

Product #(s) – OT12

Safety Data Sheet

For Emergency Call:
CHEM-TEL (800) 255-3924 24 Hour Assistance

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Master Octane Treatment

CAS Number: 67-56-1

Recommended Uses: Engine/Fuel Additive, Cleaner

Company Identification

Manufacturer's Name: MASTER

Address: 4635 Willow Drive, Medina, MN 55340

Telephone – General Information: (763) 478-3438

2. HAZARDS IDENTIFICATION

Hazard Classes: Flammable Liquid Category 2

Acute Oral Toxicity Category 3

Acute Dermal (skin) Toxicity Category 3

Acute Inhalation Toxicity Category 3

Toxic to Reproduction Category 1B

Specific Target Organ Toxicity (Single Exposure) Category 1 and Category 3

Aspiration Hazard Category 1

Note: Assigned to classification based on human experience

Signal Word: DANGER

Hazard Statements:

H225 Highly Flammable Liquid and Vapor.

H301 Toxic if Swallowed.

H304 May be fatal if swallowed and enters airways.

H311 Toxic in Contact with Skin.

H331 Toxic if Inhaled.

H336 May cause drowsiness or dizziness.

H360 May Damage Fertility or the Unborn Child – fetotoxic and teratogenic effects.

H370 Causes Damage to the Optic Nerve causing blindness if ingested.

Precautionary Statements:

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children,

P103 Read label before use.

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/hot surfaces – No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical lighting and equipment.

P242 Use only non-sparking tools.

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P243	Take precautionary measures against static discharge.
P261	Avoid breathing vapors.
P264	Wash 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 / protective clothing / eye protection.
P301 + P310	If SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P331	Do NOT induce vomiting.
P330	Rinse mouth.
P303 + P361 + P353	If ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P308 + P311	IF exposed or concerned: Call a POISON CENTER or doctor/physician
P361 + P378	Take off immediately all contaminated clothing and wash it before reuse.
P370 + P378	In case of fire: Use dry chemical, CO ₂ , alcohol-resistant foam, and water spray for extinction.
P403 + P235	Store in well-ventilated place. Keep cool.
P501	Disposal: Dispose of contents/container to a specialized waste disposal plant in accordance with local/regional regulations

Hazard Pictograms:



3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	Typical Weight Percentage	CAS Number
Methanol	100%	67-56-1

4. FIRST AID

Eyes: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops, seek medical attention.

Inhalation: If respiratory symptoms or other symptoms of exposure develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

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Ingestion: Aspiration hazard. Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek immediate medical attention.

Note to Physicians: Ethanol significantly decreases the toxicity of methanol because it competes for the same metabolic enzymes, and has been used to treat methanol poisoning.

Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

Medical Conditions: Exposure to high concentrations of this material may increase the sensitivity of the heart to certain drugs. Persons with pre-existing heart disorders may be more susceptible to this effect (see Note to Physician above).

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical, CO₂, water spray or alcohol-resistant foam. Water spray is recommended to cool or protect exposed materials or structures. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

Specific Hazards: This material is highly flammable and can be ignited by heat, sparks, flames or other sources of ignition (e.g., static electricity, pilot lights or mechanical/electrical equipment). Flame is invisible in daylight. Vapors may travel considerable distances to a source of ignition where they can ignite, flashback or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors or in sewers. If container is not properly cooled, it can rupture in the heat of a fire. Vapors are heavier than air and can accumulate in low areas.

Hazardous Combustion Products: Toxic gases and vapors; oxides of carbon and formaldehyde.

Special Firefighting Procedures: For fires beyond the initial stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self-contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Flammable. Spilling of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release if safe to do so. The use of explosion-proof equipment is recommended. Stay upwind and away from spill/release. For large spills, notify people down-wind of spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

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Environmental Precautions: Stop spill/release if it can be done with minimal risk. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways. Use foam on spills to minimize vapors. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water, notify appropriate authorities. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface water, may require notification of the National Response Center (phone number 800-424-8802).

Methods for Containment and Clean-Up: Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand, earth or other non-combustible material, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g., skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Keep away from ignition sources such as heat/sparks/open flames – No smoking. Take precautionary measures against static discharge. Non-sparking tools should be used. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see Section 8).

Flammable. May vaporize easily at ambient temperatures. The vapor is heavier than air and may create an explosive mixture of vapor and air. Beware of accumulation in confined spaces and low lying areas. Open container slowly to relieve any pressure. Electrostatic charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static electricity during transfer by bonding and grounding containers and equipment before transferring material. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-77 and/or API RP 2003 for specific bonding/grounding requirements. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practice.

Conditions for Safe Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat and all sources of ignition. Post area “No Smoking or Open Flame.” Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL
Methanol	200 ppm (Skin)	250 ppm (Skin)	200 ppm	---

Engineering Controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional ventilation or exhaust systems may be required.

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Specific Personal Protective Equipment

Eye/Face Protection: The use of eye protection that meets or exceeds ANSI Z.87.1 is recommended to protect against potential eye contact, irritation or injury. Depending on conditions of use, a face shield may be necessary.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the breakthrough performance of their products. Depending on exposure and use conditions, additional protection may be necessary to prevent skin contact including use of items such as chemical resistant boots, aprons, arm covers, hoods, coveralls or encapsulated suits. Suggested protective materials: butyl and nitrile rubbers.

Respiratory Protection: Where there is potential for airborne exposure above the exposure limits, a NIOSH approved air purifying respirator with an organic vapor cartridge may be used.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. Air-purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration as directed by regulation or the manufacturer's instructions, in oxygen deficient (less than 19.5% oxygen) situations or under conditions that are immediately dangerous to life and health (IDLH).

Use a positive pressure air supplied respirator if there is potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Other Protective Equipment: Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse.

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear, colorless liquid

Odor: Mild alcohol

Odor threshold: 4.2-596 ppm

pH: Not applicable

Melting/Freezing Point: -97.8°C / -144°F

Boiling point (at 1 atm): 64.7°C / 148 °F

Flash Point: 12 °C / 54 °F (Closed Cup)

Auto-Ignition Temperature: 470 °C / 878 °F

Evaporation rate (butyl acetate = 1): 4.1

Flammability (solid, gas): Not applicable

Explosive Limits: Lower – 6%/ Upper – 36%

Vapor Pressure: 92 mmHg @ 20 °C / 68 °F

Vapor Density (air = 1): 1.1 @ 15 °C / 59 °F

Specific gravity (H₂O = 1): 0.79 @ 20°C / 68 °F

Solubility in water: Soluble

Partition Coefficient: n-octanol/water: Log P = -0.77

Decomposition Temperature: No data

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Viscosity: $5.81 \times 10^{-7} \text{ m}^2/\text{s}$ @ 40 °C / 104 °F

10. STABILITY AND REACTIVITY

Stability (thermal, light, etc.): Stable under normal conditions of storage and handling.**Conditions to Avoid:** Avoid all possible sources of ignition (see Sections 5 and 7).**Incompatibility (materials to avoid):** Avoid contact with strong acids, bases and oxidizers such as liquid chlorine and oxygen. Contact with these materials may cause a violent or explosive reaction. May be corrosive to lead, aluminum, magnesium and platinum. May react with metallic aluminum or magnesium and generate hydrogen gas. May attack some forms of plastic, rubber and coatings.**Hazardous Decomposition Products:** Thermal decomposition may release carbon monoxide, carbon dioxide, and formaldehyde.**Hazardous Polymerization:** Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:

Product/Ingredient Name	Result	Species	Dose
Methanol	LD50 Oral	Rat	$\geq 2528 \text{ mg/kg}$
	LD50 Dermal	Rabbit	17,100 mg/kg
	LC50 Inhalation (vapor)	Rat	13.3 mg/l – 6hr

Note: Assigned to classification based on human experience and not animal data.**Skin Corrosion/Irritation:** Causes mild irritation. Repeated exposure may cause dryness or cracking.**Serious Eye Damage/Irritation:** Causes mild irritation.**Signs and Symptoms:** High concentrations can cause minor respiratory irritation, headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Ingestion can cause irritation of the digestive tract, nausea, abdominal pain, vomiting and visual disturbances ranging from blurred vision to light sensitivity, blindness or death.**Skin Sensitization:** None reported**Respiratory Sensitization:** None reported**Germ Cell Mutagenicity:** There is insufficient information available to conclude that methanol is mutagenic.**Carcinogenicity:** Methanol did not demonstrate carcinogenic effects in rats and mice treated via whole body inhalation at concentrations $\geq 1.3 \text{ mg/l}$ in air. There is insufficient information available to conclude that methanol is carcinogenic. It is not listed by NTP, IARC or OSHA.**Reproductive Toxicity:** Methanol has produced fetotoxicity in rats and teratogenicity in mice exposed by inhalation to high concentrations of methanol vapors.**Specific Target Organ Toxicity (Single Exposure):** Methanol ingestion causes damage to the optic nerve causing blindness. May cause drowsiness and dizziness.

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Specific Target Organ Toxicity (Repeated Exposure): There is insufficient information available to conclude that methanol causes target organ effects from repeated exposure.

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

12. ECOLOGICAL INFORMATION

Toxicity:

Ingredient Name	Result	Species	Exposure
Methanol	Acute EC50 = 16.912 mg/L Marine Water	Algae	96 hours
	Acute LC50 = 2500000 ug/L Marine Water	Crustaceans	48 hours
	Acute LC50 = 3289 mg/L Fresh Water	Daphnia	48 hours
	Acute LC50 > 100000 ug/L Fresh Water	Fish	96 hours

Persistence and Degradability: Methanol biodegrades easily in water and soil.

BOD5 = 1.1

COD = 1.05 – 1.55, 99%

Bioaccumulative Potential: Risk of bioaccumulation is low (BCF <500 and low log K_{ow} <4). BCF = 0.2 - <10 Log K_{ow} = -0.77

Mobility in Soil: Methanol is highly mobile. Adsorption coefficient (K_{oc}) solid phase/liquid phase = 1

Other Adverse Effects: None known

13. DISPOSAL CONSIDERATIONS

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

Recycle wherever possible. Large volumes may be suitable for re-distillation or, if contaminated, incinerated. Can be disposed of in a sewage treatment facility.

This material, if discarded as produced would be a federally regulated RCRA "listed" hazardous waste (U154). Use which results in chemical or physical change of this material could subject it to additional regulation as a hazardous waste.

14. TRANSPORT INFORMATION

DOT/TDG Proper Shipping Name: Limited Quantity

DOT/TDG Identification Number: Not applicable

DOT/TDG Hazard Class: Not applicable

DOT/TDG Packing Group: Not applicable

ERG Guide Number: Not applicable

Marine Pollutant: No

15. REGULATORY INFORMATION

TSCA: Methanol is listed on the TSCA inventory.

DSL: Methanol is listed on the DSL inventory.

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OSHA (Occupational Safety and Health Administration): This material is considered to be hazardous as defined by the OSHA Hazard Communication Standard.

This material has not been identified as a carcinogen by NTP, IARC or OSHA

CERCLA/SARA – Section 302 Extremely Hazardous Substances and TPQ (in pounds): This material does NOT contain chemicals subject to the reporting requirements of SARA 302 and 40 CFR 355 Appendix A and B.

EPA (CERCLA) Reportable Quantity (in pounds): This material contains the following chemicals subject to the reporting requirements of 40 CFR 302.4:

Component	Concentration	RQ
Methanol	100%	5000 lbs

CERCLA/SARA - Sections 311/312 (Title III Hazard Categories):

Acute: Yes Chronic: Yes Fire: Yes Reactivity: No

CERCLA/SARA – Section 313 and 40 CFR 372: This material contains the following chemicals subject to the reporting requirements of SARA 313 and SARA Title III and 40 CFR:

Component	Concentration	de minimis
Methanol	100%	1%

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material contains detectable chemicals known to the State of California to cause cancer and/or reproductive toxicity.

Component	Concentration	Effect
Methanol	100%	Developmental

Canada:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the Regulations.

WHMIS Hazard Class: B2, D1B, D2A, D2B

16. OTHER INFORMATION

Issue Date: May 10, 2016

Previous Issue Date: N/A

Change: N/A

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