SAFETY DATA SHEET

Issue Date 10-25-2018 **Revision Date** 10-25-2018 **Version** 5

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name: ENGINE FLUSH SOLUTION

Other means of identification

Common Name: 0412
UN/ID No Not Regulated
Synonyms None
Product Categories Engine Cleaner

Recommended use of the chemical and restrictions on use

Sale and Use Restrictions Not applicable
Recommended Use Restricted to professional users.
Uses advised against Consumer use

Details of the supplier of the safety data sheet

Supplier Address
MOC PRODUCTS CO., INC.
12306 Montague Street
Pacoima, CA 91331

Emergency telephone number

Company Phone Number MOC PRODUCTS CO., INC. (818) 794-3500
Emergency Telephone CHEMTREC 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity - Oral	Category 4
Skin sensitization	Category 1

Label elements

Emergency Overview

Warning

Hazard statements
Harmful if swallowed
May cause an allergic skin reaction

Appearance Oil **Physical state** Liquid **Odor** Pine

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Avoid breathing dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves

Precautionary Statements - Response
Specific treatment (see response statements below and Section 4 of the Safety Data Sheet)

IF ON SKIN: Wash with plenty of soap and water
If skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse
IF SWALLOWED: Call a POISON CONTROL CENTER or doctor/physician if you feel unwell
Rinse mouth

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Other information
• May be harmful in contact with skin
• Toxic to aquatic life with long lasting effects
6.9 % of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Weight %	Trade Secret
Mineral Oil	64742-58-1	0-95	*
Hydrotreated Heavy Paraffinic Oil	64742-54-7	0-95	*
Aliphatic Petroleum Distillates	64742-65-0	0-95	*
Terpene Alcohols	8002-09-03	4-10	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures

Skin contact Remove contaminated clothing. If skin is damaged, seek immediate medical attention. Wash with plenty of soap and water. If skin is not damaged and symptoms persist, seek medical attention. Wash contaminated clothing before reuse.

Inhalation If affected, remove individual to fresh air. If symptoms persist seek medical attention. If breathing is labored, administer oxygen. Keep person warm and quiet. Seek immediate medical attention/advice.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician if irritation develops and persists.

Ingestion If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Symptoms Drowsiness, Dizziness, Eye irritation, Respiratory irritation. Gastrointestinal tract (GI): Diarrhea, Nausea, Vomiting. Skin irritation: May cause allergic skin reaction.

Indication of any immediate medical attention and special treatment needed

Self-protection of the first aider Avoid breathing vapors or mists. Avoid contact with skin.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:
Use water spray (fog), foam, dry chemical or CO2.

Small Fire Dry chemical or CO2.

Large Fire Water spray or fog; Foam.

Explosive properties: Fire or intense heat may cause violent rupture of packages.

Specific hazards arising from the chemical
Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Some may burn, but not ignite readily. Incomplete combustion and thermolysis may produce gases of varying toxicity such as carbon monoxide, carbon dioxide, various hydrocarbons, aldehydes and soot. These may be highly dangerous if inhaled in confined spaces or at high concentration. Keep product and empty container away from heat and sources of ignition. Product is or contains a sensitizer: May cause sensitization by skin contact.

Hazardous combustion products Carbon monoxide, Carbon dioxide (CO2), Aldehydes, Hydrocarbons, Hydrogen sulfide, Oxides of sulfur, Alkyl Mercaptans, Alkyl sulfides, Metal oxides, Alcohols.

Specific methods:

Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge May be ignited by heat, sparks or flames.

Special firefighting procedures:
No action shall be taken involving any personal risk without suitable training. Evacuate surrounding areas. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Dike to collect large liquid spills. Use water spray to keep fire-exposed containers cool. Do not use water jet. Water may cause frothing of heated materials. The product is insoluble and floats on water. Water mist may be used to cool closed containers. Do not allow run-off from fire-fighting to enter drains or water courses.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions: Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Contaminated surfaces will be extremely slippery. Do not touch or walk through spilled material. Remove all sources of ignition. Use personal protective equipment. See Section 8 for information on appropriate personal protective equipment.

For emergency responders Use personal protection recommended in Section 8. Ventilate the area. Remove all sources of ignition. Be aware that gases can spread at ground level (heavier than air) and pay attention to the wind direction.

Environmental precautions

Environmental precautions: Do not flush into surface water or sanitary sewer system. Water runoff can cause environmental damage. Avoid subsoil penetration. Local authorities should be advised if significant spillages cannot be contained.

Methods and material for containment and cleaning up

Methods for Containment Dike far ahead of liquid spill for later disposal. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to state, local, federal regulations.

Methods for clean-up: Clean-up methods - small spillage: Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to state, local, federal regulations. Clean-up methods - large spillage: Keep unnecessary personnel away. Dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal. Avoid contact of spilled material with soil and prevent runoff entering surface waterways.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling: Do not get in eyes, on skin, or on clothing. Avoid breathing vapors or mists. Keep product and empty container away from heat and sources of ignition. Take precautionary measures against static discharge. Protect from physical damage. Do not store at temperatures above 120°F (50°C). Keep containers tightly closed in a cool, well-ventilated place. Empty containers retain product residue and can be hazardous.

Conditions for safe storage, including any incompatibilities

Technical measures/precautions: Mechanical ventilation required if used indoors on a continuous basis. Eye wash and safety shower should be easily accessible.

Materials to avoid: Oxidizing agents: Chlorates, Nitrates, Peroxides. Reducing agents, Strong acids, Strong bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines .

Chemical Name	ACGIH TLV	OSHA Exposure Limits:	NIOSH IDLH
Mineral Oil 64742-58-1	5 mg/m³ (mist)	5 mg/m³ (mist)	-
Hydrotreated Heavy Paraffinic Oil 64742-54-7	5 mg/m³ TWA (mist) 10 mg/m³ STEL (mist)	5 mg/m³	-
Aliphatic Petroleum Distillates 64742-65-0	-	Not established	-
Terpene Alcohols 8002-09-03	-	Not established	-

Appropriate engineering controls

Engineering measures: Mechanical ventilation required if used indoors on a continuous basis. Eye wash and safety shower should be easily accessible.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). If splashes are likely to occur, wear: Face protection shield.

Skin and body protection Wear normal work clothing. Chemical resistant gloves. Gloves must be inspected prior to use. Additional body garments should be used based on task being performed. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. (consult with the specific manufacturer to confirm performance).

Respiratory protection Ensure adequate ventilation. No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice. When using do not eat, drink or smoke. Wear suitable gloves and eye/face protection. Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Wash face, hands and any exposed skin thoroughly after handling. Take off contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid		
Appearance	Oil	**Odor**	Pine
Color	Clear, Amber	**Odor threshold**	No information available

Property	**Values**	**Remarks • Method**
pH	N/A	Not applicable
Melting point/freezing point	No information available	
Boiling point / boiling range	> 225 °C / 437 °F	(Lowest liquid component)
Flash point	> 104 °C / 220 °F	Pensky-Martens Closed Cup (PMCC)
Evaporation rate	Slower than ether	Slower than ether
Flammability (solid, gas)	No information available	
Flammability Limits in Air		
Upper flammability limit	No Data Available	
Lower flammability limit	No Data Available	
Vapor pressure	No Data Available	
Vapor density	Heavier than air	
Specific Gravity	0.86	
Water solubility	Insoluble in water	
Solubility in other solvents	No Data Available	
Partition coefficient	No Data Available	
Autoignition temperature	No Data Available	
Decomposition temperature	No Data Available	
Kinematic viscosity	22-23 mm2/s	@ 40 °C
Dynamic viscosity	No Data Available	
Explosive properties	No Data Available	
Oxidizing properties	No Data Available	

Other information

Softening point	No Data Available
Molecular weight	No Data Available
VOC Content (%)	
VOC Content (%)	5.3
Density	0.86 g/cc
Bulk density	No Data Available

10. STABILITY AND REACTIVITY

Reactivity

Reactivity Stable under normal conditions.

Chemical stability

Possibility of Hazardous Reactions May react with oxidizing agents.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid

Heat, flames and sparks.

Incompatible materials

Materials to avoid: Oxidizing agents: Chlorates, Nitrates, Peroxides. Reducing agents, Strong acids, Strong bases.

Hazardous Decomposition Products

Hazardous Decomposition Products Carbon monoxide, Carbon dioxide (CO2), Aldehydes, Hydrocarbons, Hydrogen sulfide,

Sulfur oxides (SOx), Alkyl Mercaptans, Alkyl sulfides, Metal oxides, Alcohols.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information Harmful if swallowed. May cause allergic skin reaction.

Inhalation May cause respiratory irritation. May cause drowsiness or dizziness.

Eye contact Avoid contact with eyes: Irritating to eyes.

Skin Contact May cause irritation: May cause allergic skin reaction.

Ingestion May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Mineral Oil 64742-58-1	> 2000 mg/kg (Rat)	> 4480 mg/kg (Rabbit)	-
Hydrotreated Heavy Paraffinic Oil 64742-54-7	>5000mg/kg (Rat)	>5000 mg/kg (Rabbit)	-
Aliphatic Petroleum Distillates 64742-65-0	-	-	-
Terpene Alcohols 8002-09-03	= 3200 mg/kg (Rat)	-	-

Information on toxicological effects

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization May cause allergic skin reaction. Respiratory Sensitization. Not classified.
Mutagenic effects: No data available to indicate product or any components present at or greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by IARC, NTP, or OSHA.
Reproductive toxicity Terpene alcohols (CAS#8002-09-3): Causes fetotoxicity in animals at doses which are maternally toxic.
STOT - single exposure Not classified.
STOT - repeated exposure Not classified.
Chronic toxicity Prolonged skin contact may defat the skin and produce dermatitis.
Subchronic toxicity No information available.
Target Organ Effects Skin, Eyes, Respiratory system, Gastrointestinal tract (GI).
Neurological effects May affect the central nervous system causing dizziness, headache or nausea.
Other adverse effects No information available.
Aspiration hazard This material, if ingested or vomited can cause lung injury.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 6.9 % of the mixture consists of ingredient(s) of unknown toxicity
The following values are calculated based on chapter 3.1 of the GHS document .
ATEmix (oral) 1929 mg/kg
ATEmix (dermal) 4896 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

7.65 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Mineral Oil 64742-58-1		79.6: 96 h Brachydanio rerio mg/L LC50 semi-static 3.2: 96 h Pimephales promelas mg/L LC50 semi-static		
Hydrotreated Heavy Paraffinic Oil 64742-54-7		5000: 96 h Oncorhynchus mykiss mg/L LC50		1000: 48 h Daphnia magna mg/L EC50
Aliphatic Petroleum Distillates 64742-65-0		5000: 96 h Oncorhynchus mykiss mg/L LC50		1000: 48 h Daphnia magna mg/L EC50

Persistence and degradability
Readily biodegradable: Not expected.

Bioaccumulation
Bioaccumulative potential.

Mobility
The product is insoluble and floats on water.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Dispose of in accordance with federal, state and local regulations.

Contaminated packaging Do not reuse container. Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT Not regulated

IATA Not regulated

IMDG Not regulated

15. REGULATORY INFORMATION

International Inventories

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

Federal Regulations

SARA 313

No SARA 313 chemicals are present above the reporting threshold.

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

State Regulations (RTK)

California Proposition 65

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm:

Chemical Name	CAS Number	California Proposition 65
Ethylene Glycol	107-21-1	Developmental
Beta-Myrcene	123-35-3	Carcinogen

U.S. State Right-to-Know Regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA Rating

Health hazards 1
Flammability 1
Instability 0
Physical and Chemical Properties -

HMIS Rating

Health hazards 1
Flammability 1
Physical hazards 0
Personal protection B

Prepared by Environmental Health and Safety Department

Issue Date 10-25-2018
Revision Date 10-25-2018
Revision Note
This data sheet contains changes from the previous version in section(s): 15.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The 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, unless specified in the text.

End of Safety Data Sheet