



## SAFETY DATA SHEET

### DOMINATOR® Octane Boost

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200 and WHMIS 2015, in compliance with the Hazardous Product Act (HPA, as amended) and the requirements of the Hazardous Product Regulations (HPR).

#### 1. Identification

##### Product identifier

**Product name** DOMINATOR® Octane Boost

**Product number** AOB, COB

##### Recommended use of the chemical and restrictions on use

**Application** Fuel additive.

**Uses advised against** Avoid the formation of mists.

##### Details of the supplier of the safety data sheet

**Supplier** AMSOIL INC.  
Bordner, Ladner, Gervais  
Scotia Plaza, 40 King St W  
Toronto, ON, Canada M5H 3Y4  
T: +1 416-367-6547

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

##### Emergency telephone number

**Emergency telephone** CHEMTREC: Within USA and Canada: 1-800-424-9300  
Outside the USA and Canada: +1 703-741-5970  
(collect calls accepted) 24/7

#### 2. Hazard(s) identification

##### Classification of the substance or mixture

**OSHA/WHMIS Regulatory Status** This Product is Hazardous under the OSHA Hazard Communication Standard and according to the hazard criteria of the Hazardous Product Regulations.

**Physical hazards** Flam. Liq. 4 - H227

**Health hazards** Acute Tox. 4 - H302 Acute Tox. 2 - H330 Skin Irrit. 2 - H315 Carc. 2 - H351 STOT RE 2 - H373 Asp. Tox. 1 - H304

**Environmental hazards** Aquatic Acute 2 - H401 Aquatic Chronic 2 - H411

##### Label elements

##### Pictogram



**Signal word**

**Danger**

**DOMINATOR® Octane Boost****Hazard statements**

H227 Combustible liquid.  
 H302 Harmful if swallowed.  
 H304 May be fatal if swallowed and enters airways.  
 H315 Causes skin irritation.  
 H330 Fatal if inhaled.  
 H351 Suspected of causing cancer.  
 H373 May cause damage to organs through prolonged or repeated exposure.  
 H411 Toxic to aquatic life with long lasting effects.

**Precautionary statements**

P102 Keep out of reach of children.  
 P201 Obtain special instructions before use.  
 P202 Do not handle until all safety precautions have been read and understood.  
 P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.  
 P260 Do not breathe vapor/ spray.  
 P264 Wash contaminated skin thoroughly after handling.  
 P270 Do not eat, drink or smoke when using this product.  
 P271 Use only outdoors or in a well-ventilated area.  
 P280 Wear protective gloves, eye and face protection.  
 P284 [In case of inadequate ventilation] wear respiratory protection.  
 P301+P310 If swallowed: Immediately call a poison center/ doctor.  
 P302+P352 If on skin: Wash with plenty of water.  
 P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.  
 P308+P313 If exposed or concerned: Get medical advice/ attention.  
 P330 Rinse mouth.  
 P331 Do NOT induce vomiting.  
 P332+P313 If skin irritation occurs: Get medical advice/ attention.  
 P362+P364 Take off contaminated clothing and wash it before reuse.  
 P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.  
 P391 Collect spillage.  
 P403+P235 Store in a well-ventilated place. Keep cool.  
 P405 Store locked up.  
 P501 Dispose of contents/ container in accordance with national regulations.

**Contains**

Hydrogenated base oil, Methylcyclopentadienyl manganese tricarbonyl

**Other hazards**

This product does not contain any substances classified as PBT or vPvB.

**3. Composition/information on ingredients****Mixtures**

<b>Hydrogenated base oil</b>	<b>94.0 - 96.0%</b>
CAS number: 68476-34-6	
<b>Classification</b>	
Flam. Liq. 4 - H227	
Acute Tox. 4 - H332	
Skin Irrit. 2 - H315	
Carc. 2 - H351	
STOT RE 2 - H373	
Asp. Tox. 1 - H304	
Aquatic Chronic 2 - H411	

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<b>Methylcyclopentadienyl manganese tricarbonyl</b>	<b>2.0 - 4.0%</b>
CAS number: 12108-13-3	
M factor (Acute) = 1	M factor (Chronic) = 1
<b>Classification</b> Acute Tox. 3 - H301 Acute Tox. 2 - H310 Acute Tox. 1 - H330 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410	
<b>Hydrogenated base oil</b>	<b>1.0 - 2.5%</b>
CAS number: 64742-94-5	
<b>Classification</b> Skin Irrit. 2 - H315 STOT SE 3 - H336 Asp. Tox. 1 - H304 Aquatic Chronic 2 - H411	
<b>Naphthalene</b>	<b>0.07 - 0.7%</b>
CAS number: 91-20-3	
M factor (Acute) = 1	M factor (Chronic) = 1
<b>Classification</b> Acute Tox. 4 - H302 Carc. 2 - H351 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410	
<b>Tricarbonyl(η-cyclopentadienyl)manganese</b>	<b>0.01 - 0.04%</b>
CAS number: 12079-65-1	
<b>Classification</b> Acute Tox. 2 - H300 Acute Tox. 1 - H330 Skin Irrit. 2 - H315 STOT SE 1 - H370 STOT RE 2 - H373	

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<b>1,2,4-Trimethylbenzene</b>	<b>0.03 - 0.2%</b>
CAS number: 95-63-6	
<b>Classification</b>	
Flam. Liq. 3 - H226	
Acute Tox. 4 - H332	
Skin Irrit. 2 - H315	
Eye Irrit. 2A - H319	
STOT SE 3 - H335	
Aquatic Chronic 2 - H411	
<b>Mesitylene</b>	<b>0.005 - 0.015%</b>
CAS number: 108-67-8	
<b>Classification</b>	
Flam. Liq. 3 - H226	
Skin Irrit. 2 - H315	
Eye Irrit. 2A - H319	
STOT SE 3 - H335	
Aquatic Chronic 2 - H411	

The full text for all hazard statements is displayed in Section 16.

**Composition comments** The exact percentage is withheld as a trade secret in accordance with 29 CFR 1910.1200.

#### 4. First-aid measures

##### Description of first aid measures

<b>General information</b>	Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.
<b>Inhalation</b>	Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.
<b>Ingestion</b>	Rinse mouth thoroughly with water. Remove any dentures. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.
<b>Skin Contact</b>	Rinse with water.
<b>Eye contact</b>	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.
<b>Protection of first aiders</b>	First aid personnel should wear appropriate protective equipment during any rescue. If it is suspected that volatile contaminants are still present around the affected person, first aid personnel should wear an appropriate respirator or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

**DOMINATOR® Octane Boost****Most important symptoms and effects, both acute and delayed**

<b>General information</b>	See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
<b>Inhalation</b>	A single exposure may cause the following adverse effects: Difficulty in breathing. Unconsciousness, possibly death. Prolonged or repeated exposure may cause the following adverse effects: Suspected of causing cancer.
<b>Ingestion</b>	May cause discomfort if swallowed. Stomach pain. Nausea, vomiting. Aspiration hazard if swallowed. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis. Prolonged or repeated exposure may cause the following adverse effects: Suspected of causing cancer.
<b>Skin contact</b>	Redness. Irritating to skin. Prolonged or repeated exposure may cause the following adverse effects: Suspected of causing cancer.
<b>Eye contact</b>	May cause temporary eye irritation.

**Indication of immediate medical attention and special treatment needed**

<b>Notes for the doctor</b>	Treat symptomatically. Keep affected person under observation.
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**5. Fire-fighting measures****Extinguishing media**

**Suitable extinguishing media** The product is combustible. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

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

**Special hazards arising from the substance or mixture**

**Specific hazards** Containers can burst violently or explode when heated, due to excessive pressure build-up. Vapors may be ignited by a spark, a hot surface or an ember. Vapors may form explosive mixtures with air. Fire-water run-off in sewers may create fire or explosion hazard. This product is toxic.

**Hazardous combustion products** Thermal decomposition or combustion products may include the following substances: Very toxic gases or vapors. Hydrocarbons. Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Oxides of nitrogen. Metal oxide(s).

**Advice for firefighters**

**Protective actions during firefighting** Avoid breathing fire gases or vapors. Evacuate area. Keep upwind to avoid inhalation of gases, vapors, fumes and smoke. Ventilate closed spaces before entering them. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapors and protect men stopping the leak. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

**Special protective equipment for firefighters** Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves, that provides a basic level of protection during chemical incidents is defined by the Canada Occupational Health and Safety Regulations, by provincial guidelines on occupational health and safety or by NFPA standards if applicable.

**6. Accidental release measures****Personal precautions, protective equipment and emergency procedures**

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### Personal precautions

No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Do not touch or walk into spilled material. Evacuate area. Provide adequate ventilation. No smoking, sparks, flames or other sources of ignition near spillage. Avoid inhalation of vapors and spray/mists. Use suitable respiratory protection if ventilation is inadequate.

### Environmental precautions

#### Environmental precautions

Toxic to aquatic life with long lasting effects. Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

### Methods and material for containment and cleaning up

#### Methods for cleaning up

Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Eliminate all ignition sources if safe to do so. No smoking, sparks, flames or other sources of ignition near spillage. Do not allow material to enter confined spaces, due to the risk of explosion. Provide adequate ventilation. Absorb small quantities with paper towels and evaporate in a safe place. Once evaporation is complete, place paper in a suitable waste disposal container and seal securely. Large Spillages: Absorb the spillage with an inert, dry material and place it in a suitable waste disposal container. The contaminated absorbent may pose the same hazard as the spilled material. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dangerous for the environment. Do not empty into drains. For waste disposal, see Section 13.

#### Reference to other sections

For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

## 7. Handling and storage

### Precautions for safe handling

#### Usage precautions

Keep out of the reach of children. Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimize spills. Keep container tightly sealed when not in use. Avoid the formation of mists. The product is combustible. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. In use may form flammable/explosive vapour-air mixture. Vapors may accumulate on the floor and in low-lying areas. Use explosion-proof electrical, ventilating and lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharges. This product is toxic. Immediate first aid is imperative. Suspected of causing cancer. Avoid discharge to the aquatic environment. Avoid contact with used product. Do not reuse empty containers.

#### Advice on general occupational hygiene

Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

### Conditions for safe storage, including any incompatibilities

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<b>Storage precautions</b>	Store away from incompatible materials (see Section 10). Store locked up. Eliminate all sources of ignition. Take precautionary measures against static discharges. Ground container and transfer equipment to eliminate sparks from static electricity. Keep away from oxidizing materials, heat and flames. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Protect containers from damage.
<b>Storage class</b>	Chemical storage.
<b>Specific end uses(s)</b>	
<b>Specific end use(s)</b>	The identified uses for this product are detailed in Section 1.

**8. Exposure Controls/personal protection****Control parameters****Occupational exposure limits****Hydrogenated base oil**

Long-term exposure limit (8-hour TWA): ACGIH 100 mg/m<sup>3</sup> inhalable fraction and vapor as total hydrocarbons

A3, Sk

**Methylcyclopentadienyl manganese tricarbonyl**

Long-term exposure limit (8-hour TWA): ACGIH 0.2 mg/m<sup>3</sup> as Mn

Sk

**Naphthalene**

Long-term exposure limit (8-hour TWA): OSHA 10 ppm 50 mg/m<sup>3</sup>

Long-term exposure limit (8-hour TWA): ACGIH 10 ppm 52 mg/m<sup>3</sup>

A3, DSens, Sk

**Tricarbonyl(η-cyclopentadienyl)manganese**

Long-term exposure limit (8-hour TWA): ACGIH 0.1 mg/m<sup>3</sup> as Mn

Sk

**1,2,4-Trimethylbenzene**

Long-term exposure limit (8-hour TWA): ACGIH 25 ppm 123 mg/m<sup>3</sup>

**Mesitylene**

Long-term exposure limit (8-hour TWA): ACGIH 25 ppm 123 mg/m<sup>3</sup>

ACGIH = American Conference of Governmental Industrial Hygienists.

OSHA = Occupational Safety and Health Administration.

A3 = Confirmed Animal Carcinogen with Unknown Relevance to Humans.

Sk = Danger of cutaneous absorption.

DSens = Dermal sensitizer.

<b>Ingredient comments</b>	The constituents listed are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.
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**Naphthalene (CAS: 91-20-3)**

**Immediate danger to life and health** 250 ppm

**Exposure controls**



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<b>Appropriate engineering controls</b>	Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimize worker exposure. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimize exposure.
<b>Eye/face protection</b>	Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with OSHA 1910.133 and/or the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.6), and any relevant provincial regulation relating to health and safety at work. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.
<b>Hand protection</b>	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. To protect hands from chemicals, gloves should comply with OSHA 1910.138 and/or the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.9), and be demonstrated to be impervious to the chemical and resist degradation. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended. It is recommended that gloves are made of the following material: Neoprene. Nitrile rubber. Polyvinyl alcohol (PVA). Polyvinyl chloride (PVC).
<b>Other skin and body protection</b>	Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.
<b>Hygiene measures</b>	Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Warn cleaning personnel of any hazardous properties of the product.
<b>Respiratory protection</b>	If ventilation is inadequate, suitable respiratory protection must be worn. Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly. Organic vapor filter. Full face mask respirators with replaceable filter cartridges should comply with OSHA 1910.134 and/or the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.7), and any relevant provincial regulation relating to health and safety at work. Gas and combination filter cartridges should comply with OSHA 1910.134 and/or the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.7), and any relevant provincial regulation relating to health and safety at work. Half mask and quarter mask respirators with replaceable filter cartridges should comply with OSHA 1910.134 and/or the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.7), and any relevant provincial regulation relating to health and safety at work.
<b>Environmental exposure controls</b>	Keep container tightly sealed when not in use.

**9. Physical and Chemical Properties****Information on basic physical and chemical properties**

<b>Appearance</b>	Liquid.
<b>Color</b>	Red.
<b>Odor</b>	Petroleum.



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<b>Odor threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point</b>	Not available.
<b>Initial boiling point and range</b>	Not available.
<b>Flash point</b>	> 60.6°C Pensky-Martens closed cup. [ASTM D 93]
<b>Evaporation rate</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	Not available.
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Relative density</b>	0.817 - 0.903 @ 21.1°C/70°F
<b>Solubility(ies)</b>	Not known.
<b>Partition coefficient</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition Temperature</b>	Not available.
<b>Viscosity</b>	2.36 cSt @ 40°C [ASTM D 445]
<b>Explosive properties</b>	Not considered to be explosive.
<b>Oxidizing properties</b>	Does not meet the criteria for classification as oxidizing.
<b>Other information</b>	No information required.

**10. Stability and reactivity**

<b>Reactivity</b>	See the other subsections of this section for further details.
<b>Stability</b>	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
<b>Possibility of hazardous reactions</b>	The following materials may react strongly with the product: Oxidizing agents.
<b>Conditions to avoid</b>	Avoid heat, flames and other sources of ignition. Containers can burst violently or explode when heated, due to excessive pressure build-up. Static electricity and formation of sparks must be prevented. Do not pressurize, cut, weld, drill, grind or otherwise expose containers to heat or sources of ignition.
<b>Materials to avoid</b>	Oxidizing materials. Acids - oxidizing. Inorganic nitrates. Chlorine. Fluorine.
<b>Hazardous decomposition products</b>	Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Toxic gases or vapors. Carbon dioxide (CO <sub>2</sub> ). Carbon monoxide (CO). Nitrous gases (NO <sub>x</sub> ). Metal oxides.

**11. Toxicological information****Information on toxicological effects****Acute toxicity - oral**

**Notes (oral LD<sub>50</sub>)** Acute Tox. 4 - H302 Harmful if swallowed.

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<b>ATE oral (mg/kg)</b>	1,295.0
<b><u>Acute toxicity - dermal</u></b>	
<b>Notes (dermal LD<sub>50</sub>)</b>	Based on available data the classification criteria are not met.
<b>ATE dermal (mg/kg)</b>	3,500.0
<b><u>Acute toxicity - inhalation</u></b>	
<b>Notes (inhalation LC<sub>50</sub>)</b>	Acute Tox. 2 - H330 Fatal if inhaled.
<b>ATE inhalation (vapours mg/l)</b>	1.9
<b>ATE inhalation (dusts/mists mg/l)</b>	4.36
<b><u>Skin corrosion/irritation</u></b>	
<b>Animal data</b>	Irritating.
<b><u>Serious eye damage/irritation</u></b>	
<b>Serious eye damage/irritation</b>	Based on available data the classification criteria are not met.
<b><u>Respiratory sensitization</u></b>	
<b>Respiratory sensitization</b>	Based on available data the classification criteria are not met.
<b><u>Skin sensitization</u></b>	
<b>Skin sensitization</b>	Based on available data the classification criteria are not met.
<b><u>Germ cell mutagenicity</u></b>	
<b>Genotoxicity - in vitro</b>	Based on available data the classification criteria are not met.
<b><u>Carcinogenicity</u></b>	
<b>Carcinogenicity</b>	Suspected of causing cancer.
<b>IARC carcinogenicity</b>	Contains a substance which may be potentially carcinogenic. IARC Group 2B Possibly carcinogenic to humans.
<b><u>Reproductive toxicity</u></b>	
<b>Reproductive toxicity - fertility</b>	Based on available data the classification criteria are not met.
<b>Reproductive toxicity - development</b>	Based on available data the classification criteria are not met.
<b><u>Specific target organ toxicity - single exposure</u></b>	
<b>STOT - single exposure</b>	Not classified as a specific target organ toxicant after a single exposure.
<b><u>Specific target organ toxicity - repeated exposure</u></b>	
<b>STOT - repeated exposure</b>	STOT RE 2 - H373 May cause damage to organs through prolonged or repeated exposure.
<b><u>Aspiration hazard</u></b>	
<b>Aspiration hazard</b>	Asp. Tox. 1 - H304 May be fatal if swallowed and enters airways. Pneumonia may be the result if vomited material containing solvents reaches the lungs.
<b><u>General information</u></b>	
	May cause cancer after repeated exposure. Risk of cancer depends on duration and level of exposure. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
<b>Inhalation</b>	A single exposure may cause the following adverse effects: Difficulty in breathing. Unconsciousness, possibly death.

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<b>Ingestion</b>	May cause discomfort if swallowed. Stomach pain. Nausea, vomiting. Aspiration hazard if swallowed. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.
<b>Skin Contact</b>	Redness. Irritating to skin.
<b>Eye contact</b>	May cause temporary eye irritation.
<b>Route of exposure</b>	Ingestion Inhalation Skin and/or eye contact
<b>Target Organs</b>	No specific target organs known.

**Toxicological information on ingredients.****Hydrogenated base oil****Acute toxicity - oral**

**Notes (oral LD<sub>50</sub>)** LD<sub>50</sub> 17900 mg/kg, Oral, Rat REACH dossier information.

**Acute toxicity - dermal**

**Notes (dermal LD<sub>50</sub>)** LD<sub>50</sub> > 4300 mg/kg, Dermal, Rabbit REACH dossier information.

**Acute toxicity - inhalation**

**Acute toxicity inhalation (LC<sub>50</sub> dust/mist mg/l)** 4.1

**Species** Rat

**Notes (inhalation LC<sub>50</sub>)** 4 hours REACH dossier information.

**ATE inhalation (dusts/mists mg/l)** 4.1

**Skin corrosion/irritation**

**Animal data** Dose: 0.5 ml, 24 hours, Rabbit Erythema/eschar score: Severe erythema (beef redness) to eschar formation preventing grading of erythema (4). Edema score: Moderate oedema - raised approximately 1 mm (3). REACH dossier information. Irritating.

**Serious eye damage/irritation**

**Serious eye damage/irritation** Dose: 0.1 ml, 30 seconds, Rabbit Cornea score: 0 Iris score: 0 Conjunctivae score: 0 REACH dossier information. Not irritating.

**Skin sensitization**

**Skin sensitization** Buehler test - Guinea pig: Not sensitizing. REACH dossier information.

**Germ cell mutagenicity**

**Genotoxicity - in vitro** Gene mutation: Negative. REACH dossier information.

**Genotoxicity - in vivo** Gene mutation: Negative. REACH dossier information.

**Reproductive toxicity**

**Reproductive toxicity - fertility** Two-generation study - NOEL 1000 mg/kg/day, Oral, Rat F1 REACH dossier information.

**Reproductive toxicity - development** Developmental toxicity:, Maternal toxicity: - NOEL: 125 mg/kg/day, Dermal, Rat REACH dossier information.

**Specific target organ toxicity - repeated exposure**

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STOT - repeated exposure NOAEC > 1.71 mg/l, Inhalation, Rat REACH dossier information.

Target organs Thymus Liver bone marrow

Methylcyclopentadienyl manganese tricarbonylAcute toxicity - oral

Acute toxicity oral (LD<sub>50</sub> mg/kg) 51.8

Species Rat

Notes (oral LD<sub>50</sub>) Toxic if swallowed.

ATE oral (mg/kg) 51.8

Acute toxicity - dermal

Acute toxicity dermal (LD<sub>50</sub> mg/kg) 140.0

Species Rabbit

Notes (dermal LD<sub>50</sub>) Toxic in contact with skin.

ATE dermal (mg/kg) 140.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC<sub>50</sub> vapours mg/l) 0.076

Species Rat

Notes (inhalation LC<sub>50</sub>) Fatal if inhaled.

ATE inhalation (vapours mg/l) 0.076

Skin corrosion/irritation

Skin corrosion/irritation Causes skin irritation.

Germ cell mutagenicity

Genotoxicity - in vitro Bacterial reverse mutation test: Negative. Based on available data the classification criteria are not met.

Genotoxicity - in vivo Micronucleus assay: Negative. Based on available data the classification criteria are not met.

## 12. Ecological Information

Toxicity Aquatic Chronic 2 - H411 Toxic to aquatic life with long lasting effects.

Ecological information on ingredients.Hydrogenated base oilAcute aquatic toxicity

Acute toxicity - fish LL<sub>50</sub>, 96 hours: 21 mg/l, Oncorhynchus mykiss (Rainbow trout)

Acute toxicity - aquatic invertebrates EL<sub>50</sub>, 48 hours: 68 mg/l, Daphnia magna

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**Acute toxicity - aquatic plants** EL<sub>50</sub>, 72 hours: 22 mg/l, Pseudokirchneriella subcapitata

**Methylcyclopentadienyl manganese tricarbonyl**

**Toxicity** Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410 Very toxic to aquatic life with long lasting effects.

**Acute aquatic toxicity**

**LE(C)<sub>50</sub>** 0.1 < L(E)C<sub>50</sub> ≤ 1

**M factor (Acute)** 1

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: 0.83 mg/l, Daphnia magna  
NOEC, 48 hours: 0.29 mg/l, Daphnia magna

**Chronic aquatic toxicity**

**NOEC** 0.01 < NOEC ≤ 0.1

**Degradability** Non-rapidly degradable

**M factor (Chronic)** 1

**Persistence and degradability**

**Persistence and degradability** The degradability of the product is not known.

**Ecological information on ingredients.****Hydrogenated base oil**

**Biodegradation** Water - Degradation 57.5%: 28 days  
Not readily biodegradable.

**Methylcyclopentadienyl manganese tricarbonyl**

**Persistence and degradability** The product is biodegradable.

**Biodegradation** Water - Degradation 46%: 28 days

**Bioaccumulative potential**

**Bio-Accumulative Potential** No data available on bioaccumulation.

**Partition coefficient** Not available.

**Ecological information on ingredients.****Methylcyclopentadienyl manganese tricarbonyl**

**Partition coefficient** log Kow: 3.7

**Mobility in soil**

**Mobility** No data available.

**Ecological information on ingredients.****Methylcyclopentadienyl manganese tricarbonyl**

**Mobility** The product is soluble in water.

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### Other adverse effects

Other adverse effects None known.

### 13. Disposal considerations

#### Waste treatment methods

##### General information

The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

##### Disposal methods

Do not empty into drains. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents. Incineration or landfill should only be considered when recycling is not feasible. Vapor from residual product may create a highly flammable or explosive atmosphere inside the container. Containers should be thoroughly emptied before disposal because of the risk of an explosion. Do not cut or weld used containers unless they have been thoroughly cleaned internally.

### 14. Transport information

#### General

For limited quantity packaging/limited load information, consult the relevant modal documentation using the data shown in this section.

#### UN Number

UN No. (TDG)	3082
UN No. (IMDG)	3082
UN No. (ICAO)	3082
UN No. (DOT)	NA1993

#### UN proper shipping name

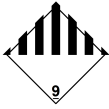
Proper shipping name (TDG)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS Hydrogenated base oil, Methylcyclopentadienyl manganese tricarbonyl)
Proper shipping name (IMDG)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS Hydrogenated base oil, Methylcyclopentadienyl manganese tricarbonyl)
Proper shipping name (ICAO)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS Hydrogenated base oil, Methylcyclopentadienyl manganese tricarbonyl)
Proper shipping name (DOT)	COMBUSTIBLE LIQUID, N.O.S. (CONTAINS Hydrogenated base oil, Methylcyclopentadienyl manganese tricarbonyl)

#### Transport hazard class(es)

TDG class	9
TDG label(s)	9
IMDG Class	9
ICAO class/division	9

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## Transport labels

Packing group

TDG Packing Group	III
IMDG packing group	III
ICAO packing group	III
DOT packing group	III

Environmental hazards

## Environmentally Hazardous Substance

Special precautions for user

Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

EmS F-A, S-F

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

## 15. Regulatory information

**Regulatory References** OSHA Hazard Communication Standard 29 CFR §1910.1200 Hazardous Products Regulation (SOR/2015-17) Transportation of Dangerous Goods Regulations -SOR/2015-100.

US Federal Regulations**SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities**

The following ingredients are listed or exempt:

*Methylcyclopentadienyl manganese tricarbonyl*  
EPCRA 302 TPQ 100 lbs Tier II TPQ 100 lbs

**CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)**

The following ingredients are listed or exempt:

*Naphthalene*  
Final CERCLA RQ: 100(45.4) pounds (Kilograms)

**SARA Extremely Hazardous Substances EPCRA Reportable Quantities**

The following ingredients are listed or exempt:

*Methylcyclopentadienyl manganese tricarbonyl*  
EPCRA RQ: 100 lbs

**SARA 313 Emission Reporting**

The following ingredients are listed or exempt:



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*1,2,4-Trimethylbenzene*

1.0 %

*Methylcyclopentadienyl manganese tricarbonyl*

1.0 %

*Naphthalene*

0.1 %

*Tricarbonyl(η-cyclopentadienyl)manganese*

1.0 %

**CAA Accidental Release Prevention**

None of the ingredients are listed or exempt.

**SARA (311/312) Hazard Categories**

None of the ingredients are listed or exempt.

**OSHA Highly Hazardous Chemicals**

None of the ingredients are listed or exempt.

**US State Regulations****California Proposition 65 Carcinogens and Reproductive Toxins**

The following ingredients are listed or exempt:

*Naphthalene*

Known to the State of California to cause cancer.

**California Air Toxics "Hot Spots" (A-I)**

The following ingredients are listed or exempt:

*1,2,4-Trimethylbenzene*

*Naphthalene*

**California Air Toxics "Hot Spots" (A-II)**

None of the ingredients are listed or exempt.

**California Directors List of Hazardous Substances**

The following ingredients are listed or exempt:

*Methylcyclopentadienyl manganese tricarbonyl*

*Naphthalene*

*Tricarbonyl(η-cyclopentadienyl)manganese*

*Mesitylene*

**Massachusetts "Right To Know" List**

The following ingredients are listed or exempt:

*1,2,4-Trimethylbenzene*

*Methylcyclopentadienyl manganese tricarbonyl*

*2-Ethylhexan-1-ol*

*Naphthalene*

*Tricarbonyl(η-cyclopentadienyl)manganese*

*Mesitylene*

**Rhode Island "Right To Know" List**

The following ingredients are listed or exempt:

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*Methylcyclopentadienyl manganese tricarbonyl*

*Naphthalene*

*Tricarbonyl( $\eta$ -cyclopentadienyl)manganese*

**Minnesota "Right To Know" List**

The following ingredients are listed or exempt:

*1,2,4-Trimethylbenzene*

*Methylcyclopentadienyl manganese tricarbonyl*

*Naphthalene*

*Tricarbonyl( $\eta$ -cyclopentadienyl)manganese*

**New Jersey "Right To Know" List**

The following ingredients are listed or exempt:

*1,2,4-Trimethylbenzene*

*Methylcyclopentadienyl manganese tricarbonyl*

*Naphthalene*

*Tricarbonyl( $\eta$ -cyclopentadienyl)manganese*

**Pennsylvania "Right To Know" List**

The following ingredients are listed or exempt:

*1,2,4-Trimethylbenzene*

*Methylcyclopentadienyl manganese tricarbonyl*

*2-Ethylhexan-1-ol*

*Naphthalene*

*Tricarbonyl( $\eta$ -cyclopentadienyl)manganese*

**Inventories****Canada - DSL/NDSL**

All the ingredients are listed or exempt.

**US - TSCA**

All the ingredients are listed or exempt.

**US - TSCA 12(b) Export Notification**

None of the ingredients are listed or exempt.

**16. Other information**

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<b>Abbreviations and acronyms used in the safety data sheet</b>	C.A.S. = Chemical Abstracts Service; E.C. No = European Commission number; GHS = Globally Harmonised System; OSHA = Occupational Safety and Health Administration; WHMIS = Workplace Hazardous Materials Information System; DOT = Department of Transport; TDG = Transport of Dangerous Goods Regulations; IMDG = International Maritime Dangerous Goods; IATA = International Air Transport Association; SARA = Superfund Amendments and Reauthorization Act; CERCLA = Comprehensive Environmental; EPCRA = Emergency Planning and Community Right-to-Know Act; TSCA = Toxic Substances Control Act; LD/LC/EC = Lethal Dose, Lethal Concentration/Effect Concentration for 50% of population; NOEC = No Overall Effect Concentration; NOEL = No Overall Effect Level; REACH = Registration, Evaluation, Authorisation & Restriction of Chemicals; STOT-RE = Single Target Organ Toxicity - Repeat Exposure; STOT-SE = Specific Target Organ Toxicity - Single Exposure; PBT = Persistent, Bioaccumulative, Toxic; vPvB = Very Persistent, Very Bioaccumulative.
<b>Classification abbreviations and acronyms</b>	Acute Tox. = Acute toxicity Asp. Tox. = Aspiration hazard Carc. = Carcinogenicity Skin Irrit. = Skin irritation STOT RE = Specific target organ toxicity-repeated exposure Aquatic Chronic = Hazardous to the aquatic environment (chronic)
<b>Training advice</b>	Read and follow manufacturer's recommendations. Only trained personnel should use this material.
<b>Revision date</b>	11/2/2017
<b>Supersedes date</b>	8/23/2016
<b>SDS No.</b>	6385
<b>Hazard statements in full</b>	H226 Flammable liquid and vapor. H227 Combustible liquid. H300 Fatal if swallowed. H301 Toxic if swallowed. H302 Harmful if swallowed. H304 May be fatal if swallowed and enters airways. H310 Fatal in contact with skin. H315 Causes skin irritation. H319 Causes serious eye irritation. H330 Fatal if inhaled. H332 Harmful if inhaled. H335 May cause respiratory irritation. H336 May cause drowsiness or dizziness. H351 Suspected of causing cancer. H370 Causes damage to organs (Lungs, Nervous system). H373 May cause damage to organs (Kidneys) through prolonged or repeated exposure. H373 May cause damage to organs (Thymus, Liver, bone marrow) through prolonged or repeated exposure. H373 May cause damage to organs through prolonged or repeated exposure. H400 Very toxic to aquatic life. H401 Toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects. H411 Toxic to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.