



Octane Booster

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 12/6/2021 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : Octane Booster
Product code : 3530

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Gasoline additive

1.3. Supplier

Bardahl Manufacturing Corporation
1400 NW 52nd Street
P.O. Box
Seattle, WA 98107
USA
T 206-783-4851 - F 206-784-3219
www.bardahl.com
Contact: Jackie Leung

1.4. Emergency telephone number

Emergency number : 800-424-9300

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Flammable liquids, Category 4	Combustible liquid
Acute toxicity (oral), Category 3	Toxic if swallowed.
Skin corrosion/irritation, Category 2	Causes skin irritation.
Carcinogenicity, Category 2	Suspected of causing cancer.
Aspiration hazard, Category 1	May be fatal if swallowed and enters airways.
Hazardous to the aquatic environment — Chronic Hazard, Category 2	Toxic to aquatic life with long lasting effects.

2.2. GHS Label elements, including precautionary statements

GHS US labelling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Danger

Hazard statements (GHS US) :

Combustible liquid
Toxic if swallowed.
May be fatal if swallowed and enters airways.
Causes skin irritation.
Suspected of causing cancer.
Toxic to aquatic life with long lasting effects.

Precautionary statements (GHS US) :

If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Obtain special instructions before use.

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Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.
Wear eye protection, protective gloves.
If swallowed: Immediately call a POISON CENTER.
If on skin: Wash with plenty of water.
If exposed or concerned: Get medical advice/attention.
Specific treatment (see supplemental first aid instruction on this label).
Rinse mouth.
Do NOT induce vomiting.
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use alcohol resistant foam, BC-powder, carbon dioxide (CO₂) to extinguish.
Collect spillage.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Petroleum distillates (Diesel fuel no. 2)	CAS-No.: 68476-34-6	≥ 80	Flam. Liq. 4, H227 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
tricarbonyl(methylcyclopentadienyl)manganese	CAS-No.: 12108-13-3	3.047 – 3.601	Acute Tox. 3 (Oral), H301 Acute Tox. 2 (Dermal), H310 Acute Tox. 1 (Inhalation), H330 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Solvent naphtha (petroleum), heavy arom.	CAS-No.: 64742-94-5	1 – 5	Asp. Tox. 1, H304
Naphthalene	CAS-No.: 91-20-3	0.1 – 1	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of hazard classes and H-statements : see section 16

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SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: Call a physician immediately.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Take off contaminated clothing and wash it before reuse. Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
First-aid measures after ingestion	: Rinse mouth. Call a physician immediately. Do not induce vomiting.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after skin contact	: Irritation.
Symptoms/effects after eye contact	: Eye irritation.
Symptoms/effects after ingestion	: Risk of lung oedema.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Specific hazards arising from the chemical

Fire hazard	: Combustible liquid.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

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

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

6.1.2. For emergency responders

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

6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.

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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.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. 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. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.
Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool. Store locked up.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Octane Booster	
No additional information available	
tricarbonyl(methylcyclopentadienyl)manganese (12108-13-3)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA	0.2 mg/m ³
Solvent naphtha (petroleum), heavy arom. (64742-94-5)	
No additional information available	
Petroleum distillates (Diesel fuel no. 2) (68476-34-6)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Diesel fuel as total
ACGIH OEL TWA	100 mg/m ³
Naphthalene (91-20-3)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA [ppm]	10 ppm

8.2. Appropriate engineering controls

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

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8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: amber
Odour	: characteristic
Odour threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 64.4 °C PMCC typical
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 0.852 g/cm ³ typical
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: 2.6 mm ² /s @ 40 C typical
Viscosity, dynamic	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available

9.2. Other information

No additional information available

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SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Hazardous decomposition products may be released during prolonged heating like smokes, carbon monoxide and dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Toxic if swallowed.
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Octane Booster	
LD50 oral rat	175 mg/kg tricarbonyl(methylcyclopentadienyl)manganese(12108-13-3)
LD50 dermal rabbit	> 2000 mg/kg tricarbonyl(methylcyclopentadienyl)manganese(12108-13-3)
LC50 Inhalation - Rat	> 19.8 mg/l per 1hr. tricarbonyl(methylcyclopentadienyl)manganese(12108-13-3)
ATE US (oral)	175 mg/kg bodyweight
tricarbonyl(methylcyclopentadienyl)manganese (12108-13-3)	
LD50 oral rat	51.8 mg/kg (Rat)
LD50 dermal rabbit	140 mg/kg (Equivalent or similar to OECD 402, Rabbit, Experimental value, Dermal, 14 day(s))
LC50 Inhalation - Rat	0.08 mg/l (Equivalent or similar to OECD 403, 4 h, Rat, Male, Experimental value, Inhalation (vapours), 14 day(s))
ATE US (oral)	51.8 mg/kg bodyweight
ATE US (dermal)	140 mg/kg bodyweight
ATE US (gases)	10 ppmv/4h
ATE US (vapours)	0.08 mg/l/4h
ATE US (dust,mist)	0.08 mg/l/4h
Petroleum distillates (Diesel fuel no. 2) (68476-34-6)	
LD50 oral rat	> 5000 mg/kg (Rat, Oral)

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Petroleum distillates (Diesel fuel no. 2) (68476-34-6)	
LD50 dermal rabbit	> 2000 mg/kg (Rabbit, Dermal)
LC50 Inhalation - Rat	> 5 mg/l (4 h, Rat, Inhalation)
ATE US (gases)	4500 ppmv/4h
ATE US (vapours)	11 mg/l/4h
ATE US (dust,mist)	1.5 mg/l/4h
Naphthalene (91-20-3)	
LD50 dermal rat	> 16000 mg/kg bodyweight (Equivalent or similar to OECD 402, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))
LC50 Inhalation - Rat	> 0.4 mg/l (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, (maximum achievable concentration), Inhalation (vapours), 14 day(s))
ATE US (oral)	533 mg/kg bodyweight
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Suspected of causing cancer.
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: May be fatal if swallowed and enters airways.
Viscosity, kinematic	: 2.6 mm ² /s @ 40 C typical
Symptoms/effects after skin contact	: Irritation.
Symptoms/effects after eye contact	: Eye irritation.
Symptoms/effects after ingestion	: 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.

tricarbonyl(methylcyclopentadienyl)manganese (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)
Naphthalene (91-20-3)	
LC50 - Fish [1]	0.96 ppm (Oncorhynchus gorboscha, 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)

12.2. Persistence and degradability

tricarbonyl(methylcyclopentadienyl)manganese (12108-13-3)	
Persistence and degradability	Not readily biodegradable in water.

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Solvent naphtha (petroleum), heavy arom. (64742-94-5)	
Persistence and degradability	Not readily biodegradable in water.
Petroleum distillates (Diesel fuel no. 2) (68476-34-6)	
Persistence and degradability	Inherently biodegradable.
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	
tricarbonyl(methylcyclopentadienyl)manganese (12108-13-3)	
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)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
Solvent naphtha (petroleum), heavy arom. (64742-94-5)	
Partition coefficient n-octanol/water (Log Pow)	2.9 – 6.1
Bioaccumulative potential	Bioaccumable.
Petroleum distillates (Diesel fuel no. 2) (68476-34-6)	
Partition coefficient n-octanol/water (Log Pow)	3.9 – 6
Naphthalene (91-20-3)	
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)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
12.4. Mobility in soil	
tricarbonyl(methylcyclopentadienyl)manganese (12108-13-3)	
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)
Ecology - soil	Low potential for mobility in soil.
Petroleum distillates (Diesel fuel no. 2) (68476-34-6)	
Surface tension	25 mN/m
Ecology - soil	No (test)data on mobility of the component(s) available.
Naphthalene (91-20-3)	
Surface tension	No data available in the literature
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2.864 (log Koc, SRC PCKOCWIN v2.0, Calculated value)

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Naphthalene (91-20-3)

Ecology - soil

Low potential for adsorption in soil.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number

DOT NA No : Not applicable
UN-No. (TDG) : Not applicable
UN-No. (IMDG) : 3082
UN-No. (IATA) : Not applicable

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Not applicable
Proper Shipping Name (TDG) : Not applicable
Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Proper Shipping Name (IATA) : Not applicable

14.3. Transport hazard class(es)

DOT
Transport hazard class(es) (DOT) : Not applicable

TDG
Transport hazard class(es) (TDG) : Not applicable

IMDG
Transport hazard class(es) (IMDG) : 9
Danger labels (IMDG) : 9



IATA
Transport hazard class(es) (IATA) : Not applicable

14.4. Packing group

Packing group (DOT) : Not applicable
Packing group (TDG) : Not applicable
Packing group (IMDG) : III

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Packing group (IATA) : Not applicable

14.5. Environmental hazards

Dangerous for the environment : Yes

Marine pollutant : Yes



Other information : No supplementary information available.

14.6. Special precautions for user

DOT

No data available

TDG

No data available

IMDG

Special provisions (IMDG) : 274, 335, 969

Limited quantities (IMDG) : 5 L

Excepted quantities (IMDG) : E1

Packing instructions (IMDG) : P001, LP01

Special packing provisions (IMDG) : PP1

IBC packing instructions (IMDG) : IBC03

Tank instructions (IMDG) : T4

Tank special provisions (IMDG) : TP2, 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

No data available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
tricarbonyl(methylcyclopentadienyl)manganese	12108-13-3	Present	Active	
Solvent naphtha (petroleum), heavy arom.	64742-94-5	Present	Active	
Petroleum distillates (Diesel fuel no. 2)	68476-34-6	Present	Active	
Naphthalene	91-20-3	Not present	-	

tricarbonyl(methylcyclopentadienyl)manganese (12108-13-3)

Subject to reporting requirements of United States SARA Section 313

CERCLA RQ	100 lb
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tricarbonyl(methylcyclopentadienyl)manganese (12108-13-3)

SARA Section 302 Threshold Planning Quantity (TPQ)	100 lb
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15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

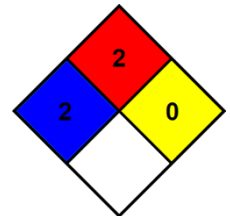
15.3. US State regulations

Component	State or local regulations
tricarbonyl(methylcyclopentadienyl)manganese(12108-13-3)	U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

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NFPA health hazard	: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.
NFPA fire hazard	: 2 - Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur.
NFPA reactivity	: 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating	
Health	: 2 Moderate Hazard - Temporary or minor injury may occur
Flammability	: 2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II & IIIA)
Physical	: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.
Personal protection	: B - Safety glasses, Gloves

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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.