

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

1.1. Product identifier

Product form : Mixture
Product name : 77820 - Turbine Oil 46
Product code : 77820

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

1.2.1. Relevant identified uses

Main use category : Industrial use, Professional use
Function or use category : Hydraulic fluids and additives

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Transnational Blenders bv
Wieldrechtseweg, 37
NL- 3316 BG Dordrecht – Netherlands Zuid Holland
Netherlands
T +31 (0)78 6527652
technical@tnb.nl - www.tnb.nl

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER	+44 20 7188 7188	
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA	0344 892 0111	Only for healthcare professionals

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Hazardous to the aquatic environment – Chronic Hazard, H412
Category 3

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Harmful to aquatic life with long lasting effects.

2.2. Label elements

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

Signal word (CLP) : -
Hazard statements (CLP) : H412 - Harmful to aquatic life with long lasting effects.
Precautionary statements (CLP) : P273 - Avoid release to the environment.
P501 - Dispose of contents and container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
EUH-statements : EUH208 - Contains N-Phenyl-1-naphthylamin(90-30-2). May produce an allergic reaction.

77820 - Turbine Oil 46

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

2.3. Other hazards

Contains no PBT and/or vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil substance with a Community workplace exposure limit	CAS-No.: 72623-87-1 EC-No.: 276-738-4 EC Index-No.: 649-483-00-5 REACH-no: 01-2119474889-13	$\geq 75 - < 90$	Asp. Tox. 1, H304
Distillates (petroleum), hydrotreated heavy paraffinic substance with national workplace exposure limit(s) (AT, BE, BG, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IT, LT, LV, NL, PL, PT, RO, SE, SI, SK, IS, NO, CH, TR); substance with a Community workplace exposure limit	CAS-No.: 64742-54-7 EC-No.: 265-157-1 EC Index-No.: 649-467-00-8 REACH-no: 01-2119484627-25	$\geq 15 - < 25$	Not classified
Hydrocarbons, C10-C13, aromatics, <1% naphthalene substance with national workplace exposure limit(s) (AT, BE, CZ, DK, ES, GB, IE, LV, NL, RO, SE, CH); substance with a Community workplace exposure limit	EC-No.: 922-153-0 REACH-no: 01-2119451097-39	$\geq 0.1 - < 0.3$	Asp. Tox. 1, H304 Aquatic Chronic 2, H411 (M=0)
N-Phenyl-1-naphthylamin substance with national workplace exposure limit(s) (DE, NL)	CAS-No.: 90-30-2 EC-No.: 201-983-0	< 0.3	Acute Tox. 4 (Oral), H302 Skin Sens. 1, H317 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based substance with national workplace exposure limit(s) (BE, BG, CZ, DK, ES, FI, GR, HU, IE, LT, LV, NL, PL, PT, RO, SE, SK, IS, NO, CH); substance with a Community workplace exposure limit	CAS-No.: 72623-86-0 EC-No.: 276-737-9 EC Index-No.: 649-482-00-X REACH-no: 01-2119474878-16	< 0.1	Asp. Tox. 1, H304
Hydrocarbons, C11-C13, isoalkanes, <2% aromatics substance with national workplace exposure limit(s) (AT, BE, BG, CZ, DK, EE, HR, NL, PL, CH); substance with a Community workplace exposure limit	EC-No.: 920-901-0 REACH-no: 01-2119456810-40	< 0.1	Asp. Tox. 1, H304
Distillates (petroleum), hydrotreated light paraffinic substance with national workplace exposure limit(s) (AT, BE, BG, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IT, LT, LV, NL, PL, PT, RO, SE, SI, SK, IS, NO, CH); substance with a Community workplace exposure limit	CAS-No.: 64742-55-8 EC-No.: 265-158-7 EC Index-No.: 649-468-00-3 REACH-no: 01-2119487077-29	< 0.1	Not classified

77820 - Turbine Oil 46

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Toluene substance with national workplace exposure limit(s) (AT, DE, DK, FI, FR, GB, NL, SE, NO, CH); substance with a Community workplace exposure limit	CAS-No.: 108-88-3 EC-No.: 203-625-9 EC Index-No.: 601-021-00-3 REACH-no: 01-2119471310- 51	< 0.1	Flam. Liq. 2, H225 Repr. 2, H361d Asp. Tox. 1, H304 STOT RE 2, H373 Skin Irrit. 2, H315 STOT SE 3, H336
diphenylamine substance with national workplace exposure limit(s) (AT, BE, BG, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, IE, IT, LT, PL, PT, RO, SE, SI, SK, IS, NO, CH, TR); substance with a Community workplace exposure limit	CAS-No.: 122-39-4 EC-No.: 204-539-4 EC Index-No.: 612-026-00-5 REACH-no: 01-2119488966- 13	< 0.1	Acute Tox. 3 (Inhalation), H331 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Oral), H301 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
1-naphthol substance with national workplace exposure limit(s) (LT, LV, RO)	CAS-No.: 90-15-3 EC-No.: 201-969-4 EC Index-No.: 604-029-00-5	< 0.1	Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Oral), H302 STOT SE 3, H335 Skin Irrit. 2, H315 Eye Dam. 1, H318
naphthalene substance with national workplace exposure limit(s) (AT, BE, DE, DK, ES, FI, FR, GB, HU, IE, IT, LV, NL, PL, RO, SE, NO, CH); substance with a Community workplace exposure limit	CAS-No.: 91-20-3 EC-No.: 202-049-5 EC Index-No.: 601-052-00-2 REACH-no: 01-2119561346- 37	< 0.1	Acute Tox. 4 (Oral), H302 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Methanol substance with national workplace exposure limit(s) (NL)	CAS-No.: 67-56-1 EC-No.: 200-659-6 EC Index-No.: 603-001-00-X	< 0.1	Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 STOT SE 1, H370

Specific concentration limits:

Name	Product identifier	Specific concentration limits (%)
N-Phenyl-1-naphthylamin	CAS-No.: 90-30-2 EC-No.: 201-983-0	(10 ≤ C < 100) STOT RE 2, H373
Hydrocarbons, C11-C13, isoalkanes, <2% aromatics	EC-No.: 920-901-0 REACH-no: 01-2119456810- 40	(1 ≤ C < 100) EUH066
Methanol	CAS-No.: 67-56-1 EC-No.: 200-659-6 EC Index-No.: 603-001-00-X	(3 ≤ C < 10) STOT SE 2, H371 (10 ≤ C < 100) STOT SE 1, H370

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.

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

No additional information available

77820 - Turbine Oil 46

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media : Do not use a water jet since it may cause the fire to spread.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Precautionary measures fire : Exercise caution when fighting any chemical fire.
Firefighting instructions : Use water spray or fog for cooling exposed containers.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid spilling the product, as this might cause falls.

6.1.1. For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.
Emergency procedures : Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up : Take up liquid spill into absorbent material.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Avoid contact with skin and eyes.
Handling temperature : ≤ 40 °C
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Provide local exhaust or general room ventilation.

77820 - Turbine Oil 46

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Storage conditions	: Store in a well-ventilated place. Keep cool.
Storage temperature	: ≤ 40 °C
Storage area	: Store in a well-ventilated place. Store away from heat.
Special rules on packaging	: Keep only in original container. Store in a closed container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)	
EU - Indicative Occupational Exposure Limit (IOEL)	
IOEL TWA	5 mg/m ³
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA) [1]	5 mg/m ³
Hydrocarbons, C10-C13, aromatics, <1% naphthalene	
EU - Indicative Occupational Exposure Limit (IOEL)	
IOEL TWA	5 mg/m ³
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA) [1]	5 mg/m ³
WEL STEL (OEL STEL)	10 mg/m ³
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (72623-86-0)	
EU - Indicative Occupational Exposure Limit (IOEL)	
IOEL TWA	5 mg/m ³
Hydrocarbons, C11-C13, isoalkanes, <2% aromatics	
EU - Indicative Occupational Exposure Limit (IOEL)	
IOEL TWA [ppm]	1200 ppm
Distillates (petroleum), hydrotreated light paraffinic (64742-55-8)	
EU - Indicative Occupational Exposure Limit (IOEL)	
IOEL TWA	5 mg/m ³
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA) [1]	5 mg/m ³
Toluene (108-88-3)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Toluene
IOEL TWA	192 mg/m ³
IOEL TWA [ppm]	50 ppm
IOEL STEL	384 mg/m ³
IOEL STEL [ppm]	100 ppm
Remark	Skin

77820 - Turbine Oil 46

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Toluene (108-88-3)	
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA) [1]	191 mg/m ³
WEL STEL (OEL STEL)	384 mg/m ³
naphthalene (91-20-3)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Naphthalene
IOEL TWA	50 mg/m ³
IOEL TWA [ppm]	10 ppm
IOEL STEL	15 mg/m ³
Remark	(Year of adoption 2010)
Regulatory reference	COMMISSION DIRECTIVE 91/322/EEC; SCOEL Recommendations
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA) [1]	53 mg/m ³
WEL TWA (OEL TWA) [2]	10 ppm
WEL STEL (OEL STEL)	80 mg/m ³
WEL STEL (OEL STEL) [ppm]	15 ppm
diphenylamine (122-39-4)	
EU - Indicative Occupational Exposure Limit (IOEL)	
IOEL TWA	10 mg/m ³
IOEL STEL	20 mg/m ³
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA) [1]	10 mg/m ³
WEL STEL (OEL STEL)	20 mg/m ³
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil (72623-87-1)	
EU - Indicative Occupational Exposure Limit (IOEL)	
IOEL TWA	5 mg/m ³
IOEL STEL	10 mg/m ³

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

77820 - Turbine Oil 46

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment:

Gloves. Safety glasses. Protective clothing.

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Safety glasses

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Time of penetration is to be checked with the glove producer

8.2.2.3. Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Brown.
Odour	: Not available
Odour threshold	: Not available
Melting point	: Not applicable
Freezing point	: -33 °C (ASTM D7346)
Boiling point	: Not available
Flammability	: Non flammable.
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: > 213 °C (ASTM D92)
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
pH	: Not available
Viscosity, kinematic	: 47.2 mm ² /s @ 40°C (ASTM D7042)
Solubility	: insoluble in water.
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Density	: 857 kg/m ³ @ 15°C (ASTM D4052)

77820 - Turbine Oil 46

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Relative density : Not available
Relative vapour density at 20°C : Not available
Particle characteristics : Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)	
LD50 oral (rat)	> 5000 mg/kg bodyweight 401 Acute Oral Toxicity Test
LD50 dermal (rabbit)	> 2000 mg/kg 402 Acute Dermal Toxicity Test
LC50 inhalation (rat) (mg/l)	> 5000 mg/l/4h
LC50 inhalation (rat) (Dust/Mist - mg/l/4h)	> 5.53 mg/l/4h 403 Acute Inhalation Toxicity Test
Hydrocarbons, C10-C13, aromatics, <1% naphthalene	
LD50 oral (rat)	> 6318 mg/kg OECD TG 401
LD50 dermal (rat)	> 2000 mg/kg OECD TG 402
LC50 inhalation (rat) (Dust/Mist - mg/l/4h)	> 4.778 mg/l/4h OECD TG 403
N-Phenyl-1-naphthylamin (90-30-2)	
LD50 oral (rat)	1625 mg/kg Animal: rat, Animal sex: male, 95% CL: 1201 - 2197
LD50 dermal (rabbit)	> 5000 mg/kg

77820 - Turbine Oil 46

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (72623-86-0)	
LD50 oral (rat)	> 5000 mg/kg bodyweight 401 Acute Oral Toxicity Test
LD50 dermal (rabbit)	> 5000 mg/kg 402 Acute Dermal Toxicity Test
LC50 inhalation (rat) (mg/l)	5.53 mg/l 403 Acute Inhalation Toxicity
LC50 inhalation (rat) (Dust/Mist - mg/l/4h)	> 5.53 mg/l/4h 403 Acute Inhalation Toxicity Test
Hydrocarbons, C11-C13, isoalkanes, <2% aromatics	
LD50 oral (rat)	> 5000 mg/kg
LD50 dermal (rabbit)	> 5000 mg/kg
LC50 inhalation (rat) (Dust/Mist - mg/l/4h)	> 5 mg/l/4h
Distillates (petroleum), hydrotreated light paraffinic (64742-55-8)	
LD50 oral (rat)	> 5000 mg/kg 401 Acute Oral Toxicity Test
LD50 dermal (rabbit)	> 5000 mg/kg 402 Acute Dermal Toxicity Test
LC50 inhalation (rat) (Dust/Mist - mg/l/4h)	> 5.53 mg/l/4h 403 Acute Inhalation Toxicity Test
Toluene (108-88-3)	
LD50 oral (rat)	5580 mg/kg bodyweight OECD 401
LD50 dermal (rabbit)	12124 mg/kg OECD 402
LC50 inhalation (rat) (Dust/Mist - mg/l/4h)	25.7 mg/l/4h
naphthalene (91-20-3)	
LD50 oral (rat)	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LC50 inhalation (rat) (mg/l)	> 0.4 mg/l air Animal: rat, Guideline: other:EPA TSCA, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), Guideline: EPA OPPTS 870.1300 (Acute inhalation toxicity)
diphenylamine (122-39-4)	
LD50 oral (rat)	1165 mg/kg
LD50 dermal (rabbit)	> 5000 mg/kg
1-naphthol (90-15-3)	
LD50 oral (rat)	1870 mg/kg
LD50 dermal (rabbit)	880 mg/kg
LC50 inhalation (rat) (Dust/Mist - mg/l/4h)	> 97 mg/l/4h
Methanol (67-56-1)	
LD50 oral (rat)	5600 mg/kg
LD50 dermal (rabbit)	15800 mg/kg
LC50 inhalation (rat) (ppm)	64000 ppm/4h
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil (72623-87-1)	
LD50 oral (rat)	> 5000 mg/kg
LD50 dermal (rabbit)	> 2000 mg/kg
LC50 inhalation (rat) (Dust/Mist - mg/l/4h)	> 5.53 mg/l/4h
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified

77820 - Turbine Oil 46

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified

N-Phenyl-1-naphthylamin (90-30-2)

NOAEL (animal/male, F0/P)	< 40 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: EPA OPP 83-4 (Reproduction and Fertility Effects), Guideline: EU Method B.35 (Two-Generation Reproduction Toxicity Test)
NOAEL (animal/female, F0/P)	< 46 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: EPA OPP 83-4 (Reproduction and Fertility Effects), Guideline: EU Method B.35 (Two-Generation Reproduction Toxicity Test)

naphthalene (91-20-3)

LOAEL (animal/female, F0/P)	50 mg/kg bodyweight OECD Guideline 414
LOAEL (animal/female, F1)	450 mg/kg bodyweight OECD Guideline 414
NOAEL (animal/female, F0/P)	120 mg/kg bodyweight OECD Guideline 414

STOT-single exposure : Not classified

Toluene (108-88-3)

STOT-single exposure : May cause drowsiness or dizziness.

1-naphthol (90-15-3)

STOT-single exposure : May cause respiratory irritation.

Methanol (67-56-1)

STOT-single exposure : Causes damage to organs.

STOT-repeated exposure : Not classified

Distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)

LOAEL (oral, rat, 90 days) : 125 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 408

Hydrocarbons, C10-C13, aromatics, <1% naphthalene

NOAEL (oral, rat, 90 days) : 300 mg/kg bodyweight OECD Guideline 408
NOAEL (subchronic, oral, animal/male, 90 days) : 300 mg/kg bodyweight

N-Phenyl-1-naphthylamin (90-30-2)

STOT-repeated exposure : May cause damage to organs through prolonged or repeated exposure.

Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (72623-86-0)

LOAEL (oral, rat, 90 days) : 125 mg/kg bodyweight

Hydrocarbons, C11-C13, isoalkanes, <2% aromatics

NOAEL (subchronic, oral, animal/male, 90 days) : 1000 mg/kg bodyweight

Distillates (petroleum), hydrotreated light paraffinic (64742-55-8)

LOAEL (oral, rat, 90 days) : 125 mg/kg bodyweight/day Animal: rat, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)

Toluene (108-88-3)

NOAEL (oral, rat, 90 days) : 625 mg/kg bodyweight/day
STOT-repeated exposure : May cause damage to organs through prolonged or repeated exposure.

naphthalene (91-20-3)

LOAEL (oral, rat, 90 days) : 400 mg/kg bodyweight OECD 408

77820 - Turbine Oil 46

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

naphthalene (91-20-3)	
LOAEC (inhalation, rat, vapour, 90 days)	0.011 mg/l air OECD Guideline 413
NOAEL (dermal, rat/rabbit, 90 days)	1000 mg/kg bodyweight OECD Guideline 411
diphenylamine (122-39-4)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
1-naphthol (90-15-3)	
NOAEL (subchronic, oral, animal/male, 90 days)	130 mg/kg bodyweight
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil (72623-87-1)	
LOAEL (oral, rat, 90 days)	125 mg/kg bodyweight/day
Aspiration hazard	: Not classified
77820 - Turbine Oil 46	
Viscosity, kinematic	47.2 mm ² /s @ 40°C (ASTM D7042)
Distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)	
Viscosity, kinematic	≈ 98 mm ² /s @ 40°C
Hydrocarbons, C10-C13, aromatics, <1% naphthalene	
Viscosity, kinematic	4.25 mm ² /s
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (72623-86-0)	
Viscosity, kinematic	2978 mm ² /s 40°C
Hydrocarbons, C11-C13, isoalkanes, <2% aromatics	
Viscosity, kinematic	1.77 mm ² /s
Distillates (petroleum), hydrotreated light paraffinic (64742-55-8)	
Viscosity, kinematic	< 20.5 mm ² /s @40°C
Toluene (108-88-3)	
Viscosity, kinematic	0.644 mm ² /s @20°C
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil (72623-87-1)	
Viscosity, kinematic	47 mm ² /s

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Harmful to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Harmful to aquatic life with long lasting effects.

Distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)	
LC50 - Fish [1]	> 100 mg/l Pimephales promelas
EC50 - Crustacea [1]	> 10000 mg/l Daphnia magna

77820 - Turbine Oil 46

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)	
EC50 72h - Algae [1]	> 100 mg/l Pseudokirchneriella subcapitat
NOEC chronic fish	1000 mg/l Oncorhynchus mykiss (14d)
NOEC chronic crustacea	10 mg/l Daphnia magna (21d)
NOEC chronic algae	≥ 100 mg/l Pseudokirchneriella subcapitata (72h)
Hydrocarbons, C10-C13, aromatics, <1% naphthalene	
LC50 - Fish [1]	3.6 mg/l Oncorhynchus mykiss (OECD 203)
EC50 - Crustacea [1]	1.1 mg/l OECD 202
ErC50 algae	3.8 mg/l 72h (Pseudokirchneriella subcapitata, OECD 201)
NOEC chronic fish	0.103 mg/l 28 d (PETROTOX QSAR)
NOEC chronic crustacea	0.179 mg/l 21 d (Daphnia magna, OECD 211)
NOEC chronic algae	0.179 mg/l 72h (Pseudokirchneriella subcapitata, OECD 201)
N-Phenyl-1-naphthylamin (90-30-2)	
LC50 - Fish [1]	0.44 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [1]	0.3 mg/l Daphnia magna
EC50 96h - Algae [1]	0.93 mg/l Pseudokirchneriella subcapitata
NOEC chronic crustacea	0.032 mg/l Daphnia magna (21d)
NOEC chronic algae	0.032 mg/l Daphnia magna (21d)
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (72623-86-0)	
LC50 - Fish [1]	> 100 mg/l Pimephales promelas
EC50 - Crustacea [1]	> 10000 mg/l Daphnia magna
NOEC chronic fish	1000 mg/l Oncorhynchus mykiss (14d)
NOEC chronic crustacea	10 mg/l Daphnia magna (21d)
NOEC chronic algae	≥ 100 mg/l Pseudokirchneriella subcapitata (72h)
Hydrocarbons, C11-C13, isoalkanes, <2% aromatics	
LC50 - Fish [1]	> 1000 mg/l Oncorhynchus mykiss
EC50 - Crustacea [1]	> 1000 mg/l Daphnia magna
EC50 72h - Algae [1]	> 1000 mg/l Raphidocelis subcapitata
NOEC chronic algae	100 mg/l Raphidocelis subcapitata (72h)
Distillates (petroleum), hydrotreated light paraffinic (64742-55-8)	
LC50 - Fish [1]	> 100 mg/l Pimephales promelas
EC50 - Crustacea [1]	> 10000 mg/l Daphnia magna
EC50 72h - Algae [1]	> 100 mg/l Pseudokirchneriella subcapitat
NOEC chronic fish	1000 mg/l Oncorhynchus mykiss (14d)
NOEC chronic crustacea	10 mg/l Daphnia magna (21d)
NOEC chronic algae	≥ 100 mg/l Pseudokirchneriella subcapitata (72h)
Toluene (108-88-3)	
LC50 - Fish [1]	5.5 mg/l Oncorhynchus kisutch

77820 - Turbine Oil 46

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Toluene (108-88-3)	
EC50 - Crustacea [1]	3.78 mg/l Ceriodaphnia Dubia
EC50 72h - Algae [1]	134 mg/l Pseudokirchneriella subcapitata
NOEC chronic fish	1.39 mg/l 40d
NOEC chronic crustacea	0.74 mg/l Ceriodaphnia dubia (7d)
naphthalene (91-20-3)	
LC50 - Fish [1]	0.51 mg/l Oncorhynchus mykiss
EC50 - Crustacea [1]	3.4 mg/l Daphnia magna
NOEC (chronic)	0.59 mg/l (Daphnia pulex; 125 d)
diphenylamine (122-39-4)	
LC50 - Fish [1]	3.79 mg/l Pimephales promelas
EC50 - Crustacea [1]	2 mg/l Daphnia magna (OECD 202)
EC50 72h - Algae [1]	0.43 mg/l Pseudokirchnerella subcapitata
NOEC chronic fish	0.625 mg/l Oryzias latipes (21d)
NOEC chronic crustacea	0.125 mg/l Daphnia magna (OECD Test Guideline 202) (21d)
NOEC chronic algae	0.027 mg/l Pseudokirchnerella subcapitata (72h)
1-naphthol (90-15-3)	
LC50 - Fish [1]	0.33 mg/l M. cavasius
EC50 - Crustacea [1]	2.51 mg/l Daphnia magna
EC50 72h - Algae [1]	> 2.18 mg/l Pseudokirchneriella subcapitata
NOEC chronic crustacea	0.25 mg/l Daphnia magna (21d)
NOEC chronic algae	> 2.18 mg/l Pseudokirchneriella subcapitata (72h)
Methanol (67-56-1)	
LC50 - Fish [1]	100 mg/l Fathead minnow
EC50 - Crustacea [1]	22200 – 23400 mg/l Daphnia obtusa
EC50 96h - Algae [1]	16.912 mg/l Green algae
NOEC chronic algae	9.96 mg/l Green algae (96h)
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil (72623-87-1)	
LC50 - Fish [1]	> 100 mg/l Pimephales promelas
EC50 - Crustacea [1]	> 10000 Daphnia magna
NOEC chronic fish	1000 mg/l Oncorhynchus mykiss (14d)
NOEC chronic crustacea	10 mg/l Daphnia magna (21d)
NOEC chronic algae	100 mg/l Pseudokirchneriella subcapitata (72h)
12.2. Persistence and degradability	
Distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)	
Persistence and degradability	Not readily biodegradable.
Biodegradation	31 % OECD TG 301 F (28d)

77820 - Turbine Oil 46

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Hydrocarbons, C10-C13, aromatics, <1% naphthalene	
Persistence and degradability	Readily biodegradable.
Biodegradation	70 % 28d OECD 301F
N-Phenyl-1-naphthylamin (90-30-2)	
Persistence and degradability	Not readily biodegradable.
Biodegradation	0 % 28d
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (72623-86-0)	
Persistence and degradability	Not readily biodegradable.
Biodegradation	31 % 28 d OECD 301F
Hydrocarbons, C11-C13, isoalkanes, <2% aromatics	
Biodegradation	31.3 % 28 d Richtlijn test OECD 301F
Distillates (petroleum), hydrotreated light paraffinic (64742-55-8)	
Biodegradation	31 % OECD TG 301 F (28d)
Toluene (108-88-3)	
Biodegradation	80 %
naphthalene (91-20-3)	
Persistence and degradability	Not readily biodegradable.
Biodegradation	2 %
diphenylamine (122-39-4)	
Biodegradation	26 % OECD TG 301 D (28d)
1-naphtol (90-15-3)	
Biodegradation	77.8 % OECD 301B (29d)
Methanol (67-56-1)	
Biodegradation	99 % (28d)
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil (72623-87-1)	
Biodegradation	31 %
12.3. Bioaccumulative potential	
Distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)	
Partition coefficient n-octanol/water (Log Pow)	3.9 – 6
Hydrocarbons, C10-C13, aromatics, <1% naphthalene	
Bioconcentration factor (BCF REACH)	5780
Partition coefficient n-octanol/water (Log Pow)	6.5
N-Phenyl-1-naphthylamin (90-30-2)	
Bioconcentration factor (BCF REACH)	1424
Partition coefficient n-octanol/water (Log Pow)	4.28
Hydrocarbons, C11-C13, isoalkanes, <2% aromatics	
Bioconcentration factor (BCF REACH)	2500

77820 - Turbine Oil 46

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Distillates (petroleum), hydrotreated light paraffinic (64742-55-8)

Partition coefficient n-octanol/water (Log Pow)	> 6
---	-----

Toluene (108-88-3)

Bioconcentration factor (BCF REACH)	90
Partition coefficient n-octanol/water (Log Kow)	2.73 @20°C

naphthalene (91-20-3)

Bioconcentration factor (BCF REACH)	< 100
Partition coefficient n-octanol/water (Log Pow)	3.01

diphenylamine (122-39-4)

Bioconcentration factor (BCF REACH)	151.36
Partition coefficient n-octanol/water (Log Kow)	3.4

1-naphthol (90-15-3)

Partition coefficient n-octanol/water (Log Pow)	2.85
---	------

Methanol (67-56-1)

Bioconcentration factor (BCF REACH)	< 10
Partition coefficient n-octanol/water (Log Pow)	-0.77

12.4. Mobility in soil

Hydrocarbons, C10-C13, aromatics, <1% naphthalene

Organic Carbon Normalized Adsorption Coefficient (Log Koc)	3.11 @ 20°C
--	-------------

Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based (72623-86-0)

Ecology - soil	Adsorbs into the soil.
----------------	------------------------

naphthalene (91-20-3)

Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2.6
--	-----

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	:	Dispose of contents/container in accordance with licensed collector's sorting instructions.
European List of Waste (LoW, EC 2000/532)	:	13 01 10* - mineral based non-chlorinated hydraulic oils

77820 - Turbine Oil 46

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

HP Code

: HP3 - "Flammable:"
– flammable liquid waste: liquid waste having a flash point below 60 °C or waste gas oil, diesel and light heating oils having a flash point > 55 °C and ≤ 75 °C;
– flammable pyrophoric liquid and solid waste: solid or liquid waste which, even in small quantities, is liable to ignite within five minutes after coming into contact with air;
– flammable solid waste: solid waste which is readily combustible or may cause or contribute to fire through friction;
– flammable gaseous waste: gaseous waste which is flammable in air at 20 °C and a standard pressure of 101.3 kPa;
– water reactive waste: waste which, in contact with water, emits flammable gases in dangerous quantities;
– other flammable waste: flammable aerosols, flammable self-heating waste, flammable organic peroxides and flammable self-reactive waste.
HP5 - "Specific Target Organ Toxicity (STOT)/Aspiration Toxicity:" waste which can cause specific target organ toxicity either from a single or repeated exposure, or which cause acute toxic effects following aspiration.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
Not regulated for transport				
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No
No supplementary information available				

14.6. Special precautions for user

Overland transport

No data available

Transport by sea

No data available

Air transport

No data available

Inland waterway transport

No data available

Rail transport

No data available

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

77820 - Turbine Oil 46

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals): Diphenylamine (122-39-4)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

Name	CN designation	CAS-No.	CN code	Category	Threshold	Annex
Toluene		108-88-3	2902 30 00	Category 3		Annex I

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes			
Section	Changed item	Change	Comments
	Supersedes	Modified	
	Revision date	Modified	
2.1	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Added	
2.1	Adverse physicochemical, human health and environmental effects	Modified	
2.2	Precautionary statements (CLP)	Added	
2.2	Hazard statements (CLP)	Added	
2.2	EUH-statements	Modified	
3	Composition/information on ingredients	Modified	

77820 - Turbine Oil 46

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Indication of changes			
Section	Changed item	Change	Comments
8.2	Hand protection	Modified	
9.1	Freezing point	Modified	
9.1	Viscosity, kinematic	Modified	
9.1	Flash point	Modified	
9.1	Density	Modified	
9.1	Solubility	Added	
12.1	Ecology - general	Modified	

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)

77820 - Turbine Oil 46

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Abbreviations and acronyms:

TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Full text of H- and EUH-statements:

Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 3 (Inhalation)	Acute toxicity (inhal.), Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Asp. Tox. 1	Aspiration hazard, Category 1
Carc. 2	Carcinogenicity, Category 2
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH208	Contains N-Phenyl-1-naphthylamin(90-30-2). May produce an allergic reaction.
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Flam. Liq. 2	Flammable liquids, Category 2
H225	Highly flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H361d	Suspected of damaging the unborn child.
H370	Causes damage to organs.
H371	May cause damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.

77820 - Turbine Oil 46

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Full text of H- and EUH-statements:	
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2
STOT SE 1	Specific target organ toxicity – single exposure, Category 1
STOT SE 2	Specific target organ toxicity – Single exposure, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.