



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 as amended by Regulation (EU) No. 2020/878, and
Regulation (EC) No. 1272/2008

Issuing Date 11-Apr-2024

Revision Date 11-Apr-2024

Revision Number 1

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

1.1. Product identifier

Product Name HP Marine® Synthetic 2-Stroke Oil

Product Code(s) HPM

Synonyms None

Pure substance/mixture Mixture

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

Recommended use Lubricating Oil

Uses advised against Avoid formation of mists

1.3. Details of the supplier of the safety data sheet

Supplier

AMSOIL INC.
One AMSOIL Center
Superior, WI 54880, USA
T: +1 715-392-7101

For further information, please contact

E-mail address compliance@amsoil.com

1.4. Emergency telephone number

Emergency telephone CHEMTREC International: +1 703-741-5970

Emergency telephone - §45 - (EC)1272/2008

Europe 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Skin irritation	Category 2 - (H315)
Eye irritation	Category 2 - (H319)
Specific target organ toxicity — single exposure	Category 3 - (H336)
Category 3 Narcotic effects	
Chronic aquatic toxicity	Category 2 - (H411)

2.2. Label elements

Contains Base oil; Base oil; Base oil; Benzene, 1,2,4-trimethyl-

**Signal word**

Warning

Hazard statements

H315 - Causes skin irritation.

H319 - Causes serious eye irritation.

H336 - May cause drowsiness or dizziness.

H411 - Toxic to aquatic life with long lasting effects.

Precautionary Statements - EU (§28, 1272/2008)

P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 - Wash face, hands and any exposed skin thoroughly after handling.

P273 - Avoid release to the environment.

P280 - Wear protective gloves and eye/face protection.

P321 - Specific treatment (see supplemental first aid instructions on this label).

P391 - Collect spillage.

36.76 % of the mixture consists of ingredient(s) of unknown acute toxicity.

Unknown aquatic toxicity

Contains 0 % of components with unknown hazards to the aquatic environment.

2.3. Other hazards**Other hazards**

Harmful to aquatic life.

PBT & vPvB

None known

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors.

SECTION 3: Composition/information on ingredients**3.1 Substances**

Not applicable

3.2 Mixtures

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Base oil 64742-54-7	35-40	No data available	265-157-1 (649-467-00-8)	Carc. 1B (H350) (*L)	-	-	-
Synthetic Ester -	10-30	No data available	No information available	Skin. Irrit.2 (H315) Eye Irrit. 2 (H319)	-	-	-
Base oil 64742-47-8	7-13	No data available	265-149-8 (649-422-00-2)	Asp. Tox. 1 (H304)	-	-	-

				Skin Irrit. 2 (H315) Aquatic Chronic 2 (H411) Flam. Liq. 3 (H226) STOT SE 3 (H336) Eye Irrit. 2A (H319)			
Base oil 64742-48-9	7-13	No data available	265-150-3 (649-327-00-6)	Flam. Liq. 3 (H226) Skin Irrit. 2 (H315) STOT SE 3 (H336) Asp. Tox. 1 (H304) Aquatic Chronic 2 (H411) Eye Irrit. 2A (H319)	-	-	-
Base oil 64742-95-6	1-5	No data available	265-199-0 (649-356-00-4)	Flam. Liq. 3 (H226) Asp. Tox. 1 { H304) STOT SE 3 (H335) STOT SE 3 (H336)	-	-	-
Benzene, 1,2,4-trimethyl- 95-63-6	0.1-1	No data available	202-436-9 (601-043-00-3)	Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) STOT SE 3 (H335) Aquatic Chronic 2 (H411) Flam. Liq. 3 (H226)	-	-	-
Base oil 8042-47-5	0.1-0.2	No data available	232-455-8	Asp. Tox. 1 (H304)	-	-	-

Full text of H- and EUH-phrases: see section 16Acute Toxicity Estimate

If LD50/LC50 data is not available or does not correspond to the classification category, then the appropriate conversion value from CLP Annex I, Table 3.1.2, is used to calculate the acute toxicity estimate (ATE_{mix}) for classifying a mixture based on its components

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Base oil 64742-54-7	15000	5000	No data available	No data available	No data available

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Base oil 64742-47-8	5000	2000	5.2	No data available	No data available
Base oil 64742-48-9	6000	5000	8.5	No data available	No data available
Base oil 64742-95-6	8400	2000	No data available	No data available	No data available
Benzene, 1,2,4-trimethyl- 95-63-6	3280	3160	18	No data available	No data available
Base oil 8042-47-5	5000	No data available	No data available	No data available	No data available

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59)

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance.
Inhalation	Remove to fresh air. IF exposed or concerned: Get medical advice/attention. Get medical attention immediately if symptoms occur.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a doctor.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

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

Symptoms	Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitisation in susceptible persons. May cause gastrointestinal discomfort if consumed in large amounts. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness and difficulty breathing. May cause redness and tearing of the eyes. Burning sensation. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Effects of Exposure	None.

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

Note to doctors	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media Water spray, carbon dioxide (CO₂), dry chemical, alcohol-resistant foam. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical Containers can burst or explode when heated, due to excessive pressure build-up. Thermal decomposition can lead to release of irritating gases and vapours.

Hazardous combustion products Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

5.3. Advice for firefighters

Specific/special fire-fighting measures Fires need to be assessed to determine appropriate protocols and safety measures for firefighting, including establishing safe zones, extinguishing media to be used, firefighter protection, and actions to control or extinguish the fire.

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections For additional information see: Section 8: Exposure controls/personal protection; Section 12: Ecological information; Section 13: Disposal considerations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Avoid contact with used product. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse. Ensure adequate ventilation. Avoid breathing vapours or mists. In case of insufficient ventilation,

wear suitable respiratory equipment.

General hygiene considerations Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes or clothing.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Do not reuse empty containers. Store away from incompatible materials. See section 10 for more information. Keep containers tightly closed in a dry, cool and well-ventilated place.

Storage class (TRGS 510) LGK 10.

7.3. Specific end use(s)

Specific use(s). No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits Under conditions which may generate mists, the following exposure limits are recommended: Long-term exposure limit (8-hour TWA): 5 mg/m³. Short-term exposure limit (15-minute): 10 mg/m³.

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
Benzene, 1,2,4-trimethyl-95-63-6	TWA: 20 ppm TWA: 100 mg/m ³	TWA: 20 ppm TWA: 100 mg/m ³ STEL 30 ppm STEL 150 mg/m ³	-	TWA: 20 ppm TWA: 100.0 mg/m ³	TWA: 20 ppm TWA: 100 mg/m ³
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Base oil 64742-47-8	-	-	-	TWA: 5 mg/m ³ STEL: 500 mg/m ³	-
Benzene, 1,2,4-trimethyl-95-63-6	TWA: 20 ppm TWA: 100 mg/m ³	TWA: 100 mg/m ³ Sk* Ceiling: 250 mg/m ³	TWA: 20 ppm TWA: 100 mg/m ³ STEL: 40 ppm STEL: 200 mg/m ³	TWA: 20 ppm TWA: 100 mg/m ³	TWA: 20 ppm TWA: 100 mg/m ³
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Base oil 64742-47-8	-	TWA:	TWA: 5 mg/m ³ TWA: 50 ppm TWA: 350 mg/m ³ Peak: 20 mg/m ³ Peak: 100 ppm Peak: 700 mg/m ³	-	-
Base oil 64742-48-9	-	-	TWA: 50 ppm TWA: 300 mg/m ³ Peak: 100 ppm Peak: 600 mg/m ³	-	-
Benzene, 1,2,4-trimethyl-95-63-6	TWA: 20 ppm TWA: 100 mg/m ³ STEL: 50 ppm STEL: 250 mg/m ³	TWA: 20 ppm TWA: 100 mg/m ³	TWA: 20 ppm TWA: 100 mg/m ³ Peak: 40 ppm Peak: 200 mg/m ³	TWA: 25 ppm TWA: 125 mg/m ³	TWA: 100 mg/m ³ TWA: 20 ppm
Base oil 8042-47-5	-	TWA: 5 mg/m ³	TWA: 5 mg/m ³ Peak: 20 mg/m ³	-	TWA: 5 mg/m ³
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Benzene, 1,2,4-trimethyl-95-63-6	TWA: 20 ppm TWA: 100 mg/m ³ STEL: 60 ppm STEL: 300 mg/m ³	TWA: 20 ppm TWA: 100 mg/m ³	-	TWA: 20 ppm TWA: 100 mg/m ³	-
Base oil	-	-	-	TWA: 5 mg/m ³	-

8042-47-5					
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
Base oil 64742-48-9	-	-	-	-	TWA: 300 mg/m ³ STEL: 900 mg/m ³
Benzene, 1,2,4-trimethyl- 95-63-6	TWA: 20 ppm TWA: 100 mg/m ³	TWA: 20 ppm TWA: 100 mg/m ³	TWA: 20 ppm TWA: 100 mg/m ³ STEL: 40 ppm STEL: 200 mg/m ³	TWA: 20 ppm TWA: 100 mg/m ³ STEL: 150 mg/m ³ STEL: 30 ppm	TWA: 100 mg/m ³ STEL: 170 mg/m ³ Sk*
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Benzene, 1,2,4-trimethyl- 95-63-6	TWA: 20 ppm TWA: 100 mg/m ³	TWA: 20 ppm TWA: 100 mg/m ³	TWA: 20 ppm TWA: 100 mg/m ³	TWA: 20 ppm TWA: 100 mg/m ³ STEL: 40 ppm STEL: 200 mg/m ³	TWA: 20 ppm TWA: 100 mg/m ³
Base oil 8042-47-5	-	-	-	TWA: 5 mg/m ³ STEL: 20 mg/m ³	-
Chemical name	Sweden		Switzerland		United Kingdom
Base oil 64742-47-8	-		TWA: 50 ppm TWA: 350 mg/m ³ TWA: 5 mg/m ³ STEL: 100 ppm STEL: 700 mg/m ³		-
Base oil 64742-48-9	-		TWA: 50 ppm TWA: 300 mg/m ³ STEL: 100 ppm STEL: 600 mg/m ³		-
Benzene, 1,2,4-trimethyl- 95-63-6	NGV: 20 ppm NGV: 100 mg/m ³ Bindande KGV: 35 ppm Bindande KGV: 170 mg/m ³		-		-
Base oil 8042-47-5	-		TWA: 5 mg/m ³		-

Biological occupational exposure limits

Chemical name	Denmark	Finland	France	Germany DFG	Germany TRGS
Benzene, 1,2,4-trimethyl- 95-63-6	-	-	- urine (Total Dimethylbenzoic acids (after hydrolysis) in urine) - end of shift after several shifts	400 mg/g Creatinine (urine - Dimethylbenzoic acid (sum of all isomers after hydrolysis) end of shift) 400 mg/g Creatinine (urine - Dimethylbenzoic acid (sum of all isomers after hydrolysis) for long-term exposures: at the end of the shift after several shifts) 400 mg/g Creatinine - BAT (for long-term exposures: at the end of the shift after several shifts) urine	400 mg/g Creatinine (urine - Dimethylbenzoic acid (sum of all isomers after hydrolysis) end of shift) 400 mg/g Creatinine (urine - Dimethylbenzoic acid (sum of all isomers after hydrolysis) for long-term exposures: at the end of the shift after several shifts)
Chemical name	Slovenia	Spain	Switzerland	United Kingdom	

Benzene, 1,2,4-trimethyl- 95-63-6	400 mg/g Creatinine - urine (Dimethylbenzoic acid (all isomers after hydrolysis)) - at the end of the work shift; for long-term exposure: at the end of the work shift after several consecutive workdays	-	-	-
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Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
Base oil 64742-54-7	-	0.97 mg/kg bw/day [4] [6]	2.73 mg/m ³ [4] [6] 5.58 mg/m ³ [5] [6]
Base oil 64742-48-9	-	-	1286.4 mg/m ³ [4] [7] 837.5 mg/m ³ [5] [6] 1066.67 mg/m ³ [5] [7]
Base oil 64742-95-6	-	-	1286.4 mg/m ³ [4] [7] 837.5 mg/m ³ [5] [6] 1066.67 mg/m ³ [5] [7]
Benzene, 1,2,4-trimethyl- 95-63-6	-	16171 mg/kg bw/day [4] [6]	100 mg/m ³ [4] [6] 100 mg/m ³ [4] [7] 100 mg/m ³ [5] [6] 100 mg/m ³ [5] [7]
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene 68411-46-1	-	0.08 mg/kg bw/day [4] [6]	0.6 mg/m ³ [4] [6]
Benzene, 1,3,5-trimethyl- 108-67-8	-	16171 mg/kg bw/day [4] [6]	100 mg/m ³ [4] [6] 100 mg/m ³ [4] [7] 100 mg/m ³ [5] [6] 100 mg/m ³ [5] [7]
Base oil 8042-47-5	-	217.05 mg/kg bw/day [4] [6]	164.56 mg/m ³ [4] [6]
Base oil 72623-86-0	-	0.97 mg/kg bw/day [4] [6]	2.73 mg/m ³ [4] [6] 5.58 mg/m ³ [5] [6]
Cumene 98-82-8	-	15.4 mg/kg bw/day [4] [6]	100 mg/m ³ [4] [6] 250 mg/m ³ [5] [7]
Dipropylene Glycol Monomethyl Ether 34590-94-8	-	283 mg/kg bw/day [4] [6]	308 mg/m ³ [4] [6]
Naphthalene 91-20-3	-	3.57 mg/kg bw/day [4] [6]	25 mg/m ³ [4] [6] 25 mg/m ³ [5] [6]
Xylene 1330-20-7	-	212 mg/kg bw/day [4] [6]	221 mg/m ³ [4] [6] 442 mg/m ³ [4] [7] 221 mg/m ³ [5] [6] 442 mg/m ³ [5] [7]
Toluene 108-88-3	-	384 mg/kg bw/day [4] [6]	192 mg/m ³ [4] [6] 384 mg/m ³ [4] [7] 192 mg/m ³ [5] [6] 384 mg/m ³ [5] [7]
Ethylbenzene 100-41-4	-	180 mg/kg bw/day [4] [6]	77 mg/m ³ [4] [6] 293 mg/m ³ [5] [7]

Notes

[4]	Systemic health effects.
[5]	Local health effects.
[6]	Long term.
[7]	Short term.

Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
Base oil 64742-54-7	0.74 mg/kg bw/day [4] [6]	-	1.19 mg/m ³ [5] [6]
Base oil 64742-47-8	18.75 mg/kg bw/day [4] [6]	-	-
Base oil 64742-48-9	-	-	1152 mg/m ³ [4] [7] 178.57 mg/m ³ [5] [6] 640 mg/m ³ [5] [7]
Base oil 64742-95-6	-	-	1152 mg/m ³ [4] [7] 178.57 mg/m ³ [5] [6] 640 mg/m ³ [5] [7]
Benzene, 1,2,4-trimethyl- 95-63-6	15 mg/kg bw/day [4] [6]	-	29.4 mg/m ³ [4] [6] 29.4 mg/m ³ [4] [7] 29.4 mg/m ³ [5] [6] 29.4 mg/m ³ [5] [7]
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene 68411-46-1	0.04 mg/kg bw/day [4] [6]	-	0.14 mg/m ³ [4] [6]
Benzene, 1,3,5-trimethyl- 108-67-8	15 mg/kg bw/day [4] [6]	-	29.4 mg/m ³ [4] [6] 29.4 mg/m ³ [4] [7] 29.4 mg/m ³ [5] [6] 29.4 mg/m ³ [5] [7]
Base oil 8042-47-5	25 mg/kg bw/day [4] [6]	-	34.78 mg/m ³ [4] [6]
Base oil 72623-86-0	0.74 mg/kg bw/day [4] [6]	-	1.19 mg/m ³ [5] [6]
Cumene 98-82-8	5 mg/kg bw/day [4] [6]	-	16.6 mg/m ³ [4] [6]
Dipropylene Glycol Monomethyl Ether 34590-94-8	36 mg/kg bw/day [4] [6]	-	37.2 mg/m ³ [4] [6]
Xylene 1330-20-7	12.5 mg/kg bw/day [4] [6]	-	65.3 mg/m ³ [4] [6] 260 mg/m ³ [4] [7] 65.3 mg/m ³ [5] [6] 260 mg/m ³ [5] [7]
Toluene 108-88-3	8.13 mg/kg bw/day [4] [6]	-	56.5 mg/m ³ [4] [6] 226 mg/m ³ [4] [7] 56.5 mg/m ³ [5] [6] 226 mg/m ³ [5] [7]
Ethylbenzene 100-41-4	1.6 mg/kg bw/day [4] [6]	-	15 mg/m ³ [4] [6]

Notes

[4]	Systemic health effects.
[5]	Local health effects.
[6]	Long term.
[7]	Short term.

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
Benzene, 1,2,4-trimethyl- 95-63-6	0.12 mg/L	0.12 mg/L	0.12 mg/L	-	-
Benzenamine, N-phenyl-,	0.0338 mg/L	0.51 mg/L	0.00338 mg/L	-	-

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
reaction products with 2,4,4-trimethylpentene 68411-46-1					
Benzene, 1,3,5-trimethyl- 108-67-8	0.101 mg/L	0.101 mg/L	0.101 mg/L	-	-
Cumene 98-82-8	0.035 mg/L	0.012 mg/L	0.0035 mg/L	-	-
Base oil 64742-94-5	0.001 mg/L	-	0.001 mg/L	-	-
Dipropylene Glycol Monomethyl Ether 34590-94-8	19 mg/L	190 mg/L	1.9 mg/L	-	-
Naphthalene 91-20-3	2.4 µg/L	20 µg/L	2.4 µg/L	-	-
Xylene 1330-20-7	0.327 mg/L	0.327 mg/L	0.327 mg/L	-	-
Toluene 108-88-3	0.68 mg/L	0.68 mg/L	0.68 mg/L	-	-

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
Base oil 64742-54-7	-	-	-	-	9.33 mg/kg food
Benzene, 1,2,4-trimethyl- 95-63-6	13.56 mg/kg sediment dw	13.56 mg/kg sediment dw	2.41 mg/L	2.34 mg/kg soil dw	-
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene 68411-46-1	0.446 mg/kg sediment dw	0.0446 mg/kg sediment dw	10 mg/L	1.76 mg/kg soil dw	-
Benzene, 1,3,5-trimethyl- 108-67-8	7.86 mg/kg sediment dw	7.86 mg/kg sediment dw	2.02 mg/L	1.34 mg/kg soil dw	-
Base oil 72623-86-0	-	-	-	-	9.33 mg/kg food
Cumene 98-82-8	3.22 mg/kg sediment dw	0.322 mg/kg sediment dw	200 mg/L	0.624 mg/kg soil dw	-
Dipropylene Glycol Monomethyl Ether 34590-94-8	70.2 mg/kg sediment dw	7.02 mg/kg sediment dw	4168 mg/L	2.74 mg/kg soil dw	-
Naphthalene 91-20-3	67.2 µg/kg sediment dw	67.2 µg/kg sediment dw	2.9 mg/L	53.3 µg/kg soil dw	-
Xylene 1330-20-7	12.46 mg/kg sediment dw	12.46 mg/kg sediment dw	6.58 mg/L	2.31 mg/kg soil dw	-
Toluene 108-88-3	16.39 mg/kg sediment dw	16.39 mg/kg sediment dw	13.61 mg/L	2.89 mg/kg soil dw	-

8.2. Exposure controls

Engineering controls

Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/face protection

If there is a risk of contact: Wear safety glasses with side shields (or goggles). Eye protection must conform to standard EN 166.

Hand protection	If there is a risk of contact: Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. Wear suitable gloves. Impervious gloves. Gloves must conform to standard EN 374.
Skin and body protection	If there is a risk of contact: Wear suitable protective clothing. Long sleeved clothing. (EN ISO 6529).
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
General hygiene considerations	Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes or clothing.
Environmental exposure controls	Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance		
Physical state	Liquid	
Colour	Blue	
Odour	Hydrocarbons	
Odour threshold	No information available	
Property	Values	Remarks • Method
Melting point / freezing point		No data available
Initial boiling point and boiling range		No data available
Flammability		No data available
Flammability Limit in Air		
Upper flammability or explosive limits		No data available
Lower flammability or explosive limits		No data available
Flash point	104 °C	Cleveland Open Cup ASTM D 92
Autoignition temperature		No data available
Decomposition temperature		No data available
pH		No data available
pH (as aqueous solution)		No data available
Kinematic viscosity	37.3 cSt at 40 °C 7.3 cSt at 100 °C	ASTM D445
Dynamic viscosity		No data available
Water solubility		No data available
Solubility(ies)		No data available
Partition coefficient		No data available
Vapour pressure		No data available
Relative density	0.8670	No data available
Bulk density		No data available
Liquid Density		No data available
Relative vapour density		No data available
Particle characteristics		
Particle Size		No data available
Particle Size Distribution		No data available

9.2. Other information

Pour Point	-55°C [ASTM D 97]
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9.2.1. Information with regards to physical hazard classes

Not applicable

9.2.2. Other safety characteristics

No information available

Fire Point 104°C (COC) [ASTM D 92]

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity None under normal use conditions.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid None known based on information supplied.

10.5. Incompatible materials

Incompatible materials Strong acids. Strong bases. Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal decomposition can lead to release of irritating gases and vapours. Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

SECTION 11: Toxicological information

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

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. May cause drowsiness or dizziness.
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.
Skin contact	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitisation in susceptible persons. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness and difficulty breathing. Redness. May cause redness and tearing of the eyes. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Acute toxicity**Numerical measures of toxicity**

The following values are calculated based on chapter 3.1 of the GHS document:

ATEmix (oral)	128,631.30 mg/kg
ATEmix (dermal)	49,524.20 mg/kg
ATEmix (inhalation-dust/mist)	54.30 mg/l
ATEmix (inhalation-vapour)	695.60 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Base oil 64742-54-7	> 15 g/kg (Rat)	> 5000 mg/kg (Rabbit)	-
Base oil 64742-47-8	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.2 mg/L (Rat) 4 h
Base oil 64742-48-9	> 6000 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	> 8500 mg/m ³ (Rat) 4 h
Base oil 64742-95-6	= 8400 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	= 3400 ppm (Rat) 4 h
Benzene, 1,2,4-trimethyl- 95-63-6	= 3280 mg/kg (Rat)	> 3160 mg/kg (Rabbit)	= 18 g/m ³ (Rat) 4 h
Base oil 8042-47-5	> 5000 mg/kg (Rat)	-	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure**Skin corrosion/irritation**

Classification based on data available for ingredients. Causes skin irritation.

Serious eye damage/eye irritation

Classification based on data available for ingredients. Causes serious eye irritation.

Respiratory or skin sensitisation

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

Germ cell mutagenicity

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

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as mutagenic.

Chemical name	European Union
Base oil	Muta. 1B
Base oil	Muta. 1B

Carcinogenicity

The supplier declares that it can be shown that the substance(s) contain less than 3% DMSO extract as measured by IP 346.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	European Union
Base oil	Not classified
Base oil	Carc. 1B
Base oil	Carc. 1B

Reproductive toxicity

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

STOT - single exposure

May cause drowsiness or dizziness.

STOT - repeated exposure Based on available data, the classification criteria are not met.

Aspiration hazard Due to the viscosity, this product does not present an aspiration hazard.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties No information available.

11.2.2. Other information

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity Toxic to aquatic life with long lasting effects. Harmful to aquatic life.

Unknown aquatic toxicity Contains 0 % of components with unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Base oil 64742-54-7	-	LC50: >5000mg/L (96h, <i>Oncorhynchus mykiss</i>)	-	EC50: >1000mg/L (48h, <i>Daphnia magna</i>)
Base oil 64742-47-8	-	LC50: =45mg/L (96h, <i>Pimephales promelas</i>) LC50: =2.2mg/L (96h, <i>Lepomis macrochirus</i>) LC50: =2.4mg/L (96h, <i>Oncorhynchus mykiss</i>)	-	-
Base oil 64742-48-9	-	LC50: =2200mg/L (96h, <i>Pimephales promelas</i>)	-	-
Base oil 64742-95-6	-	LC50: =9.22mg/L (96h, <i>Oncorhynchus mykiss</i>)	-	EC50: =6.14mg/L (48h, <i>Daphnia magna</i>)
Benzene, 1,2,4-trimethyl- 95-63-6	-	LC50: 7.19 - 8.28mg/L (96h, <i>Pimephales promelas</i>)	-	EC50: =6.14mg/L (48h, <i>Daphnia magna</i>)
Base oil 8042-47-5	-	LC50: >10000mg/L (96h, <i>Lepomis macrochirus</i>)	-	-

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation

Component Information

Chemical name	Partition coefficient
Benzene, 1,2,4-trimethyl-	3.63
Base oil	6

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment The product does not contain any substance(s) classified as PBT or vPvB.

Chemical name	PBT and vPvB assessment
Base oil 64742-54-7	The substance is not PBT / vPvB
Base oil 64742-47-8	The substance is not PBT / vPvB
Base oil 64742-48-9	The substance is not PBT / vPvB
Base oil 64742-95-6	The substance is not PBT / vPvB
Benzene, 1,2,4-trimethyl- 95-63-6	The substance is not PBT / vPvB
Base oil 8042-47-5	The substance is not PBT / vPvB

12.6. Endocrine disrupting properties

Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors.

12.7. Other adverse effects

Other adverse effects No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.
Waste codes / waste designations according to EWC / AVV	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: Transport information

IMDG

14.1 UN number or ID number	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Diphenylamine, Naphthalene)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Diphenylamine, Naphthalene), 9, III, Marine pollutant
14.5 Environmental hazards	Yes
14.6 Special Precautions for Users	
Special Provisions	274, 335, 969
EmS-No.	F-A, S-F
14.7 Maritime transport in bulk according to IMO instruments	No information available

RID

14.1 UN number or ID number	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Diphenylamine, Naphthalene)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Diphenylamine, Naphthalene), 9, III
14.5 Environmental hazards	Yes
14.6 Special Precautions for Users	
Special Provisions	274, 335, 375, 601
Classification code	M6

ADR

14.1 UN number or ID number	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Diphenylamine, Naphthalene)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Diphenylamine, Naphthalene), 9, III
14.5 Environmental hazards	Yes
14.6 Special Precautions for Users	
Special Provisions	274, 335, 601, 375
Classification code	M6
Tunnel restriction code	(-)

ADN

14.1 UN/ID no	UN3082
14.2 EPNN	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Diphenylamine, Naphthalene)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Diphenylamine, Naphthalene), 9, III
14.5 Environmental hazard	Yes
14.6 Special Precautions for Users	
Special Provisions	274, 335, 375, 601
Classification code	M6
Equipment Requirements	PP

IATA

14.1 UN number or ID number	UN3082
14.2 UN proper shipping name	Environmentally hazardous substances, liquid, n.o.s. (Diphenylamine, Naphthalene)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
Description	UN3082, Environmentally hazardous substances, liquid, n.o.s. (Diphenylamine, Naphthalene), 9, III
14.5 Environmental hazards	Yes
14.6 Special Precautions for Users	
Special Provisions	A97, A158, A197
ERG Code	9L
Note:	None

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations**

France**Occupational Illnesses (R-463-3, France)**

Chemical name	French RG number
Base oil 64742-47-8	RG 84
Base oil 64742-48-9	RG 84
Base oil 64742-95-6	RG 84
Benzene, 1,2,4-trimethyl- 95-63-6	RG 84
Base oil 8042-47-5	RG 36bis

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorisations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Base oil - 64742-54-7	Use restricted. See entry 28. Use restricted. See entry 75.	-
Base oil - 64742-48-9	Use restricted. See entry 28. Use restricted. See entry 29. Use restricted. See entry 75.	-
Base oil - 64742-95-6	Use restricted. See entry 28. Use restricted. See entry 29. Use restricted. See entry 75.	-
Benzene, 1,2,4-trimethyl- - 95-63-6	Use restricted. See entry 75.	-

Persistent Organic Pollutants

Not applicable

Dangerous substance category per Seveso Directive (2012/18/EU)

E2 - Hazardous to the Aquatic Environment in Category Chronic 2

Named dangerous substances per Seveso Directive (2012/18/EU)

Chemical name	Lower-tier requirements (tons)	Upper-tier requirements (tons)
Base oil - 64742-48-9	-	25000
Base oil - 64742-95-6	-	25000

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

EU - Plant Protection Products (1107/2009/EC)

Chemical name	EU - Plant Protection Products (1107/2009/EC)
Base oil - 8042-47-5	Plant protection agent

International Inventories

Contact supplier for inventory compliance status

15.2. Chemical safety assessment**Chemical Safety Report**

No information available

SECTION 16: Other information**Key or legend to abbreviations and acronyms used in the safety data sheet****Full text of H-Statements referred to under section 3**

H226 - Flammable liquid and vapour
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
H350 - May cause cancer
H411 - Toxic to aquatic life with long lasting effects

Legend

SVHC: Substances of Very High Concern for Authorisation:
PBT: Persistent, Bioaccumulative, and Toxic (PBT) Substances
vPvB: Very Persistent and very Bioaccumulative (vPvB) Substances
STOT: Specific Target Organ Toxicity
ATE: Acute Toxicity Estimate
LC50: 50% Lethal Concentration
LD50: 50% Lethal Dose

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
SCBA	Self-contained breathing apparatus		

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
European Chemicals Agency (ECHA) (ECHA_API)
Environmental Protection Agency
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
World Health Organization

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Disclaimer

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End of Safety Data Sheet