



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 12-Apr-2024

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Revision Number 1

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

1.1. Product identifier

Product Name Motorcycle Octane Boost

Product Code(s) MOB

Synonyms None

Pure substance/mixture Mixture

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

Recommended use Gasoline additive

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]

Acute toxicity - Oral	Category 4 - (H302)
Acute toxicity - Inhalation (Vapours)	Category 3 - (H331)
Skin irritation	Category 2 - (H315)
Eye irritation	Category 2 - (H319)
Carcinogenicity	Category 2 - (H351)
Specific target organ toxicity — single exposure	Category 3 - (H335)
Category 3 Respiratory irritation	
Aspiration hazard	Category 1 - (H304)
Chronic aquatic toxicity	Category 2 - (H411)

2.2. Label elements

Contains Base oil; Manganese, Tricarbonyl methylcyclopentadienyl



Signal word

Danger

Hazard statements

H302 - Harmful if swallowed.

H304 - May be fatal if swallowed and enters airways.

H315 - Causes skin irritation.

H319 - Causes serious eye irritation.

H331 - Toxic if inhaled.

H335 - May cause respiratory irritation.

H351 - Suspected of causing cancer.

H411 - Toxic to aquatic life with long lasting effects.

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

P273 - Avoid release to the environment.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.

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

P331 - Do NOT induce vomiting.

P391 - Collect spillage.

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.

98.817 % 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.

Additional information

This product requires child resistant fastenings if supplied to the general public. This product requires tactile warnings if supplied to the general public.

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	80-100	No data	270-676-1	Carc. 2 (H351)	-	-	-

68476-34-6		available	(649-227-00-2)				
Manganese, Tricarbonyl methylcyclopentadienyl 12108-13-3	0.5-1.5	No data available	235-166-5	Acute Tox. 1 (H330)parAcute Tox. 2 (H310) Acute Tox. 3 (H301) Aquatic Acute (H400) Aquatic Chronic 1 (H410)	-	-	-
Base oil 64742-94-5	0.1-1	No data available	265-198-5 (649-424-00-3)	Asp. Tox. 1 (H304)	-	-	-
Base oil 64742-47-8	0.1-1	No data available	265-149-8 (649-422-00-2)	Asp. Tox. 1 (H304)	-	-	-
Naphthalene 91-20-3	< 0.1	No data available	202-049-5 (601-052-00-2)	Acute Tox. 4 (H302) Carc. 2 (H351) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	-	-	-

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

Acute 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 (ATEmix) 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 68476-34-6	No data available	2000	No data available	No data available	No data available
Manganese, Tricarbonyl methylcyclopentadienyl 12108-13-3	58	140	No data available	No data available	No data available
Base oil 64742-94-5	5000	2000	0.59	No data available	No data available
Base oil 64742-47-8	5000	2000	5.2	No data available	No data available
Naphthalene 91-20-3	1110	1120	0.4	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. IF exposed or concerned: Get medical advice/attention. Immediate medical attention is required.

Inhalation

Remove to fresh air. Aspiration into lungs can produce severe lung damage. If breathing has stopped, give artificial respiration. Get medical attention immediately. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. If breathing is difficult, (trained personnel should) give oxygen. Get immediate medical attention. Delayed

pulmonary edema may occur. Immediate medical attention is required. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

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. ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Get immediate medical attention.

Self-protection of the first aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Do not breathe vapour or mist. See section 8 for more information.

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

Difficulty in breathing. Coughing and/ or wheezing. Dizziness. May cause redness and tearing of the eyes. Burning sensation.

Effects of Exposure

None.

4.3. Indication of any immediate medical attention and special treatment needed**Note to doctors**

Because of the danger of aspiration, emesis or gastric lavage should not be used unless the risk is justified by the presence of additional toxic substances.

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. Do not breathe vapour or mist. Keep people away from and upwind of spill/leak.
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.
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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). Clean contaminated surface thoroughly. After cleaning, flush away traces with water.
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.
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SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Advice on safe handling	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. Do not breathe vapour or mist. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation.
General hygiene considerations	Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing. Do not breathe vapour or mist. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up. Store away from other materials.
Storage class (TRGS 510)	LGK 6.1C.

7.3. Specific end use(s)

Specific use(s).	No information available.
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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/m ³ . Short-term exposure limit
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(15-minute): 10 mg/m³.

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
Base oil 68476-34-6	-	-	TWA: 100 mg/m ³ Sk*	-	-
Manganese, Tricarbonyl methylcyclopentadienyl 12108-13-3	-	TWA: 0.2 mg/m ³ STEL 0.4 mg/m ³ Sk*	TWA: 0.2 mg/m ³ Sk*	TWA: 0.1 mg/m ³	-
Naphthalene 91-20-3	TWA: 10 ppm TWA: 50 mg/m ³	TWA: 10 ppm TWA: 50 mg/m ³ Sk*	TWA: 10 ppm TWA: 53 mg/m ³ STEL: 15 ppm STEL: 80 mg/m ³ Sk*	TWA: 50.0 mg/m ³ STEL: 75.0 mg/m ³	TWA: 10 ppm TWA: 50 mg/m ³
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Manganese, Tricarbonyl methylcyclopentadienyl 12108-13-3	-	TWA: 1 mg/m ³ Ceiling: 2 mg/m ³	TWA: 0.1 ppm TWA: 0.2 mg/m ³ STEL: 0.2 ppm STEL: 0.4 mg/m ³ Sk*	-	TWA: 0.2 mg/m ³ STEL: 0.6 mg/m ³ Sk*
Base oil 64742-47-8	-	-	-	TWA: 5 mg/m ³ STEL: 500 mg/m ³	-
Naphthalene 91-20-3	TWA: 10 ppm TWA: 50 mg/m ³	TWA: 50 mg/m ³ Ceiling: 100 mg/m ³	TWA: 10 ppm TWA: 50 mg/m ³ STEL: 20 ppm STEL: 100 mg/m ³	TWA: 10 ppm TWA: 50 mg/m ³	TWA: 1 ppm TWA: 5 mg/m ³ STEL: 2 ppm STEL: 10 mg/m ³
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Manganese, Tricarbonyl methylcyclopentadienyl 12108-13-3	TWA: 0.2 mg/m ³ Sk*	-	-	TWA: 0.2 mg/m ³ STEL: 0.6 mg/m ³ Sk*	-
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	-	-
Naphthalene 91-20-3	TWA: 10 ppm TWA: 50 mg/m ³	TWA: 0.4 ppm TWA: 2 mg/m ³ Sk*	Sk*	TWA: 10 ppm TWA: 50 mg/m ³	TWA: 50 mg/m ³ TWA: 10 ppm
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Base oil 68476-34-6	-	-	TWA: 100 mg/m ³ Sk*	-	-
Manganese, Tricarbonyl methylcyclopentadienyl 12108-13-3	TWA: 0.2 mg/m ³ STEL: 0.6 mg/m ³ Sk*	-	TWA: 0.2 mg/m ³ Sk*	TWA: 0.1 mg/m ³	-
Naphthalene 91-20-3	TWA: 10 ppm TWA: 50 mg/m ³ STEL: 30 ppm STEL: 150 mg/m ³	-	TWA: 10 ppm TWA: 52 mg/m ³ Sk*	TWA: 10 ppm TWA: 50 mg/m ³	TWA: 10 ppm TWA: 50 mg/m ³
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
Manganese, Tricarbonyl methylcyclopentadienyl 12108-13-3	-	-	-	TWA: 0.1 ppm TWA: 0.2 mg/m ³ STEL: 0.3 ppm STEL: 0.6 mg/m ³ Sk*	-
Naphthalene 91-20-3	TWA: 10 ppm TWA: 50 mg/m ³	TWA: 10 ppm TWA: 50 mg/m ³	TWA: 10 ppm TWA: 50 mg/m ³ STEL: 16 ppm STEL: 80 mg/m ³	TWA: 10 ppm TWA: 50 mg/m ³ STEL: 20 ppm STEL: 75 mg/m ³	TWA: 20 mg/m ³ STEL: 50 mg/m ³ Sk*
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Base oil 68476-34-6	TWA: 100 mg/m ³ Sk*	-	-	-	-
Manganese, Tricarbonyl	TWA: 0.2 mg/m ³	TWA: 0.2 mg/m ³	-	-	TWA: 0.2 mg/m ³

methylcyclopentadienyl 12108-13-3	Sk*	TWA: 0.05 mg/m ³			Sk*
Naphthalene 91-20-3	TWA: 10 ppm TWA: 50 mg/m ³ STEL: 15 ppm Sk*	TWA: 10 ppm TWA: 50 mg/m ³	TWA: 10 ppm TWA: 50 mg/m ³ Sk* Ceiling: 80 mg/m ³	TWA: 10 ppm TWA: 50 mg/m ³ STEL: 10 ppm STEL: 50 mg/m ³ Sk*	TWA: 10 ppm TWA: 53 mg/m ³ STEL: 15 ppm STEL: 80 mg/m ³ Sk*
Chemical name	Sweden		Switzerland		United Kingdom
Manganese, Tricarbonyl methylcyclopentadienyl 12108-13-3	-		TWA: 0.1 ppm TWA: 0.2 mg/m ³ Sk*		-
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		-
Naphthalene 91-20-3	NGV: 10 ppm NGV: 50 mg/m ³ Vägledande KGV: 15 ppm Vägledande KGV: 80 mg/m ³		TWA: 10 ppm TWA: 50 mg/m ³ Sk*		-

Biological occupational exposure limits

Chemical name	European Union	Austria	Bulgaria	Croatia	Czech Republic
Manganese, Tricarbonyl methylcyclopentadienyl 12108-13-3	-	Check 20 µg/L (blood - whole blood not provided) (-)	-	-	-
Chemical name	Denmark	Finland	France	Germany DFG	Germany TRGS
Naphthalene 91-20-3	-	-	-	35 µg/L - BAR (for long-term exposures: at the end of the shift after several shifts) urine 4000 µg/L - (end of exposure or end of shift) - urine 13500 µg/L - (end of exposure or end of shift) - urine 23300 µg/L - (end of exposure or end of shift) - urine 34200 µg/L - (end of exposure or end of shift) - urine 30 µg/L - (end of exposure or end of shift) - urine 60 µg/L - (end of exposure or end of shift) - urine 175 µg/L - (end of exposure or end of shift) - urine 280 µg/L - (end of exposure or end of shift) - urine 390 µg/L - (end of exposure or end of shift) - urine	-

				220 µg/L - (end of exposure or end of shift) - urine 500 µg/L - (end of exposure or end of shift) - urine 1500 µg/L - (end of exposure or end of shift) - urine 2300 µg/L - (end of exposure or end of shift) - urine 3300 µg/L - (end of exposure or end of shift) - urine	
Chemical name	Hungary	Ireland	Italy MDLPS	Italy AIDII	
Naphthalene 91-20-3	-	-	-	- () - end of shift	

Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
Base oil 68476-34-6	-	2.91 mg/kg bw/day [4] [6]	68.34 mg/m ³ [4] [6] 4288 mg/m ³ [4] [7]
Manganese, Tricarbonyl methylcyclopentadienyl 12108-13-3	-	0.11 mg/kg bw/day [4] [6]	0.6 mg/m ³ [4] [6]
2-Ethylhexan-1-ol 104-76-7	-	23 mg/kg bw/day [4] [6]	12.8 mg/m ³ [4] [6] 53.2 mg/m ³ [5] [6] 53.2 mg/m ³ [5] [7]
Naphthalene 91-20-3	-	3.57 mg/kg bw/day [4] [6]	25 mg/m ³ [4] [6] 25 mg/m ³ [5] [6]
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]
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]

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 68476-34-6	1.25 mg/kg bw/day [4] [6]	-	20.22 mg/m ³ [4] [6] 2572.8 mg/m ³ [4] [7]
Manganese, Tricarbonyl methylcyclopentadienyl 12108-13-3	-	-	0.11 mg/m ³ [4] [6]
Base oil 64742-47-8	18.75 mg/kg bw/day [4] [6]	-	-
2-Ethylhexan-1-ol 104-76-7	1.1 mg/kg bw/day [4] [6]	-	2.3 mg/m ³ [4] [6] 26.6 mg/m ³ [5] [6] 26.6 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]

Chemical name	Oral	Dermal	Inhalation
			29.4 mg/m ³ [5] [7]
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]

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
Manganese, Tricarbonyl methylcyclopentadienyl 12108-13-3	0.21 µg/L	2.1 µg/L	0.021 µg/L	-	-
Base oil 64742-94-5	0.001 mg/L	-	0.001 mg/L	-	-
2-Ethylhexan-1-ol 104-76-7	0.017 mg/L	0.17 mg/L	0.0017 mg/L	-	-
Naphthalene 91-20-3	2.4 µg/L	20 µg/L	2.4 µg/L	-	-
Benzene, 1,2,4-trimethyl- 95-63-6	0.12 mg/L	0.12 mg/L	0.12 mg/L	-	-
Benzene, 1,3,5-trimethyl- 108-67-8	0.101 mg/L	0.101 mg/L	0.101 mg/L	-	-

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
Manganese, Tricarbonyl methylcyclopentadienyl 12108-13-3	-	-	-	16 µg/kg soil dw	-
2-Ethylhexan-1-ol 104-76-7	0.284 mg/kg sediment dw	0.0284 mg/kg sediment dw	10 mg/L	0.047 mg/kg soil dw	55 mg/kg food
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	-
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	-
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	-

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	Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing. Do not breathe vapour or mist. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended.
Environmental exposure controls	Local authorities should be advised if significant spillages cannot be contained. Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance		
Physical state	Liquid	
Colour	Clear / Red	
Odour	Petroleum	
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	> 61 °C	CC (closed cup)
Autoignition temperature		No data available
Decomposition temperature		No data available
pH		No data available
pH (as aqueous solution)		No data available
Kinematic viscosity		No data available
Dynamic viscosity		No data available
Water solubility	Insoluble in water	No data available
Solubility(ies)		No data available
Partition coefficient		No data available
Vapour pressure		No data available
Relative density	0.817 - 0.894	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

9.2.1. Information with regards to physical hazard classes
Not applicable

9.2.2. Other safety characteristics
No information available

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 Excessive heat.

10.5. Incompatible materials

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

10.6. Hazardous decomposition products

Hazardous decomposition products Ethers. Miscellaneous decomposition products.

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. Aspiration into lungs can produce severe lung damage. May cause pulmonary edema. Pulmonary edema can be fatal. May cause irritation of respiratory tract. Toxic by inhalation. (based on components).
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye irritation. May cause redness, itching, and pain. (based on components).
Skin contact	Repeated exposure may cause skin dryness or cracking. 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. Potential for aspiration if swallowed. May cause lung damage if swallowed. Aspiration may cause pulmonary edema and pneumonitis. May be fatal if swallowed and enters airways. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. (based on components).

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Difficulty in breathing. Coughing and/ or wheezing. Dizziness. Redness. May cause redness and tearing of the eyes.

Acute toxicity Toxic by inhalation. Harmful if swallowed.

Numerical measures of toxicity

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

ATEmix (dermal) 14,000.00 mg/kg

ATEmix (inhalation-vapour) 7.60 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Base oil 68476-34-6	-	> 2000 mg/kg (Rabbit)	= 3.6 mg/L (Rat) 4 h = 5.4 mg/L (Rat) 4 h
Manganese, Tricarbonyl methylcyclopentadienyl 12108-13-3	= 58 mg/kg (Rat)	= 140 mg/kg (Rabbit)	= 0.076 mg/L (Rat) 4 h
Base oil 64742-94-5	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 590 mg/m ³ (Rat) 4 h
Base oil 64742-47-8	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.2 mg/L (Rat) 4 h
Naphthalene 91-20-3	= 1110 mg/kg (Rat)	= 1120 mg/kg (Rabbit)	> 0.4 mg/L (Rat) 4 h

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.
Carcinogenicity	Contains a known or suspected carcinogen. Classification based on data available for ingredients. Suspected of causing cancer.

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

Chemical name	European Union
Base oil	Carc. 2
Naphthalene	Carc. 2

Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT - single exposure	May cause respiratory irritation.
STOT - repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	May be fatal if swallowed and enters airways.

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 68476-34-6	-	LC50: =35mg/L (96h, Pimephales promelas)	-	-
Manganese, Tricarbonyl methylcyclopentadienyl 12108-13-3	-	LC50: =0.21mg/L (96h, Cyprinus carpio)	-	-
Base oil 64742-94-5	-	LC50: =19mg/L (96h, Pimephales promelas) LC50: =2.34mg/L (96h, Oncorhynchus mykiss) LC50: =1740mg/L (96h, Lepomis macrochirus) LC50: =45mg/L (96h, Pimephales promelas) LC50: =41mg/L (96h, Pimephales promelas)	-	EC50: =0.95mg/L (48h, Daphnia magna)
Base oil 64742-47-8	-	LC50: =45mg/L (96h, Pimephales promelas) LC50: =2.2mg/L (96h, Lepomis macrochirus) LC50: =2.4mg/L (96h, Oncorhynchus mykiss)	-	-
Naphthalene 91-20-3	-	LC50: 0.91 - 2.82mg/L (96h, Oncorhynchus mykiss)	-	EC50: 1.09 - 3.4mg/L (48h, Daphnia magna)

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation

Component Information

Chemical name	Partition coefficient
Manganese, Tricarbonyl methylcyclopentadienyl	3.4
Base oil	6.5
Naphthalene	3.4

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 68476-34-6	The substance is not PBT / vPvB
Manganese, Tricarbonyl methylcyclopentadienyl 12108-13-3	The substance is not PBT / vPvB
Base oil 64742-94-5	The substance is not PBT / vPvB
Base oil 64742-47-8	The substance is not PBT / vPvB
Naphthalene 91-20-3	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. (Base oil, Manganese, Tricarbonyl methylcyclopentadienyl)

14.3 Transport hazard class(es) 9

14.4 Packing group III

Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Base oil, Manganese, Tricarbonyl methylcyclopentadienyl), 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. (Base oil, Manganese, Tricarbonyl methylcyclopentadienyl)

14.3 Transport hazard class(es) 9

14.4 Packing group III

Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Base oil, Manganese, Tricarbonyl methylcyclopentadienyl), 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. (Base oil, Manganese, Tricarbonyl methylcyclopentadienyl)

14.3 Transport hazard class(es) 9

14.4 Packing group III

Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Base oil, Manganese, Tricarbonyl methylcyclopentadienyl), 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. (Base oil, Manganese, Tricarbonyl methylcyclopentadienyl)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Base oil, Manganese, Tricarbonyl methylcyclopentadienyl), 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. (Base oil, Manganese, Tricarbonyl methylcyclopentadienyl)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
Description	UN3082, Environmentally hazardous substances, liquid, n.o.s. (Base oil, Manganese, Tricarbonyl methylcyclopentadienyl), 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**

Chemical name	French RG number
Base oil 64742-94-5	RG 84
Base oil 64742-47-8	RG 84

Netherlands**Carcinogenic, mutagenic and reproductive toxic effects**

Chemical name	Netherlands - List of Carcinogens	Netherlands - List of Mutagens	Netherlands - List of Reproductive Toxins
Manganese, Tricarbonyl methylcyclopentadienyl	-	-	Fertility Category 2 Development Category 2

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 - 68476-34-6	Use restricted. See entry 75.	-
Naphthalene - 91-20-3	Use restricted. See entry 75.	-

Persistent Organic Pollutants

Not applicable

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

H2 - ACUTE TOXIC

E2 - Hazardous to the Aquatic Environment in Category Chronic 2

Chemical name	Lower-tier requirements (tons)	Upper-tier requirements (tons)
Base oil - 64742-94-5	-	25000

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

Not applicable

Chemical name	EU - Water Framework Directive (2000/60/EC)
Naphthalene - 91-20-3	Priority substance

Chemical name	EU - Environmental Quality Standards (2008/105/EC)
Naphthalene - 91-20-3	Priority substance

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**

H301 - Toxic if swallowed

H310 - Fatal in contact with skin

H330 - Fatal if inhaled

H351 - Suspected of causing cancer

H400 - Very toxic to aquatic life

H410 - Very 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)

Ceiling Maximum limit value

SCBA Self-contained breathing apparatus

STEL

Sk*

STEL (Short Term Exposure Limit)

Skin designation

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	On basis of test data
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method

Acute inhalation toxicity - dust/mist	On basis of test data
Skin corrosion/irritation	On basis of test data
Serious eye damage/eye irritation	On basis of test data
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	On basis of test data
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	On basis of test data
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