

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Product name : Mishimoto Fuel Relief® Diesel Fuel Treatment

Product code : MMFR-DSL

1.2. Relevant identified uses of the substance or mixture and uses advised against

Application : Consumer product. Engine maintenance.

Supplier : Mishimoto
7 Boulden Circle
New Castle, DE 19720, USA

Telephone : 302-762-4501

Website : <http://www.mishimoto.com>**SECTION 2 HAZARDS IDENTIFICATION****2.1. Classification of the substance or mixture**

HPR classification : Aspiration hazard, category 1. Flammable liquid, category 4.

Human health hazards : May be fatal if swallowed and enters airways.

Physical/chemical hazards : Combustible liquid.

2.2. Label elements

Label elements (HPR)

Hazard pictograms :



Signal word : Danger

H- and P-phrases	:	H304 H227 P101 P102 P103 P210 P280 P301+P310 P370+P378 P331 P403 P405	May be fatal if swallowed and enters airways. Combustible liquid. If medical advice is needed, have product container or label at hand. Keep out of reach of children. Read label before use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear protective gloves/protective clothing/eye protection/face protection. IF SWALLOWED: Immediately call a POISON CENTER/doctor. In case of fire: Use carbondioxide, foam, dry chemical, water fog to extinguish. Do NOT induce vomiting. Store in a well-ventilated place. Store locked up.
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P501

Dispose of contents/container to an official chemical waste depot.

Labelling of packagings where the contents do not exceed 100 ml:

Hazard pictograms :



Signal word : Danger

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS
3.2. Mixtures

Product description : Mixture.

Information on hazardous substances:

Substance name	Concentration (w/w%)	CAS nr.	Additional CAS nr.	
Distillates (petroleum), hydro- treated light	5 - 10	64742-47-8	-----	
Hydrocarbons, C11-14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	80 - 100	-----	64742-47-8	

Occupational exposure limit(s), if relevant, are listed in section 8. The actual concentration has been withheld as a trade secret.

SECTION 4 FIRST-AID MEASURES
4.1. Description of first aid measures

First aid measures

- Inhalation : Move victim into fresh air. Consult a doctor if victim feels unwell.
- Skin contact : Take off contaminated clothing. Wash off skin with plenty of water and soap before product dries up. Consult a doctor if irritation persists.
- Eye contact : Wash out with (lukewarm) water. Remove contact lenses. Consult a doctor if irritation persists.
- Ingestion : Do not induce vomiting. Give nothing to drink. Do rinse the mouth. As necessary give 1 or 2 spoons of laxative (sodium sulphate). Never give anything by mouth to an unconscious person. Consult a doctor immediately if victim feels unwell.

4.2. Most important symptoms and effects, both acute and delayed

Effects and symptoms

- Inhalation : May cause headache, dizziness and a feeling of sickness.
- Skin contact : Repeated exposure may cause skin dryness or cracking.
- Eye contact : May cause stinging of eyes and redness.
- Ingestion : May cause a feeling of sickness, vomiting and diarrhoea. May cause lung damage, sore throat and lack of breath.

4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians : None known.

SECTION 5 FIRE-FIGHTING MEASURES
5.1. Extinguishing media

Extinguishing media

- Suitable : Carbondioxide (CO2). Foam. Dry chemical. Water fog.

Not suitable : Water jet.

5.2. Special hazards arising from the substance or mixture

Special exposure hazards : None known.
Hazardous thermal decomposition products : Carbon monoxide may be evolved if incomplete combustion occurs.

5.3. Advice for firefighters

Special protective equipment for fire-fighters : Use adequate respiratory equipment in case of insufficient ventilation.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions : Danger of slipping. Clean up spills immediately. Wear shoes with non-slip soles. Avoid contact with spilled or released material. Vapours are heavier than air. Build up (of gasses) in low areas involves risk of suffocation.

6.2. Environmental precautions

Environmental precautions : Avoid release of product into sewers, surface water and/or ground water. In case of large spills: contain with dike. Waste product should not be allowed to contaminate soil or water.
Other information : Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Collect spilled material in containers. Absorb residues in sand or other inert material. Dispose at an authorised waste collection point. Wash away remainder with plenty of water and soap.

6.4. Reference to other sections

Reference to other sections : See also section 8.

SECTION 7 HANDLING AND STORAGE

7.1. Precautions for safe handling

Handling : Handle in accordance with good occupational hygiene and safety practices in well-ventilated areas. Keep away from sources of ignition — No smoking. Do not breathe vapour. Avoid contact with skin and eyes. Avoid splashing. Wear protective clothing.

7.2. Conditions for safe storage, including any incompatibilities

Storage : Keep frost-free, in a cool, dry and well-ventilated place (< 35 °C). Keep away from oxidizing agents. Keep away from food, drink and animal feedingstuffs.
Recommended packaging : Keep only in the original container.
Non recommended packaging : PE and PP.

7.3. Specific end use(s)

Use : Use only as directed.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits : Occupational exposure limits have not been established for this product.

Workplace exposure limits (mg/m³):

Chemical name	Province	TWA 8 hour (mg/m ³)	STEL 15 min (mg/m ³)	Comments	Source
Distillates (petroleum), hydro-treated light	BC	200	-	Skin. Restricted to conditions in which there are negligible aerosol exposures.	Table exposure limits chemical biological substances
Hydrocarbons, C11-14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	BC	200	-	Skin. Restricted to conditions in which there are negligible aerosol exposures.	Table exposure limits chemical biological substances

8.2. Exposure controls

Engineering measures : Use only in well-ventilated areas. Comply with standard precautionary measures for working with chemicals.

Hygienic measures : When using do not eat, drink or smoke.

Personal protective equipment:

The efficiency of personal protective equipment depends among other things on temperature and degree of ventilation. Always get professional advice for the particular local situation.

Body protection : Use of specific protective industrial clothing is not required under normal conditions of use. In case of large scale exposure wear suitable protective clothing, overalls or suit, and similar boots. Suitable material: nitril. Indication of permeation breakthrough time: 6 hours.

Respiratory protection : Take care of sufficient ventilation. Wear suitable respiratory protection in case of large scale exposure. Suitable: gas filter type A (brown), class I or higher on e.g. a facemask in accordance with CSA Z94.4.

Hand protection : Under normal conditions of use specific gloves are not required. Wear suitable gloves in case of frequent or prolonged use and in case of large scale exposure. Suitable material: nitril. ± 0,5 mm. Indication of permeation breakthrough time: 6 hours.

Eye protection : Wear appropriate safety glasses when there is danger of possible eye contact.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	: Liquid.	
Colour	: Colourless.	
Odour	: Characteristic.	
Odour threshold	: Not known.	
pH	: Not applicable.	Waterfree product.
Solubility in water	: Not soluble.	
Partition coefficient (n-octanol/water)	: Not known.	Not measured. Not relevant for mixtures.
Flash point	: 79 °C	
Flammability (solid, gas)	: Not applicable.	Liquid. See flashpoint.
Auto ignition temperature	: > 200 °C	
Boiling point/boiling range	: 148 - 290 °C	
Melting point/melting range	: Not known.	
Explosive properties	: None known.	Does not contain explosives.
Explosion limits (% in air)	: Not known.	
Oxidising properties	: Not applicable.	Does not contain oxidizing substances.
Decomposition temperature	: Not applicable.	
Viscosity (20°C)	: Not known.	
Viscosity (40°C)	: 1,8 - 1,92 mm ² /sec	

Vapour pressure (20°C) : 13 Pa
Vapour density (20°C) : 4,5 - 5,0
Relative density (20°C) : 0,795 - 0,803 g/ml
Evaporation rate : < 1 (n-butyl acetate = 1)

9.2. Other information

Other information : Not relevant.

SECTION 10 STABILITY AND REACTIVITY**10.1. Reactivity**

Reactivity : See sub-sections below.

10.2. Chemical stability

Stability : Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reactivity : No other hazardous reactions known.

10.4. Conditions to avoid

Conditions to avoid : See section 7.

10.5. Incompatible materials

Materials to avoid : Keep away from oxidizing agents.

10.6. Hazardous decomposition products

Hazardous decomposition products : Not known.

SECTION 11 TOXICOLOGICAL INFORMATION**11.1. Information on toxicological effects**

No toxicological research has been carried out on this product.

Inhalation

- Acute toxicity : Calculated LC50: > 5,445 mg/l. Ingredients of unknown toxicity: < 1 %. ATE: > 5 mg/l. Low toxicity. Not classified - based on available data, the classification criteria are not met. May cause headache, dizziness and a feeling of sickness.
- Corrosion/irritation : Not classified - based on available data, the classification criteria are not met.
- Sensitisation : Does not contain substances classified as respiratory sensitiser. Not classified - based on available data, the classification criteria are not met.
- Carcinogenicity : Not expected to be carcinogenic. Not classified - based on available data, the classification criteria are not met.
- Mutagenicity : Does not contain mutagenic substances. Not classified - based on available data, the classification criteria are not met.

Skin contact

- Acute toxicity : Calculated LD50: > 2200 mg/kg.bw. Ingredients of unknown toxicity: < 1 %. ATE: > 2000 mg/kg.bw. Low toxicity. Not classified - based on available data, the classification criteria are not met.
- Corrosion/irritation : Slight irritation possible. Repeated exposure may cause skin dryness or cracking. Prolonged contact may dry out and defat the skin. Not classified - based on available data, the classification criteria are not met.
- Sensitisation : Does not contain skin sensitisers. Not classified - based on available data, the classification criteria are not met.

- Mutagenicity : Does not contain mutagenic substances. Not classified - based on available data, the classification criteria are not met.
- Eye contact
- Corrosion/irritation : Slight irritation possible. Not classified - based on available data, the classification criteria are not met.
- Ingestion
- Acute toxicity : Calculated LD50: > 4401 mg/kg.bw. Ingredients of unknown toxicity: < 1 %. ATE: > 2000 mg/kg.bw. Low toxicity. Not classified - based on available data, the classification criteria are not met.
- Aspiration : Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal. If swallowed, if any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 38.3° C, shortness of breath, chest congestion or continued coughing or wheezing.
- Corrosion/irritation : May cause a feeling of sickness, stomachache, vomiting and diarrhoea.
- Carcinogenicity : Not expected to be carcinogenic. Not classified - based on available data, the classification criteria are not met.
- Mutagenicity : Does not contain mutagenic substances. Not classified - based on available data, the classification criteria are not met.
- Reprotoxicity : Development: Not expected to be reprotoxic. Development: Not classified - Based on available data, the classification criteria are not met. Fertility: not expected to be reprotoxic. Fertility: Not classified - based on available data, the classification criteria are not met.

Toxicological information:

Chemical name	Property		Method	Test animal
Distillates (petroleum), hydro- treated light	LC50 (inhalation) - estimate	> 5280 mg/m ³	Read across	Rat
	NOEL (carcinogenicity) - estimate	Not carcinogenic	Read across	-----
	NOAEL (inhalation) - estimate	> 1000 mg/m ³	Read across	Mouse
	NOAEL (oral) - estimate	750 mg/kg bw/d	Read across	Rat
	Genotoxicity - estimate	Not genotoxic	Read across	Mouse
	Skin sensitisation - estimate	Not sensitizing	Read across	Guinea pig
	LD50 (dermal) - estimate	> 2000 mg/kg bw	-----	Rabbit
	Skin irritation - estimate	Irritant	Read across	Rabbit
	Eye irritation - estimate	Non-irritant	Read across	Rabbit
	Mutagenicity - estimate	Negative	Read across	Salmonella typhimurium
	NOAEL (fertility) - estimate	1500 mg/kg.d	Read across	Rat
	NOAEL (development) - estimate	500 mg/kg.d	Read across	Rat
	LD50 (oral) - estimate	> 5000 mg/kg bw	Read across	Rat
	Hydrocarbons, C11-14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	NOAEL (inhalation) - estimate	> 2200 mg/m ³	Read across
LC50 (inhalation) - estimate		> 5000 mg/m ³	-----	-----
NOAEL (development) - estimate		Not teratogenic	-----	-----
NOAEL (fertility) - estimate		Not reprotoxic	-----	-----
LD50 (dermal)		> 2000 mg/kg bw	OECD 402	Rat
Skin irritation		Non-irritant	OECD 404	Rabbit
Eye irritation		Non-irritant	OECD 405	Rabbit
Skin sensitisation		Not sensitizing	OECD 406	-----
LD50 (oral)		> 5000 mg/kg bw	OECD 401	Rat

LC50 (inhalation)	> 4950 mg/m ³	OECD 403	Rat
NOAEL (oral) - estimate	> 5500 mg/kg bw/d	Read across	Rat
Mutagenicity - estimate	Not mutagenic	Read across	
Respiratory irritation - estimate	Non-irritant		
NOEL (carcinogenicity) - estimate	Not carcinogenic		

SECTION 12 ECOLOGICAL INFORMATION
12.1. Toxicity

No ecotoxicological research has been carried out on this product.

Ecotoxicity : Harmful to aquatic organisms. Calculated LC50 (fish): 21 mg/l. Calculated EC50 (waterflea): 15 mg/l. Contains 0 % of components with unknown hazards to the aquatic environment. May form an oil film on the water surface causing a decline in oxygen content with possible adverse effects for aquatic organisms.

12.2. Persistence and degradability

Persistence – degradability : May cause long-term adverse effects in the aquatic environment.

12.3. Bioaccumulative potential

Bioaccumulative potential : No specific information known.

12.4. Mobility in soil

Mobility : Adsorbs to soil and has low mobility. Floats on water.

12.6. Other adverse effects

Other information : Not applicable.

Ecological information:

Chemical name	Property		Method	Test animal
Distillates (petroleum), hydro- treated light	LC50 (fish) - estimate	> 2 mg/l	OECD 203	Oncorhynchus mykiss
	EC50 (waterflea) - estimate	1,4 mg/l	OECD 202	Daphnia magna
	IC50 (algae) - estimate	> 1 mg/l	OECD 201	Pseudokirchnerella subcapitata
	NOEC (waterflea) - chronic	0,48 mg/l.d	OECD 211	Daphnia magna
	Ultimate aerobic biodegradation (%)	58,6 %	OECD 301 F	
	NOEC (fish)	2 mg/l	OECD 203	Oncorhynchus mykiss
	NOEC (waterflea) - acute	0,3 mg/l	OECD 202	Daphnia magna
	NOEC (fish) - estimate	0,098 mg/l.d		Oncorhynchus mykiss
	Log P(ow)	> 6		
BCF	537			

SECTION 13 DISPOSAL CONSIDERATIONS
13.1. Waste treatment methods

Product residues : Do not dispose empty pack with waste produced by households. Containers may be recycled. Treat product residues and non-empty pack as hazardous waste.

Additional warning : None.

Waste water discharge : Do not dispose into the environment, in drains or in water courses.

Local legislation : Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

SECTION 14 TRANSPORT INFORMATION**14.1. UN number**

UN nr. : None.

14.2. UN proper shipping name

Transport name : Not regulated.

14.3/14.4/14.5. Transport hazard class(es)/Packing group/Environmental hazards

TDG (land)

Class : This product is not classified according to TDG.

IMDG (sea)

Class : This product is not classified according to IMDG.

Marine pollutant : No

IATA (air)

Class : This product is not classified according to IATA.

14.6. Special precautions for user

Other information : Country specific variations may apply.

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

Marpol : Not intended to be carried in bulk according to International Maritime Organisation (IMO) instruments. Packaged liquids are not considered bulk.

SECTION 15 REGULATORY INFORMATION**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Regulations : Hazardous Products Regulation 2015 and other regulations.

Substances listed on Canadian Domestic Substances List (DSL)

: Distillates (petroleum), hydro- treated light ; Hydrocarbons, C11-14, n-alkanes, isoalkanes, cyclics, < 2% aromatics

SECTION 16 OTHER INFORMATION**16.1. Other information**

The information in this safety data sheet is compiled in compliance with the Hazardous Products Regulation 2015 and accurate to the best of our knowledge and experience at the date of issue specified. It is the user's obligation to use this product safely and to comply with all applicable laws and regulations concerning the use of the product. This safety data sheet complements the technical information sheets but does not replace them and offers no warranty with regard to product properties.

Users are also forewarned for any hazards involved when the product is used for other purposes than those for which it is designed.

Changed or new information with regard to the previous release is indicated with an asterisk (*).

List of abbreviations and acronyms that could be (but not necessarily are) used in this safety data sheet:

ATE	: Acute Toxicity Estimate
CMR	: Carcinogenic, Mutagenic or toxic for Reproduction
DSL	: Domestic Substances List
GHS	: Globally Harmonized System of Classification and Labelling of Chemicals
HPA	: Hazardous Products Act
HPR	: Hazardous Products Regulations
IATA	: International Air Transport Association
IBC code	: International Bulk Chemical Code
IMDG	: International Maritime Dangerous Goods Code
LD50/LC50	: Lethal Dose/Concentration for 50% of a population
MARPOL	: International Convention for the Prevention of Pollution From Ships
NO(A)EL	: No Observed (Adverse) Effect Level
OECD	: Organisation for Economic Co-operation and Development
OSHA	: United States Occupational Safety and Health Administration
PBT	: Persistent, Bioaccumulative and Toxic
REACH	: Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	: Regulations concerning the International Carriage of Dangerous Goods by Rail
STP	: Sewage Treatment Plant
TDG	: Transportation of Dangerous Goods
TWA/STEL	: Time-Weighted Average/Short Term Exposure Limit
UN	: United Nations
VOC	: Volatile Organic Compounds
vPvB	: Very Persistent and Very Bioaccumulative
WHMIS	: Workplace Hazardous Materials Information System

Number format : ", " used as decimal separator.

End of safety data sheet.