of a substance for which a condition is specified in column h (Maximum concentration in ready for use preparation) or column i (Other) of the table in Annex IV to Regulation (EC) No 1223/2009, the substance is present in the mixture in a concentration, or in some other way, that does not accord with the condition specified in that column;
(h) in the case of a substance listed in Appendix 13 to this Annex, the substance is present in the mixture in a concentration equal to or greater than the concentration limit specified for that substance in that Appendix.
2. For the purposes of this entry use of a mixture “for tattooing purposes” means injection or introduction of the mixture into a person’s skin, mucous membrane or eyeball, by any process or procedure (including procedures commonly referred to as permanent make-up, cosmetic tattooing, micro-blading and micro-pigmentation), with the aim of making a mark or design on his or her body.
3. If a substance not listed in Appendix 13 falls within more than one of points (a) to (g) of paragraph 1, the strictest concentration limit laid down in the points in question shall apply to that substance. If a substance listed in Appendix 13 also falls within one or more of points (a) to (g) of paragraph 1, the concentration limit laid down in point (h) of paragraph 1 shall apply to that substance.
4. By way of derogation, paragraph 1 shall not apply to the following substances until 4 January 2023:
(a) Pigment Blue 15:3 (CI 74160, EC No 205-685-1, CAS No 147-14-8);
(b) Pigment Green 7 (CI 74260, EC No 215-524-7, CAS No 1328-53-6).
5. If Part 3 of Annex VI to Regulation (EC) No 1272/2008 is amended after 4 January 2021 to classify or re-classify a substance such that the substance then becomes caught by point (a), (b), (c) or (d) of paragraph 1 of this entry, or such that it then falls within a different one of those points from the one within which it fell previously, and the date of application of that new or revised classification is after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking effect on the date of application of that new or revised classification.
6. If Annex II or Annex IV to Regulation (EC) No 1223/2009 is amended after 4 January 2021 to list or change the listing of a substance such that the substance then becomes caught by point (e), (f) or (g) of paragraph 1 of this entry, or such that it then falls within a different one of those points from the one within which it fell previously, and the amendment takes effect after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking effect from the date falling 18 months after entry into force of the act by which that amendment was made.
7. Suppliers placing a mixture on the market for use for tattooing purposes shall ensure that, after 4 January 2022, the mixture is marked with the following information:
(a) the statement “Mixture for use in tattoos or permanent make-up”;
(b) a reference number to uniquely identify the batch;
(c) the list of ingredients in accordance with the nomenclature established in the glossary of common ingredient names pursuant to Article 33 of Regulation (EC) No 1223/2009, or in the absence of a common ingredient name, the IUPAC name. In the absence of a common ingredient name or IUPAC name, the CAS and EC number. Ingredients shall be listed in descending order by weight or volume of the ingredients at the time of formulation. “Ingredient” means any substance added during the process of formulation and present in the mixture for use for tattooing purposes. Impurities shall not be regarded as ingredients. If the name of a substance, used as ingredient within the meaning of this entry, is already required to be stated on the label in accordance with Regulation (EC) No 1272/2008, that ingredient does not need to be marked in accordance with this Regulation;
(d) the additional statement “pH regulator” for substances falling under point (d)(i) of paragraph 1;
(e) the statement "Contains nickel. Can cause allergic reactions." if the mixture contains nickel below the concentration limit specified in Appendix 13;
(f) the statement "Contains chromium (VI). Can cause allergic reactions." if the mixture contains chromium (VI) below the concentration limit specified in Appendix 13;
(g) safety instructions for use insofar as they are not already required to be stated on the label by Regulation (EC) No 1272/2008.
The information shall be clearly visible, easily legible and marked in a way that is indelible.
The information shall be written in the official language(s) of the Member State(s) where the mixture is placed on the market, unless the Member State(s) concerned provide(s) otherwise.
Where necessary because of the size of the package, the information listed in the first subparagraph, except for point (a), shall be included instead in the instructions for use.
Before using a mixture for tattooing purposes, the person using the mixture shall provide the person undergoing the procedure with the information marked on the package or included in the instructions for use pursuant to this paragraph.
8. Mixtures that do not contain the statement “Mixture for use in tattoos or permanent make-up” shall not be used for tattoo-

Legend

ing purposes.
9. This entry does not apply to substances that are gases at temperature of 20 °C and pressure of 101,3 kPa, or generate a vapour pressure of more than 300 kPa at temperature of 50 °C, with the exception of formaldehyde (CAS No 50-00-0, EC No 200-001-8).
10. This entry does not apply to the placing on the market of a mixture for use for tattooing purposes, or to the use of a mixture for tattooing purposes, when placed on the market exclusively as a medical device or an accessory to a medical device, within the meaning of Regulation (EU) 2017/745, or when used exclusively as a medical device or an accessory to a medical device, within the same meaning. Where the placing on the market or use may not be exclusively as a medical device or an accessory to a medical device, the requirements of Regulation (EU) 2017/745 and of this Regulation shall apply cumulatively.

List of substances subject to authorisation (REACH, Annex XIV) / SVHC - candidate list

not listed

Deco-Paint Directive

VOC content	100 %

Industrial Emissions Directive (IED)

VOC content	100 %

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

Water Framework Directive (WFD)

List of pollutants (WFD)

Name of substance	CAS No	Listed in	Remarks
Naphtha (petroleum), full-range reformed		a)	

Legend

A) Indicative list of the main pollutants

Regulation on persistent organic pollutants (POP)

Not listed.

National regulations (Germany)

Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (Ordinance on facilities for handling substances hazardous to water) (AwSV)

Wassergefährdungsklasse, WGK (water hazard class) 3 highly hazardous to water

Index number 9162

Technical instructions on air quality control (Germany)

Number	Group of substances	Class	Conc.	Mass flow	Mass concentration	Notation
5.2.5	organic substances	class I	≥ 25 wt%	0,1 $^{kg}/_{h}$	20 $^{mg}/_{m^3}$	3)
5.2.7.1.1	carcinogenic substances		≥ 25 wt%	0,15 $^{g}/_{h}$	0,05 $^{mg}/_{m^3}$	5)
5.2.7.1.2	mutagenic substances		≥ 25 wt%	0,15 $^{g}/_{h}$	0,05 $^{mg}/_{m^3}$	4)

Notation

3) a total mass flow of 0.50 kg/h or a total mass concentration of 50 mg/m³, each of which to be indicated as total carbon, shall not be exceeded (except organic particulate matter)
4) in compliance with the emission reduction dictate
5) not yet assigned to any class. Stated values correspond to those for carcinogenic substances of class I

Storage of hazardous substances in non-stationary containers (TRGS 510) (Germany)

Storage class (LGK) 3 (flammable and desensitizing explosive liquids)

National inventories

Country	Inventory	Status
EU	REACH Reg.	substance is listed

Legend
REACH Reg. REACH registered substances

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
2000/39/EC	Commission Directive establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC
2004/37/EC	Directive of the European Parliament and of the Council on the protection of workers from the risks related to exposure to carcinogens or mutagens at work
2006/15/EC	Commission Directive establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC
2009/161/EU	Commission Directive establishing a third list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Commission Directive 2000/39/EC
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
ADR/RID/ADN	Agreements concerning the International Carriage of Dangerous Goods by Road/Rail/Inland Waterways (ADR/RID/ADN)
AGW	Workplace exposure limit
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DFG	Deutsche Forschungsgemeinschaft MAK-und BAT-Werte-Liste, Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe, Wiley-VCH, Weinheim
DGR	Dangerous Goods Regulations (see IATA/DGR)
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)

Abbr.	Descriptions of used abbreviations
EINECS	European Inventory of Existing Commercial Chemical Substances
EL50	Effective Loading 50 %: the EL50 corresponds to the loading rate required to produce a response in 50% of the test organisms
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
IOELV	Indicative occupational exposure limit value
LGK	Lagerklasse (storage class according to TRGS 510, Germany)
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
ppm	Parts per million
RCP	Reciprocal calculation procedure
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
STEL	Short-term exposure limit
SVHC	Substance of Very High Concern
TRGS	Technische Regeln für Gefahrstoffe (technical rules for hazardous substances, Germany)
TRGS 900	Arbeitsplatzgrenzwerte (TRGS 900)
TRGS 910	Risikobezogenes Maßnahmenkonzept für Tätigkeiten mit krebserzeugenden Gefahrstoffen
TWA	Time-weighted average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H350	May cause cancer.
H361d	Suspected of damaging the unborn child.
H411	Toxic to aquatic life with long lasting effects.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

Annex to the extended Safety Data Sheet (eSDS)

Naphtha (petroleum), full-range reformed

Exposure Scenario / ES No 1

1 TITLE SECTION

Exposure Scenario name: Distribution of substance

Sectors of use [SU]

SU3: Industrial uses.

Process categories [PROC]

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.
PROC15: Use as laboratory reagent.

Environmental release categories [ERC]

ERC1: Manufacture of the substance.
ERC2: Formulation into mixture.
ERC3: Formulation into solid matrix.
ERC3: Formulation in materials.
ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article).
ERC5: Industrial use resulting in inclusion into or onto a matrix.
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).
ERC6b: Industrial use of reactive processing aids.
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.
ERC7: Industrial use of substances in closed systems.

Specific Environmental Release Categories [SPERC]

ESVOC SPERC 1.1b.v1

2 Operational conditions and risk management measures

2.1 Control of environmental exposure

Product characteristics Substance is complex UVCB, Predominantly hydrophobic

Amounts used

Maximum daily site tonnage (kg/day):	1,2E5
Fraction of EU tonnage used in region:	0,1
Annual site tonnage	3,75E4 t(onnes)/year
Fraction of regional tonnage used locally:	0,002

Regional use tonnage (tons/year):	1,87E7
Frequency and duration of use	Continuous release
Emission days	300 days per year

Environment factors not influenced by risk management

Local marine water dilution factor	100
Local freshwater dilution factor	10
Release fraction to air from process (initial release prior to RMM):	0,001
Release fraction to soil from process (initial release prior to RMM):	0,00001
Release fraction to wastewater from process (initial release prior to RMM):	0,00001

Technical conditions and measures at process level (source) to prevent release

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

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

Risk from environmental exposure is driven by humans via indirect exposure (primarily inhalation). If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.

Treat air emission to provide a typical removal efficiency of (%):	90
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%):	12
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%):	0

Organisational measures to prevent/limit release from site:

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

Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via on-site sewage treatment (%):	95,5
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%):	95,5
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d):	1,1E6
Assumed on-site sewage treatment plant flow (m3/d):	2000
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
Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations
Risk-driving RCR - air compartment driven	7,28E-02
Risk-driving RCR - water compartment driven	4,32E-02

2.2 Control of worker exposure

Product characteristics

Physical form of product	fluid
Vapour pressure	4 kPa at 37,8 °C
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).
Amounts used	not applicable
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Other given operational conditions affecting workers exposure	Assumes use at not more than 20 °C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios: Operational conditions and risk management 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
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 scenarios; 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
General exposures (closed systems):	Provide extract ventilation to points where emissions occur. Handle substance within a closed system.
General exposures (closed systems) - with sample collection:	Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure. Wear suitable gloves tested to EN374.
Process sampling:	Sample via a closed loop or other system to avoid exposure
Laboratory activities:	Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure

Bulk closed loading and unloading:	Ensure material transfers are under containment or extract ventilation
Equipment cleaning and 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. Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls.
Storage:	Ensure operation is undertaken outdoors. Store substance within a closed system.

3 Exposure estimation and reference to its source

Exposure assessment (environment)	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model
Exposure assessment (human)	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. 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 on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.

Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/ Operational Conditions outlined in Section 2 are implemented. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation.

Exposure Scenario / ES No 2

1 TITLE SECTION

Exposure Scenario name: Formulation or re-packing

Sectors of use [SU]

SU3: Industrial uses.
SU10: Formulation [mixing] of preparations and/or re-packaging (excluding alloys).

Process categories [PROC]

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.
PROC15: Use as laboratory reagent.

Environmental release categories [ERC]

ERC2: Formulation into mixture.

Specific Environmental Release Categories [SPERC]

ESVOC SPERC 2.2.v1

2 Operational conditions and risk management measures

2.1 Control of environmental exposure

Product characteristics	Substance is complex UVCB, Predominantly hydrophobic
Amounts used	
Maximum daily site tonnage (kg/day):	1,0E5
Fraction of EU tonnage used in region:	0,1
Annual site tonnage	3,0E4 t(onnes)/year
Fraction of regional tonnage used locally:	0,0018
Regional use tonnage (tons/year):	1,65E7
Frequency and duration of use	Continuous release
Emission days	300 days per year
Environment factors not influenced by risk management	
Local marine water dilution factor	100
Local freshwater dilution factor	10

Release fraction to air from process (initial release prior to RMM):	0,025
Release fraction to soil from process (initial release prior to RMM):	0,0001
Release fraction to wastewater from process (initial release prior to RMM):	0,002

Technical conditions and measures at process level (source) to prevent release

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

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

Prevent discharge of undissolved substance to or recover from onsite wastewater. Risk from environmental exposure is driven by humans via indirect exposure (primarily inhalation). If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.

Treat air emission to provide a typical removal efficiency of (%):	56,5
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%):	94,7
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%):	0

Organisational measures to prevent/limit release from site:

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

Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via on-site sewage treatment (%):	95,5
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%):	95,5
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d):	1,0E5
Assumed on-site sewage treatment plant flow (m3/d):	2000
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
Conditions and measures related to external recovery of waste	External recovery and recycling of waste should comply with applicable local and/or national regulations
Risk-driving RCR - air compartment driven	7,69E-01
Risk-driving RCR - water compartment driven	8,52E-01

2.2 Control of worker exposure

Product characteristics

Physical form of product	fluid
Vapour pressure	4 kPa at 37,8 °C
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).
Amounts used	not applicable
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Other given operational conditions affecting workers exposure	Assumes use at not more than 20 °C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios: Operational conditions and risk management 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
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 scenarios; 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
General exposures (closed systems):	Provide extract ventilation to points where emissions occur. Handle substance within a closed system.
General exposures (closed systems) - with sample collection:	Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure. Wear suitable gloves tested to EN374.
Process sampling:	Sample via a closed loop or other system to avoid exposure
Laboratory activities:	Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure

Bulk transfers:	Ensure material transfers are under containment or extract ventilation
Drum/batch transfers:	Ensure material transfers are under containment or extract ventilation
Equipment cleaning and 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. Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls.
Storage:	Store substance within a closed system. Wear suitable gloves tested to EN374.

3 Exposure estimation and reference to its source

Exposure assessment (environment)	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model
Exposure assessment (human)	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. 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 on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.

Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/ Operational Conditions outlined in Section 2 are implemented. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation.

Annex to the extended Safety Data Sheet (eSDS)

Naphtha (petroleum), full-range reformed

Exposure Scenario / ES No 3

1 TITLE SECTION

Exposure Scenario name: Manufacture of substance

Sectors of use [SU]

SU3: Industrial uses.
SU8: Manufacture of bulk, large scale chemicals (including petroleum products).
SU9: Manufacture of fine chemicals.

Process categories [PROC]

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.
PROC15: Use as laboratory reagent.

Environmental release categories [ERC]

ERC1: Manufacture of the substance.
ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article).

Specific Environmental Release Categories [SPERC]

ESVOC SPERC 1.1.v1

2 Operational conditions and risk management measures

2.1 Control of environmental exposure

Product characteristics	Substance is complex UVCB, Predominantly hydrophobic
Amounts used	
Maximum daily site tonnage (kg/day):	2,0E6
Fraction of EU tonnage used in region:	0,1
Annual site tonnage	6,0E5 t(onnes)/year
Fraction of regional tonnage used locally:	0,03
Regional use tonnage (tons/year):	1,87E7
Frequency and duration of use	Continuous release
Emission days	300 days per year
Environment factors not influenced by risk management	
Local marine water dilution factor	100
Local freshwater dilution factor	10

Release fraction to air from process (initial release prior to RMM):	0,05
Release fraction to soil from process (initial release prior to RMM):	0,0001
Release fraction to wastewater from process (initial release prior to RMM):	0,003

Technical conditions and measures at process level (source) to prevent release

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

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

Prevent discharge of undissolved substance to or recover from onsite wastewater. Risk from environmental exposure is driven by humans via indirect exposure (primarily inhalation). Onsite wastewater treatment required.

Treat air emission to provide a typical removal efficiency of (%):	99,0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%):	95,2
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%):	80,4

Organisational measures to prevent/limit release from site:

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

Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via on-site sewage treatment (%):	95,5
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%):	99,1
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d):	2,0E6
Assumed on-site sewage treatment plant flow (m3/d):	10000
Conditions and measures related to external treatment of waste for disposal	During manufacturing no waste of the substance is generated
Conditions and measures related to external recovery of waste	During manufacturing no waste of the substance is generated
Risk-driving RCR - air compartment driven	7,03E-01
Risk-driving RCR - water compartment driven	9,09E-01

2.2 Control of worker exposure

Product characteristics

Physical form of product	fluid
Vapour pressure	4 kPa at 37,8 °C
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).
Amounts used	not applicable
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Other given operational conditions affecting workers exposure	Operation is carried out at elevated temperature (> 20 °C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios: Operational conditions and risk management 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
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 scenarios; 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
General exposures (closed systems):	Provide extract ventilation to points where emissions occur. Handle substance within a closed system.
General exposures (closed systems) - with sample collection:	Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure. Wear suitable gloves tested to EN374.
Laboratory activities:	Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure
Bulk transfers:	Ensure material transfers are under containment or extract ventilation

Equipment cleaning and 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. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
Storage:	Store substance within a closed system. Wear suitable gloves tested to EN374.

3 Exposure estimation and reference to its source

Exposure assessment (environment)	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model
Exposure assessment (human)	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. 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 on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet. Scaled local assessments for EU refineries have been performed using site-specific data and are attached in PETRORISK file - "Site-Specific Production" worksheet. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/ Operational Conditions outlined in Section 2 are implemented. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk Management Measures are based on qualitative risk characterisation.

Exposure Scenario / ES No 4

1 TITLE SECTION

Exposure Scenario name: Use as an intermediate

Sectors of use [SU]

SU3: Industrial uses.
SU8: Manufacture of bulk, large scale chemicals (including petroleum products).
SU9: Manufacture of fine chemicals.

Process categories [PROC]

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.
PROC15: Use as laboratory reagent.

Environmental release categories [ERC]

ERC6a: Use of intermediate.

Specific Environmental Release Categories [SPERC]

ESVOC SPERC 6.1a.v1

2 Operational conditions and risk management measures

2.1 Control of environmental exposure

Product characteristics	Substance is complex UVCB, Predominantly hydrophobic
Amounts used	
Maximum daily site tonnage (kg/day):	5,0E4
Fraction of EU tonnage used in region:	0,1
Annual site tonnage	1,5E4 t(onnes)/year
Fraction of regional tonnage used locally:	0,0068
Regional use tonnage (tons/year):	2,21E6
Frequency and duration of use	Continuous release
Emission days	300 days per year
Environment factors not influenced by risk management	
Local marine water dilution factor	100
Local freshwater dilution factor	10

Release fraction to air from process (initial release prior to RMM):	0,025
Release fraction to soil from process (initial release prior to RMM):	0,001
Release fraction to wastewater from process (initial release prior to RMM):	0,003

Technical conditions and measures at process level (source) to prevent release

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

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

Prevent discharge of undissolved substance to or recover from onsite wastewater. Risk from environmental exposure is driven by freshwater sediment. Onsite wastewater treatment required.

Treat air emission to provide a typical removal efficiency of (%):	80
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%):	92,9
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%):	0

Organisational measures to prevent/limit release from site:

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

Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via on-site sewage treatment (%):	95,5
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%):	95,5
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d):	7,8E4
Assumed on-site sewage treatment plant flow (m3/d):	2000
Conditions and measures related to external recovery of waste	This substance is consumed during use and no waste of the substance is generated
Risk-driving RCR - air compartment driven	2,07E-01
Risk-driving RCR - water compartment driven	6,39E-01

2.2 Control of worker exposure

Product characteristics

Physical form of product	fluid
Vapour pressure	4 kPa at 37,8 °C
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).
Amounts used	not applicable
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)

Other given operational conditions affecting workers exposure	Operation is carried out at elevated temperature (> 20 °C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios: Operational conditions and risk management 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
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 scenarios; 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
General exposures (closed systems):	Provide extract ventilation to points where emissions occur. Handle substance within a closed system.
General exposures (closed systems) - with sample collection:	Handle substance within a closed system. Sample via a closed loop or other system to avoid exposure. Wear suitable gloves tested to EN374.
Laboratory activities:	Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure
Bulk transfers:	Ensure material transfers are under containment or extract ventilation
Equipment cleaning and 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. Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls.
Storage:	Store substance within a closed system. Wear suitable gloves tested to EN374.

3 Exposure estimation and reference to its source

Exposure assessment (environment)	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model
Exposure assessment (human)	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. 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 on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet.

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