

SECTION 1 Identification**1.1. GHS Product identifier**

Product form : Mixture
Product name : Octane Booster
Type of product : Fuel additives
Part Number : 20026

1.2. Other means of identification

No additional information available

1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture : Fuel additives

1.4. Supplier's details

Lucas Oil Products, Inc.
3199 Harrison Way NW
Corydon, IN 47112
USA
T 800-342-2512
sds@lucasoil.com - www.LucasOil.com

1.5. Emergency phone number

Emergency number : For Chemical Emergency Call ChemTel 24hr/day 7days/week
Within USA, Canada, Puerto Rico and US Virgin Islands: 1-800-255-3924
International: 1-813-248-0585
(collect calls accepted)

SECTION 2 Hazard identification**2.1. Classification of the substance or mixture****Classification (GHS CA)**

Flammable liquids, Category 4	H227	Combustible liquid.
Acute toxicity (oral), Category 4	H302	Harmful if swallowed.
Acute toxicity (inhalation:dust,mist), Category 4	H332	Harmful if inhaled.
Carcinogenicity, Category 2	H351	Suspected of causing cancer.
Aspiration hazard, Category 1	H304	May be fatal if swallowed and enters airways.
Hazardous to the aquatic environment, Acute Hazard, Category 2	H401	Toxic to aquatic life.
Hazardous to the aquatic environment, Chronic Hazard, Category 2	H411	Toxic to aquatic life with long lasting effects.

Full text of H-statements: see section 16

2.2. GHS label elements, including precautionary statements**GHS CA labelling**

Hazard pictograms (GHS CA) :



Signal word (GHS CA) : Danger

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Hazard statements (GHS CA)	: H227 - Combustible liquid H302+H332 - Harmful if swallowed or if inhaled H304 - May be fatal if swallowed and enters airways H351 - Suspected of causing cancer. H401 - Toxic to aquatic life H411 - Toxic to aquatic life with long lasting effects
Precautionary statements (GHS CA)	: P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P261 - Avoid breathing dust, fume, gas, mist, vapours, spray. P264 - Wash hands, forearms and face thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P271 - Use only outdoors or in a well-ventilated area. P273 - Avoid release to the environment. P280 - Wear protective gloves, protective clothing, eye protection, face protection, and hearing protection. P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or a doctor. P301+P312 - IF SWALLOWED: Call a POISON CENTER or a doctor if you feel unwell. P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P308+P313 - IF exposed or concerned: Get medical advice or attention. P312 - Call a POISON CENTER or a doctor if you feel unwell. P330 - Rinse mouth. P331 - Do NOT induce vomiting. P370+P378 - In case of fire: Use appropriate media to extinguish. P391 - Collect spillage. P403 - Store in a well-ventilated place. P405 - Store locked up. P501 - Dispose of contents and/or container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

2.3. Other hazards which do not result in classification

No additional information available

SECTION 3 Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
Distillates (petroleum), hydrotreated heavy paraffinic	Distillates (petroleum), hydrotreated heavy paraffinic distillates (petroleum), hydrotreated heavy paraffinic	CAS-No.: 64742-54-7	30 - 60*	Asp. Tox. 1, H304

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Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
Distillates (petroleum), hydrotreated light	Distillates (petroleum), hydrotreated light distillates (petroleum), hydrotreated light / kerosine - unspecified	CAS-No.: 64742-47-8	30 - 60*	Asp. Tox. 1, H304

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Manganese, tricarbonyl[(1,2,3,4,5-η)-1-methyl-2,4-cyclopentadien-1-yl]-	Tricarbonyl(methylcyclopentadienyl)manganese 2-methylcyclopentadienyl manganese tricarbonyl / AK-33X / antiknock-33 / CI-2 / combustion improver -2 / combustion improver C12 / manganese, (methylcyclopentadienyl)tricarbonyl / manganese, tricarbonyl methylcyclopentadienyl / manganese, tricarbonyl(methyl-pi-cyclopentadienyl) / manganese, tricarbonyl[(1,2,3,4,5-eta)-1-methyl-2,4-cyclopentadien-1-yl]- / methylcyclopentadienyl manganese tricarbonyl / methylcyclopentadienyltricarbonylmanganese / methylcyclopentadienyltricarbonylmanganium / methylcymantrene / MMT / pi-methylcyclopentadienylmanganese tricarbonyl / tricarbonyl[(1,2,3,4,5-eta)-1-methyl-2,4-cyclopentadien-1-yl] manganese / tricarbonyl(2-methylcyclopentadienyl)manganese / tricarbonyl(eta(5)-methylcyclopentadienyl)manganese /	CAS-No.: 12108-13-3	1 - 5*	Acute Tox. 3 (Oral), H301 Acute Tox. 2 (Dermal), H310 Acute Tox. 1 (Inhalation), H330 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
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Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
	tricarbonyl(methyl-pi-cyclopentadienyl)manganese / tricarbonylmethylcyclopentadienylmanganese			
Solvent naphtha (petroleum), heavy arom.	Solvent naphtha (petroleum), heavy arom. (polyethyl)benzenes / caromax 19 / caromax 20E / caromax 29 / corexit 8352 / CW naphtha / EFA 180/200 / EFA 240/270 / heavy aromatic naphtha / heavy aromatic solvent naphtha / kemelix H610 / NEFRAS 150/330 / petrinex ASB / re-run tower bottoms. / SOLAREX 90/160 / SOLVAREX 10 / SOLVAREX 9 / SOLVAREX 90/180 / SOLVARO 290 / SOLVARO 300 / SOLVARO AFD / SOLVARO K / solvent naphtha (petroleum), heavy arom. / solvent naphtha (petroleum), heavy aromatic / washed aromatic residues	CAS-No.: 64742-94-5	1 - 5*	Asp. Tox. 1, H304

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Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
Naphthalene	Naphthalene alabastine / alboarbon / camphor tar / camphylene / carbon, disinfecting / coal tar camphor / creosote salts, crude naphthalene / DEZODORATOR / flake naphthalene / goudron camphre / mighty 150 / mighty RD1 / moth balls / moth balls, flakes / moth flakes / naphthalin / naphtha balls, flakes / naphthalene / naphthalene, pure / naphthaline / naphthene / none / tar camphor / tar white / white tar	CAS-No.: 91-20-3	0.095 - 0.235	Acute Tox. 4 (Oral), H302 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

*Chemical name, CAS number and/or exact concentration have been withheld as CBI

*Contains fixed concentration

SECTION 4 First-aid measures

4.1. Description of necessary first-aid measures

First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.
First-aid measures after skin contact	: Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Rinse mouth. Do not induce vomiting. Call a physician immediately.
First-aid measures general	: Call a physician immediately.
Self protection of the first-aiders	: First aid workers will be equipped with suitable personal protective equipment.

4.2. Most important symptoms/effects, acute and delayed

Symptoms/effects after inhalation	: Harmful if inhaled.
Symptoms/effects after skin contact	: None under normal conditions.
Symptoms/effects after eye contact	: None under normal conditions.
Symptoms/effects after ingestion	: Harmful if swallowed. Risk of lung oedema.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Other medical advice or treatment	: Treat symptomatically.
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SECTION 5 Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard : Combustible liquid.
Explosion hazard : No direct explosion hazard.
Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective actions for fire-fighters

Firefighting instructions : Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material damage.
Environmental precautions : Avoid release to the environment.

6.2. Methods and materials for containment and cleaning up

For containment : Collect spillage. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak without risks if possible.
Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
Other information : Dispose of materials or solid residues at an authorized site.
For further information refer to section 13.

SECTION 7 Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapours/spray.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.
Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep in a cool, well-ventilated place away from heat.
Storage conditions : Store in a well-ventilated place. Keep cool. Store locked up.
Packaging materials : Always store product in container of same material as original container.

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SECTION 8 Exposure controls/personal protection

8.1. Control parameters

Manganese, tricarbonyl[(1,2,3,4,5-η)-1-methyl-2,4-cyclopentadien-1-yl]- (12108-13-3)	
Canada (Alberta) - Occupational Exposure Limits	
Local name	2-Methylcyclopentadienyl manganese tricarbonyl, as Mn
OEL TWA	0.2 mg/m ³
Notations and remarks	Substance may be readily absorbed through intact skin.
Regulatory reference	Alberta Regulation 191/2021
Canada (Quebec) - Occupational Exposure Limits	
Local name	Manganese methyl cyclopentadienyl tricarbonyl (as Mn)
VEMP (OEL TWAEV)	0.2 mg/m ³
Notations and remarks	Pc
Regulatory reference	S-2.1, r. 13 - Regulation respecting occupational health and safety
Canada (British Columbia) - Occupational Exposure Limits	
Local name	2-Methylcyclopentadienyl manganese tricarbonyl, as Mn
OEL TWA	0.2 mg/m ³
Notations and remarks	Skin (the substance that contribute significantly to the overall exposure by the skin route)
Regulatory reference	OHS Guidelines Part 5: Chemical Agents and Biological Agents (WorkSafe BC)
Canada (Manitoba) - Occupational Exposure Limits	
Local name	2-Methylcyclopentadienyl manganese tricarbonyl, as Mn
OEL TWA	0.2 mg/m ³
Notations and remarks	TLV® Basis: CNS impair; Lung, Liver & kidney dam. Notations: Skin
Regulatory reference	ACGIH 2025
Canada (Newfoundland and Labrador) - Occupational Exposure Limits	
Local name	2-Methylcyclopentadienyl manganese tricarbonyl, as Mn
OEL TWA	0.2 mg/m ³
Notations and remarks	TLV® Basis: CNS impair; Lung, Liver & kidney dam. Notations: Skin
Regulatory reference	ACGIH 2025
Canada (Nova Scotia) - Occupational Exposure Limits	
Local name	2-Methylcyclopentadienyl manganese tricarbonyl, as Mn
OEL TWA	0.2 mg/m ³
Notations and remarks	TLV® Basis: CNS impair; Lung, Liver & kidney dam. Notations: Skin
Regulatory reference	ACGIH 2025
Canada (Nunavut) - Occupational Exposure Limits	
Local name	2-Methylcyclopentadienyl manganese tricarbonyl, (as Mn)
OEL TWA	0.2 mg/m ³
OEL STEL	0.6 mg/m ³

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Manganese, tricarbonyl[(1,2,3,4,5-η)-1-methyl-2,4-cyclopentadien-1-yl]- (12108-13-3)	
Notations and remarks	Skin
Regulatory reference	Occupational Health and Safety Regulations, Nu Reg 003-2016 (Amendment R-044-2021)
Canada (Northwest Territories) - Occupational Exposure Limits	
Local name	2-Methylcyclopentadienyl manganese tricarbonyl, (as Mn)
OEL TWA	0.2 mg/m ³
OEL STEL	0.6 mg/m ³
Notations and remarks	Skin
Regulatory reference	Occupation Health and Safety Regulations R-039-2015 (R-090-2024)
Canada (Ontario) - Occupational Exposure Limits	
Local name	2-Methylcyclopentadienyl manganese tricarbonyl, as Mn
OEL TWAEV	0.2 mg/m ³
Notations and remarks	Skin
Regulatory reference	Occupational Health and Safety Act, R.S.O. 1990, c. O.1 - R.R.O. 1990, Reg. 833: Control of exposure to biological or chemical agents
Canada (Prince Edward Island) - Occupational Exposure Limits	
Local name	2-Methylcyclopentadienyl manganese tricarbonyl, as Mn
OEL TWA	0.2 mg/m ³
Notations and remarks	TLV® Basis: CNS impair; Lung, Liver & kidney dam. Notations: Skin
Regulatory reference	ACGIH 2025
Canada (Saskatchewan) - Occupational Exposure Limits	
Local name	2-Methylcyclopentadienyl manganese tricarbonyl, (as Mn)
OEL TWA	0.2 mg/m ³
OEL STEL	0.6 mg/m ³
Notations and remarks	Skin
Regulatory reference	The Occupational Health and Safety Regulations, 2020. Chapter S-15.1 Reg 10
Naphthalene (91-20-3)	
Canada (Alberta) - Occupational Exposure Limits	
Local name	Naphthalene
OEL TWA	52 mg/m ³
	10 ppm
OEL STEL	79 mg/m ³
	15 ppm
Notations and remarks	Substance may be readily absorbed through intact skin.
Regulatory reference	Alberta Regulation 191/2021
Canada (Quebec) - Occupational Exposure Limits	
Local name	Naphthalene
VEMP (OEL TWAEV)	10 ppm

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Naphthalene (91-20-3)	
Notations and remarks	C3, Pc
Regulatory reference	S-2.1, r. 13 - Regulation respecting occupational health and safety
Canada (British Columbia) - Occupational Exposure Limits	
Local name	Naphthalene
OEL TWA	10 ppm
Notations and remarks	Skin (the substance that contribute significantly to the overall exposure by the skin route); IARC group 2B carcinogen
Regulatory reference	OHS Guidelines Part 5: Chemical Agents and Biological Agents (WorkSafe BC)
Canada (Manitoba) - Occupational Exposure Limits	
Local name	Naphthalene
OEL TWA	52 mg/m ³ 10 ppm
Notations and remarks	TLV® Basis: URT irr; Cataracts; Hemolytic anemia. Notations: Skin; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); BEI
Regulatory reference	ACGIH 2025
Canada (New Brunswick) - Occupational Exposure Limits	
Local name	Naphthalene
OEL TWA	10 ppm
Notations and remarks	Hematologic eff; URT & eye irr; Skin; A3
Canada (Newfoundland and Labrador) - Occupational Exposure Limits	
Local name	Naphthalene
OEL TWA	52 mg/m ³ 10 ppm
Notations and remarks	TLV® Basis: URT irr; Cataracts; Hemolytic anemia. Notations: Skin; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); BEI
Regulatory reference	ACGIH 2025
Canada (Nova Scotia) - Occupational Exposure Limits	
Local name	Naphthalene
OEL TWA	52 mg/m ³ 10 ppm
Notations and remarks	TLV® Basis: URT irr; Cataracts; Hemolytic anemia. Notations: Skin; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); BEI
Regulatory reference	ACGIH 2025
Canada (Nunavut) - Occupational Exposure Limits	
Local name	Naphthalene
OEL TWA	10 ppm
OEL STEL	15 ppm
Notations and remarks	Skin

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Naphthalene (91-20-3)	
Regulatory reference	Occupational Health and Safety Regulations, Nu Reg 003-2016 (Amendment R-044-2021)
Canada (Northwest Territories) - Occupational Exposure Limits	
Local name	Naphthalene
OEL TWA	10 ppm
OEL STEL	15 ppm
Notations and remarks	Skin
Regulatory reference	Occupation Health and Safety Regulations R-039-2015 (R-090-2024)
Canada (Ontario) - Occupational Exposure Limits	
Local name	Naphthalene
OEL TWAEV	10 ppm
Notations and remarks	Skin
Regulatory reference	Occupational Health and Safety Act, R.S.O. 1990, c. O.1 - R.R.O. 1990, Reg. 833: Control of exposure to biological or chemical agents
Canada (Prince Edward Island) - Occupational Exposure Limits	
Local name	Naphthalene
OEL TWA	52 mg/m ³ 10 ppm
Notations and remarks	TLV® Basis: URT irr; Cataracts; Hemolytic anemia. Notations: Skin; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); BEI
Regulatory reference	ACGIH 2025
Canada (Saskatchewan) - Occupational Exposure Limits	
Local name	Naphthalene
OEL TWA	10 ppm
OEL STEL	15 ppm
Notations and remarks	Skin
Regulatory reference	The Occupational Health and Safety Regulations, 2020. Chapter S-15.1 Reg 10

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Personal protective equipment:

Wear recommended personal protective equipment.

Hand protection:

Protective gloves

Eye protection:

Safety glasses

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Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection.

Personal protective equipment symbol(s):



SECTION 9 Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state	: Liquid
Appearance	: No data available
Colour	: Black
Odour	: There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure. Mixture contains one or more component(s) which have the following odour: Pleasant odour Mild odour Aromatic odour Solvent-like odour Tar odour Camphor odour
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 170 °F
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: No data available
Relative vapour density at 20°C	: No data available
Relative density	: 0.851
Density	: 7.111 lb/gal
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Viscosity, kinematic	: 8.327 mm ² /s 40 ° C
Explosive limits	: No data available
Particle characteristics	: Particle size : Not Applicable

9.2. Data relevant with regard to physical hazard classes (supplemental)

No additional information available

SECTION 10 Stability and reactivity

Reactivity	: The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reactions known under normal conditions of use.
Conditions to avoid	: Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

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Incompatible materials	: No additional information available
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hardening time:	: No additional information available

SECTION 11 Toxicological information

11.1. Likely routes of exposure

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Inhalation:dust,mist: Harmful if inhaled.

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ATE CA (oral)	1308.524 mg/kg bodyweight
ATE CA (dust,mist)	1.996 mg/l/4h
Distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)	
LD50 dermal rabbit	> 5000 mg/kg Source: IUCLID
Distillates (petroleum), hydrotreated light (64742-47-8)	
LD50 oral rat	> 5000 mg/kg bodyweight Animal: rat, Guideline: EPA OTS 798.1175 (Acute Oral Toxicity), Guideline: OECD Guideline 420 (Acute Oral Toxicity - Fixed Dose Method)
LD50 oral	15000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg bodyweight Animal: rabbit, Guideline: EPA OTS 798.1100 (Acute Dermal Toxicity), Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 Inhalation - Rat	> 5.28 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), 95% CL: 0,42 -
LC50 Inhalation - Rat (Dust/Mist)	> 5.2 mg/l Source: IUCLID
ATE CA (oral)	15000 mg/kg bodyweight
Manganese, tricarbonyl[(1,2,3,4,5-η)-1-methyl-2,4-cyclopentadien-1-yl]- (12108-13-3)	
LD50 oral rat	51.8 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal rabbit	140 mg/kg (Equivalent or similar to OECD 402, Rabbit, Experimental value, Dermal, 14 day(s))
LD50 dermal	212.7 mg/kg
LC50 Inhalation - Rat	0.08 mg/l (Equivalent or similar to OECD 403, 4 h, Rat, Male, Experimental value, Inhalation (vapours), 14 day(s))
LC50 Inhalation - Rat (Vapours)	0.08 mg/l/4h
ATE CA (oral)	51.8 mg/kg bodyweight
ATE CA (Dermal)	140 mg/kg bodyweight
ATE CA (Gases)	10 ppmv/4h
ATE CA (vapours)	0.08 mg/l/4h
ATE CA (dust,mist)	0.08 mg/l/4h
Solvent naphtha (petroleum), heavy arom. (64742-94-5)	
LD50 oral rat	> 5000 mg/kg Source: IUCLID

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Solvent naphtha (petroleum), heavy arom. (64742-94-5)	
LD50 oral	3690 mg/kg
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: other:
LD50 dermal rabbit	> 2000 mg/kg bodyweight Animal: rabbit, Guideline: EPA OTS 798.1100 (Acute Dermal Toxicity)
LD50 dermal	4100 mg/kg
ATE CA (oral)	3690 mg/kg bodyweight
ATE CA (Dermal)	4100 mg/kg bodyweight
Naphthalene (91-20-3)	
LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 oral	533 mg/kg bodyweight (Equivalent or similar to OECD 401, Mouse, Male, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 16000 mg/kg bodyweight (Equivalent or similar to OECD 402, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))
LD50 dermal rabbit	2500 mg/kg Source: ChemIDplus
LD50 dermal	2500 mg/kg
ATE CA (oral)	533 mg/kg bodyweight
ATE CA (Dermal)	2500 mg/kg bodyweight
Skin corrosion/irritation	: Not classified
Naphthalene (91-20-3)	
pH	No data available in the literature
Serious eye damage/irritation	: Not classified
Naphthalene (91-20-3)	
pH	No data available in the literature
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Suspected of causing cancer.
Naphthalene (91-20-3)	
IARC group	2B - Possibly carcinogenic to humans
National Toxicity Program (NTP) Status	Reasonably anticipated to be Human Carcinogen
Reproductive toxicity	: Not classified
Distillates (petroleum), hydrotreated light (64742-47-8)	
NOAEL (animal/male, F0/P)	≥ 3000 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 415 [One-Generation Reproduction Toxicity Study (before 9 October 2017)]
Solvent naphtha (petroleum), heavy arom. (64742-94-5)	
NOAEL (animal/male, F0/P)	35 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test), Guideline: other:
NOAEL (animal/female, F0/P)	125 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test), Guideline: other:

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Naphthalene (91-20-3)	
LOAEL (animal/female, F0/P)	50 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: other:
LOAEL (animal/female, F1)	450 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: other:
NOAEL (animal/female, F0/P)	120 mg/kg bodyweight Animal: rabbit, Animal sex: female, Guideline: other:

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)	
LOAEL (oral, rat, 90 days)	125 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
NOAEC (inhalation, rat, dust/mist/fume, 90 days)	> 0.98 mg/l air Animal: rat, Guideline: OECD Guideline 412 (Subacute Inhalation Toxicity: 28-Day Study)

Distillates (petroleum), hydrotreated light (64742-47-8)	
NOAEL (oral, rat, 90 days)	750 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
NOAEL (dermal, rat/rabbit, 90 days)	≥ 495 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)

Solvent naphtha (petroleum), heavy arom. (64742-94-5)	
LOAEC (inhalation, rat, vapour, 90 days)	4.71 mg/l air Animal: rat, Guideline: EU Method B.29 (Sub-Chronic Inhalation Toxicity:90-Day Study)
NOAEC (inhalation, rat, vapour, 90 days)	2.355 mg/l air Animal: rat, Guideline: EU Method B.29 (Sub-Chronic Inhalation Toxicity:90-Day Study)

Naphthalene (91-20-3)	
LOAEL (oral, rat, 90 days)	400 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
LOAEC (inhalation, rat, vapour, 90 days)	0.011 mg/l air Animal: rat, Guideline: EPA OPP 82-4 (90-Day Inhalation Toxicity), Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)
NOAEL (oral, rat, 90 days)	200 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
NOAEL (dermal, rat/rabbit, 90 days)	1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)

Aspiration hazard : May be fatal if swallowed and enters airways.

Octane Booster	
Viscosity, kinematic	8.327 mm ² /s 40 ° C

Distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)	
Viscosity, kinematic	18 mm ² /s
Hydrocarbon	Yes
Aliphatic, alicyclic or aromatic hydrocarbon	Yes

Manganese, tricarbonyl[(1,2,3,4,5-η)-1-methyl-2,4-cyclopentadien-1-yl]- (12108-13-3)	
Viscosity, kinematic	3.65 mm ² /s

Solvent naphtha (petroleum), heavy arom. (64742-94-5)	
Viscosity, kinematic	2.235 mm ² /s

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Naphthalene (91-20-3)	
Viscosity, kinematic	1 mm ² /s (80 °C, OECD 114: Viscosity of Liquids)
Symptoms/effects after inhalation	: Harmful if inhaled.
Symptoms/effects after skin contact	: None under normal conditions.
Symptoms/effects after eye contact	: None under normal conditions.
Symptoms/effects after ingestion	: Harmful if swallowed. Risk of lung oedema.

SECTION 12 Ecological information

12.1. Toxicity

Ecology - general	: Toxic to aquatic life. Toxic to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute)	: Toxic to aquatic life.
Hazardous to the aquatic environment, long-term (chronic)	: Toxic to aquatic life with long lasting effects.

Distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)	
LC50 - Fish [1]	> 5000 mg/l
EC50 - Crustacea [1]	> 1000 mg/l Source: IUCLID
EC50 96h - Algae [1]	> 1000 mg/l Source: IUCLID

Manganese, tricarbonyl[(1,2,3,4,5-η)-1-methyl-2,4-cyclopentadien-1-yl]- (12108-13-3)	
LC50 - Fish [1]	0.21 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Cyprinus carpio, Semi-static system, Fresh water, Experimental value, Lethal)
EC50 - Crustacea [1]	0.83 mg/l (EPA OTS 797.1300, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
EC50 96h - Algae [1]	> 0.46 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)

Naphthalene (91-20-3)	
LC50 - Fish [1]	0.96 ppm (Oncorhynchus gorbuscha, Flow-through system, Salt water, Experimental value, Lethal)
EC50 - Crustacea [1]	2.16 mg/l (Equivalent or similar to OECD 202, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
EC50 72h - Algae [1]	0.4 mg/l (Skeletonema costatum, Literature study, Growth rate)
NOEC chronic fish	0.12 mg/l
NOEC (chronic)	0.59 mg/l Test organisms (species): Daphnia pulex Duration: '125 d'
NOEC chronic crustacea	3 mg/l

12.2. Persistence and degradability

Octane Booster	
Persistence and degradability	Not rapidly degradable

Distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)	
Persistence and degradability	Not rapidly degradable

Distillates (petroleum), hydrotreated light (64742-47-8)	
Persistence and degradability	Not rapidly degradable

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Manganese, tricarbonyl[(1,2,3,4,5-η)-1-methyl-2,4-cyclopentadien-1-yl]- (12108-13-3)	
Persistence and degradability	Not readily biodegradable in water.
Solvent naphtha (petroleum), heavy arom. (64742-94-5)	
Persistence and degradability	Not readily biodegradable in water.
Naphthalene (91-20-3)	
Persistence and degradability	Readily biodegradable in the soil, Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0 g O ₂ /g substance
Chemical oxygen demand (COD)	0.22 g O ₂ /g substance
ThOD	2.99 g O ₂ /g substance

12.3. Bioaccumulative potential

Distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)	
Partition coefficient n-octanol/water (Log Pow)	3.9 – 6 Source: IUCLID
Distillates (petroleum), hydrotreated light (64742-47-8)	
Partition coefficient n-octanol/water (Log Pow)	3.3 – 6 Source: IUCLID
Manganese, tricarbonyl[(1,2,3,4,5-η)-1-methyl-2,4-cyclopentadien-1-yl]- (12108-13-3)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
BCF - Fish [1]	400 (24 h, Static system, Fresh water, Experimental value)
Partition coefficient n-octanol/water (Log Pow)	3.4 (Practical experience/observation, 26 °C)
Solvent naphtha (petroleum), heavy arom. (64742-94-5)	
Bioaccumulative potential	Bioaccumable.
Partition coefficient n-octanol/water (Log Pow)	2.9 – 6.1
Naphthalene (91-20-3)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
BCF - Fish [1]	23 – 168 (OECD 305: Bioconcentration: Flow-Through Fish Test, 8 week(s), Cyprinus carpio, Flow-through system, Fresh water, Experimental value)
Partition coefficient n-octanol/water (Log Pow)	3.4 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)

12.4. Mobility in soil

Manganese, tricarbonyl[(1,2,3,4,5-η)-1-methyl-2,4-cyclopentadien-1-yl]- (12108-13-3)	
Ecology - soil	Low potential for mobility in soil.
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	3.4 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Experimental value)
Naphthalene (91-20-3)	
Surface tension	No data available in the literature
Ecology - soil	Low potential for adsorption in soil.
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2.864 (log Koc, SRC PCKOCWIN v2.0, Calculated value)

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12.5. Other adverse effects

Ozone : Not classified





Fluorinated greenhouse gases : No

SECTION 13 Disposal considerations

Regional waste regulation : Disposal must be done according to official regulations.
 Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
 Sewage disposal recommendations : Disposal must be done according to official regulations.
 Product/Packaging disposal recommendations : Disposal must be done according to official regulations.
 Additional information : Do not re-use empty containers.
 Ecological waste information : The waste of the product should be considered as hazardous as the product itself, with the likelihood of impacting the environment in the same way. Consider the handling and disposal of the waste as defined by the product itself.

SECTION 14 Transport information

In accordance with TDG / DOT / IMDG / IATA

TDG	DOT	IMDG	IATA
14.1. UN Number			
UN3082	NA1993	UN3082	UN3082
14.2. UN Proper Shipping Name			
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. Methylcyclopentadienyl manganese tricarbonyl	Combustible liquid, n.o.s.(Petroleum Distillates) (Distillates (petroleum), hydrotreated light; Solvent naphtha (petroleum), heavy arom.; Methyl cyclopentadienyl manganese tricarbonyl)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. Methylcyclopentadienyl manganese tricarbonyl	Environmentally hazardous substance, liquid, n.o.s. Methylcyclopentadienyl manganese tricarbonyl
Transport document description			
UN3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. Methylcyclopentadienyl manganese tricarbonyl, 9, III	NA1993 Combustible liquid, n.o.s.(Petroleum Distillates) (Distillates (petroleum), hydrotreated light; Solvent naphtha (petroleum), heavy arom.; Methyl cyclopentadienyl manganese tricarbonyl), Comb Liq, III	UN UN3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. Methylcyclopentadienyl manganese tricarbonyl, 9, III, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS	UN UN3082 Environmentally hazardous substance, liquid, n.o.s. Methylcyclopentadienyl manganese tricarbonyl, 9, III, ENVIRONMENTALLY HAZARDOUS
14.3. Transport hazard class(es)			
9	Combustible liquid	9	9
			
14.4. Packing group, if applicable			
III	III	III	III
14.5. Environmental hazards			
Dangerous for the environment: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes Marine pollutant: Yes	Dangerous for the environment: Yes

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according to the Hazardous Products Regulation (WHMIS 2015)

TDG	DOT	IMDG	IATA
No supplementary information available			

14.6. Special precautions for user

TDG

UN-No. (TDG)	: UN3082
TDG Special Provisions	: 16 - (1) The technical name of at least one of the most dangerous substances that predominantly contributes to the danger or dangers posed by the dangerous goods must be shown, in parentheses, on the shipping document following the shipping name in accordance with clause 3.5(1)(c)(ii)(A). The technical name must also be shown, in parentheses, on a small means of containment or on a tag following the shipping name in accordance with subsections 4.11(2) and (3). (2) Despite subsection (1), the technical name for the following dangerous goods is not required to be shown on a shipping document or on a small means of containment when Canadian law for domestic transport or an international convention for international transport prohibits the disclosure of the technical name: (a) UN1544, ALKALOID SALTS, SOLID, N.O.S. or ALKALOIDS, SOLID, N.O.S; (b) UN1851, MEDICINE, LIQUID, TOXIC, N.O.S; (c) UN3140, ALKALOID SALTS, LIQUID, N.O.S. or ALKALOIDS, LIQUID, N.O.S; (d) UN3248, MEDICINE, LIQUID, FLAMMABLE, TOXIC, N.O.S; or (e) UN3249, MEDICINE, SOLID, TOXIC, N.O.S. (3) Despite subsection (1), the technical name for the following dangerous goods is not required to be shown on a small means of containment: (a) UN2814, INFECTIOUS SUBSTANCE, AFFECTING HUMANS; or (b) UN2900, INFECTIOUS SUBSTANCE, AFFECTING ANIMALS, 99 - (1) Mixtures of solids that are not dangerous goods and liquids or solids that are UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, or UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S, may be offered for transport, handled or transported as UN3077 if there is no visible liquid when the dangerous goods are loaded into a means of containment and during transport. (2) These Regulations, except for Parts 1 and 2, do not apply to the offering for transport, handling or transport of less than 450 kg of UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, or less than 450 L of UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S, on a road vehicle or a railway vehicle. The dangerous goods must be contained in one or more small means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no release of the dangerous goods that could endanger public safety.
Explosive Limit and Limited Quantity Index	: 5 L
Excepted quantities (TDG)	: E1

DOT

Transport regulations (DOT)	: Combustible liquid, n.o.s.(Petroleum Distillates)
UN-No. (DOT)	: NA1993
DOT Special Provisions (49 CFR 172.102)	: 148 - Except for transportation by aircraft, when transported as a limited quantity or a consumer commodity, the maximum net capacity specified in §173.150(b)(2) of this subchapter for inner packagings may be increased to 5 L (1.3 gallons). IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / (1 + a (tr - tf))$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 150

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DOT Packaging Non Bulk (49 CFR 173.xxx)	: 203
DOT Packaging Bulk (49 CFR 173.xxx)	: 241
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 220 L
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

IMDG

Special provisions (IMDG)	: 274, 335, 969, 375
Limited quantities (IMDG)	: 5 L
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: LP01, P001
Special packing provisions (IMDG)	: PP1
IBC packing instructions (IMDG)	: IBC03
Tank instructions (IMDG)	: T4
Tank special provisions (IMDG)	: TP1, TP29
EmS-No. (Fire)	: F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE
EmS-No. (Spillage)	: S-F - SPILLAGE SCHEDULE Foxtrot - WATER-SOLUBLE MARINE POLLUTANTS
Stowage category (IMDG)	: A

IATA

PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y964
PCA limited quantity max net quantity (IATA)	: 30kgG
PCA packing instructions (IATA)	: 964
PCA max net quantity (IATA)	: 450L
CAO packing instructions (IATA)	: 964
CAO max net quantity (IATA)	: 450L
Special provisions (IATA)	: A97, A158, A197, A215
ERG code (IATA)	: 9L

14.7. Transport in bulk according to Annex II of MARPOL 73/78⁹ and the IBC Code¹⁰

Not applicable

SECTION 15 Regulatory information

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

Listed on the Canadian DSL (Domestic Substances List)

Distillates (petroleum), hydrotreated light (64742-47-8)

Listed on the Canadian DSL (Domestic Substances List)

Manganese, tricarbonyl[(1,2,3,4,5-η)-1-methyl-2,4-cyclopentadien-1-yl]- (12108-13-3)

Listed on the Canadian DSL (Domestic Substances List)

Solvent naphtha (petroleum), heavy arom. (64742-94-5)

Listed on the Canadian DSL (Domestic Substances List)

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Naphthalene (91-20-3)

Listed on the Canadian DSL (Domestic Substances List)

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

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on INSQ (Mexican National Inventory of Chemical Substances)

Distillates (petroleum), hydrotreated light (64742-47-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on INSQ (Mexican National Inventory of Chemical Substances)

Manganese, tricarbonyl[(1,2,3,4,5-η)-1-methyl-2,4-cyclopentadien-1-yl]- (12108-13-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on INSQ (Mexican National Inventory of Chemical Substances)

Solvent naphtha (petroleum), heavy arom. (64742-94-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on INSQ (Mexican National Inventory of Chemical Substances)

Naphthalene (91-20-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on INSQ (Mexican National Inventory of Chemical Substances)

SECTION 16 Other Information

Issue date : 04/24/2025
Revision date : 12/18/2025
Supersedes : 10/13/2025

Full text of hazard classes and H-statements:

H227	Combustible liquid
H301	Toxic if swallowed
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H310	Fatal in contact with skin
H330	Fatal if inhaled
H332	Harmful if inhaled
H351	Suspected of causing cancer.
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

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Safety Data Sheet (SDS), Canada

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