

SAFETY DATA SHEET**1. PRODUCT AND COMPANY IDENTIFICATION**

Product Name : MOLY GREEN PREMIUM PROTECT 5W-40 SN/CF C3
 Product Code : 50-E-141
 Recommended Use : Engine oil
 Identification of the supplier : CHUGAI YUKAGAKU KOGYO Co., Ltd.
 Address : 790 Nisibukuro, Yasio-City, Saitama Pref. JAPAN
 Phone number : +81-48-924-5211
 Facsimile number : +81-48-924-5212
 Emergency telephone number : +81-48-929-0051

2. Hazards identification

GHS CLASSIFICATION
 PHYSICAL/CHEMICAL HAZARDS : Not classified
 HEALTH HAZARDS : Not classified
 ENVIRONMENTAL HAZARDS : Not classified
 GHS LABELING
 Precautionary pictograms : Not applicable
 Signal word : Not applicable
 Hazard Statement : Not applicable
 Precautionary Statements
 Prevention : Not applicable
 Response : Not applicable
 Storage : Not applicable
 Disposal : Not applicable

※ Even when there is no mentioning in the above instructions by GHS classification, please consider sufficiently to prevention /response/storage/disposal by making reference to after information.

3. Composition/information on ingredients

Substance/Mixture : Mixture
 The name of a chemical substance : Mixture of lubricant base oils and Additives
 Ingredients and Concentration :

Ingredients	Cas No.	Concentration (mass%)
Petroleum hydrocarbons	64742-54-7	75-85
Additives	(Mixture)	15-25

Chemical formula : nonidentifiable

Hazardous substances

Poisonous and Deleterious Substances Control Act : Not Regulated

Pollutant Release and Transfer Register (PRTR) : Not Regulated

Japan Industrial Safety and Health Act :

Ingredients	Cabinet Order No.	Concentration (mass%)
Mineral oil	Article 18, 1, Attached table 9-168 of Cabinet order (Labeling, etc)	87-97

4. First-aid measures

Inhalation
 1 Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 2 Cover the body with blankets to keep warm and quiet. If you feel unwell, seek medical advice.

Skin Contact
 1 Immediately take off the polluted clothes and flush skin with large amounts of water and soapy water.
 2 Wash contaminated clothing before reuse.

Eye Contact
 1 Rinse with clean water carefully for several minutes.
 2 Remove contact lenses if present and if removal is easy, then continue rinsing.
 3 Rinse for 15 minutes at a minimum and seek medical attention.

Ingestion
 1 Do not induce vomiting. Call a physician or poison control center immediately.
 2 When the inside of the mouth is polluted, it's washed with water enough.

5. Fire-fighting measures

Extinguishing Media : Mist of loaded liquid, dry chemicals, carbon dioxide, fire foam, and dry sand are effective.

Extinguishing Media to Avoid : Use of straight steam of water can cause a risk of spreading fire.

Specific hazards arising : In some cases of fire, may release irritant gases.

Peculiar fire extinguishing method
 1 Remove combustion source in fire.
 2 Spray water to the surrounding facilities for cooling.
 3 Keep unauthorized persons off the site of occurrence of fire and the surroundings.

Precautions for fire fighters
 1 Fight fire from windward direction while wearing protective equipment. If contact with skin is expected, wear impervious protective equipment and gloves.
 2 Use air-breathing apparatus and protective clothing whenever necessary.

6. Accidental release measures

Personal precautions : Wear protective equipment when working.

Environmental precautions
 1 Prevent spreading of oil spill with earth and sand, sandbags, or other proper materials and use care not to allow the oil spill to flow to street drains, sewer systems, and rivers.
 2 At sea, install oil spill containment booms to prevent spreading of spills and absorb with absorption mat or other proper materials.

Methods and materials for containment and cleaning up
 1 Make a person evacuate from a dangerous area.
 2 Stretch a rope and prohibit person's entering around the dangerous area.
 3 In case of spillage in small quantity, collect spillage by absorbing with earth, sand,

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sawdust, waste, or other proper materials.

- Prevention of second accident
- 4 In case of spillage in large quantity, enclose with embankment to prevent spreading of spillage and collect spillage in empty containers to the extent possible.
 - 1 In case of spillage, immediately inform the organizations concerned of the spillage to prevent possible accidents and spreading of spillage.
 - 2 Remove nearby potential ignition sources immediately and make fire-extinguishing agents available.
 - 3 Remove spillage completely, and ventilate and clean the site and the surroundings.

7. Handling and storage

- Handling
- Technical measures
- 1 Keep away from any possible contact with sparks, open flames, and high-temperature materials, and do not allow release of vapor without justification.
 - 2 Use personal protective equipment as required.
 - 3 Use pumps or other proper equipment for taking out from containers. Do not siphon with your mouth using a tube. Do not drink.
 - 4 When mist is generated, use respiratory equipment to prevent inhalation of mist.
- Ventilation/Exhaust measure
- 1 Maintain adequate ventilation when handling indoors.
 - 2 In case of vapor/mist dispersion, install a closed system, local ventilation system, and /or other proper equipment for the sources of vapor/mist generation.
- Precautions
- 1 Wash hands and face thoroughly after handling.
 - 2 Wear protective gloves when opening containers to eliminate a risk of hand injury.
 - 3 Avoid rough handling of containers such as falling, dropping, exposing to shock, and dragging.
- Storage
- Storage Conditions
- 1 Store in a well ventilated, cool, dry, dark place, protecting from direct sunlight.
 - 2 Avoid every kind of potential ignition sources and high-temperature materials.
 - 3 Keep containers tightly closed after use to prevent possible contamination with dust and moisture.
- Precautions
- 1 Avoid contact and storage in the same place with Halogens, Strong acids, Alkalies and Oxidizers.
 - 2 Empty containers may contain combustible product residues. Do not weld, solder, drill, cut or perform similar operations unless they have been properly cleaned.

8. Exposure controls and personal protection

- Engineering controls
- 1 In case of mist generation, enclose the source of mist generation, or install a ventilation system.
 - 2 Install eye cleaning and body cleaning equipment near the handling site.
- Control parameters
- : None established
- Assessment Criteria of Working Environment
(Ministry of Labor, Notification No.79 in 27-Mar-95)
- Threshold Limit Values
- 1 Time Weighted Average $3\text{mg}/\text{m}^3$ (Mineral Oil Mist)
(Japan Society for Occupational Health /2010 year editions)
 - 2 Time Weighted Average $5\text{mg}/\text{m}^3$ (Mineral Oil Mist)
(ACGIH /2010 year editions)
- Protective Equipment
- Respiratory Protection
- : Not needed under normal conditions, but wear a gas mask (against organic gases) whenever required.
- Hand protection
- : In case of prolonged or repeated exposure, wear oil-resistant hand protection.
- Eye protection
- : In case of exposure to splashes, wear ordinary type goggles.
- Skin Protection
- : In case of handling over a prolonged period of time or in case of exposure to oil, wear oil-resistant, long-sleeved work clothing.
- Hygiene Measures
- 1 Take off contaminated clothing and wash thoroughly before reuse.
 - 2 Wash hands thoroughly after handling.

9. Physical and chemical properties

- Appearances
- Physical state
- : Liquid
- Form
- : Viscous fluid
- Color
- : Clear Brown
- Odor
- : Slight odor
- Density (at 15 C)
- : 0.85 g/cm^3 JIS K 2249
- Flash Point
- : >200 $^{\circ}\text{C}$ JIS K 2265-4 (COC)
- Viscosity (at 40 $^{\circ}\text{C}$)
- : 81 mm^2/s JIS K 2283
- (at 100 $^{\circ}\text{C}$)
- : 14 mm^2/s JIS K 2283
- Pour Point:
- : <-20.0 $^{\circ}\text{C}$ JIS K 2269
- Upper/lower flammability or explosive limits (Estimated value)
- : Explosion Limit (1-7%)
- Solubility
- : Water/insoluble

10. Stability and reactivity

- Chemical stability
- : Stable when stored or preserved in a dark place at room temperature.
- Possibility of hazardous reactions
- : Keep away from any possible contact with strong oxidizing agents.
- Conditions to avoid
- 1 Contact with incompatible hazard substances.
 - 2 Prolonged heating, open flames, and ignition sources
- Incompatible materials
- : Use care to keep away from any possible contact with halogens, strong acids, alkalis, and Oxidizers.
- Hazardous decomposition products
- : When burnt, may release carbon monoxide and other gases.

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(The obtained information is based on a safety data sheet of each ingredient)

Product

For mixtures, hazard category was identified based on the classification criteria for mixtures.

Acute toxicity : No data available
 Skin Corrosion/Irritation : No data available
 Serious Eye Damage : No data available
 /Eye Irritation
 Respiratory sensitizer : No data available
 Skin sensitizer : No data available
 Germ Cell Mutagenicity : No data available
 Carcinogenicity : No data available
 Toxic to reproduction : No data available
 Specific Target Organ Toxicity : No data available
 Specific Target Organ Toxicity : No data available
 Aspiration Hazard : As Kinematic viscosity at 40°C is 20.5 mm²/s and more .not applicable.

Ingredients(Petroleum hydrocarbons)

Acute toxicity(oral) : LD50: ≥ 5000 mg/kg[rat]
 Acute toxicity(dermal) : LD50: ≥ 5000 mg/kg[rat]
 Acute toxicity(Inhalation) : LC50(4h) >5.0 mg/L[rat] (Oil mist)
 Serious eye damage : Practically None [rabbit]

Respiratory sensitization : Not applicable
 Skin sensitization : None Buehler method [guinea pig]
 Mutagenicity : None AMES method [guinea pig]
 Carcinogenicity : EU:Category 2 : R45 need not apply. (NOTE L is Applicable), IARC:3
 Reproductive toxicity : Negative
 Specific target organ toxicity (Single exposure) : Negative
 Specific target organ toxicity (Repeated exposure) : Negative
 Aspiration hazard : Not applicable

Ingredient (Additive)

(Long-chain arcarylamine/The content in the product : 0.1- <1.3 %)

Acute oral toxicity : LD50 Rat: > 5,000 mg/kg
 Method: OECD Test Guideline 401
 Test substance: Read-across (Analogy)
 Remarks: Based on available data, the classification criteria are not met.
 Acute dermal toxicity : LD50 Rat: > 2,000 mg/kg
 Method: OECD Test Guideline 402
 Test substance: Read-across (Analogy)
 Remarks: Based on available data, the classification criteria are not met.
 Acute inhalation toxicity : study scientifically unjustified
 Skin corrosion/irritation : Species: Rabbit
 Result: No skin irritation
 Method: OECD Test Guideline 404
 Test substance:yes
 Serious eye damage/eye irritation : Species: Rabbit
 Result: No eye irritation
 Method: OECD Test Guideline 405
 Test substance: yes
 Based on available data, the classification criteria are not met.
 Respiratory or skin sensitisation : Test Method: Maximisation Test
 Species: Guinea pig
 Result: Does not cause skin sensitisation.
 Method: OECD Test Guideline 406
 Test substance: Read-across (Analogy)
 Based on available data, the classification criteria are not met.
 Germ cell mutagenicity
 Genotoxicity in vitro : Result: negative
 Test substance: Read-across (Analogy)
 Based on available data, the classification criteria are not met.
 Genotoxicity in vivo : Test species: Mouse
 Test substance: Read-across (Analogy)
 Result: negative
 Based on available data, the classification criteria are not met.
 Carcinogenicity : study scientifically unjustified
 Reproductive toxicity : Test substance: Read-across (Analogy)
 Based on available data, the classification criteria are not met.

(Zinc alkyl dithiophosphate)/The content in the product : 0.1- <1.3 %)

Acute oral toxicity : LD50 Rat, male: 2,600 mg/kg
 Method: Tested according to Annex V of Directive 67/548/EEC.
 Test substance: yes
 GLP: yes
 Remarks: May be harmful if swallowed.
 Acute dermal toxicity : LD50 Rabbit, male and female: > 3,160 mg/kg
 Method: OECD Test Guideline 402
 Test substance: yes
 Remarks: Based on available data, the classification criteria are not met.
 Acute inhalation toxicity : LC50 Rat, male: > 2 mg/l

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	Exposure time: 1 h
	Method: OECD Test Guideline 403
	Test substance: Read-across (Analogy)
	GLP: no
	Remarks: Based on available data, the classification criteria are not met.
Skin corrosion/irritation	: Species: Guinea pig
	Exposure time: 4 h
	Result: Causes skin irritation.
	Method: OECD Test Guideline 404
	Test substance: Read-across (Analogy)
	Specific concentration limits : Skin Irrit. 2 H315 >= 6.25 -100%.
Serious eye damage/eye irritation	: Species: Rabbit
	Exposure time: 504 h
	Result: Causes serious eye damage.
	Method: 16 CFR 1500.42
	Test substance: Read-across (Analogy)
Carcinogenicity	: No data available

12. Ecological information

(The obtained information is based on a safety data sheet of each ingredient)

Product

For mixtures, hazard category was identified based on the classification criteria for mixtures.

Ecotoxicity	: No data available
Bioaccumulative potential	: No data available
Mobility	: No data available
Other adverse effect	: No data available
Ingredients (Petroleum hydrocarbons)	
Ecotoxicity	
Acute toxicity	: Hydrobios is polluted because dissolve in no water. LC 50 (Fathead Minnow, 4 d): > 100 mg/l EC 50 (Water flea (Daphnia magna), 2 d): > 10,000 mg/l NOEL (Green algae (selenastrum capricornutum)): >100mg Since putting it in the above test for water-insolubility, adjusted WAF (for water applicability picture) is being used as a sample. From the above test outcome, without aquatic environment acute harmful effects.
Chronic toxicity	: Hydrobios is polluted because dissolve in no water. NOEL (Fathead Minnow, 14 d): > 100 mg/l NOEL (Water flea (Daphnia magna), 21 d): > 10 mg/l applicability picture) is being used as a sample. From the above test outcome, without aquatic environment acute harmful effects. Biological decomposition test outcome is 31% (28 days). There is biodegradability basically, but it isn't biodegradability easily.
Bioaccumulative potential	: There is no useful information.
Mobility	: Log KOC of resemblance group oil is guessed at with more than 3. It's difficult to think that the oil which leaked at the surface of the earth flows to groundwater by being absorbed in ground.
Other adverse effect	: There is no useful information.
Ingredient (Additive)	
(Long-chain arcarylamine/The content in the product	: 0.1- <1.3 %)
Ecotoxicity	
Toxicity to fish	: LC50 (Danio rerio (zebra fish)): > 100 mg/l Exposure time: 96 h Test Method: static test Test substance: Read-across (Analogy) Method: OECD Test Guideline 203 Based on available data, the classification criteria are not met.
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Test Method: static test Test substance: yes Method: OECD Test Guideline 202 Based on available data, the classification criteria are not met.
Toxicity to algae	: EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l Exposure time: 72 h Test Method: static test Test substance: Read-across (Analogy) Method: OECD Test Guideline 201 Based on available data, the classification criteria are not met.
Persistence and degradability	
Biodegradability	: aerobic activated sludge Result: Not biodegradable Biodegradation: 1 % Exposure time: 28 d Test substance: Read-across (Analogy) According to the results of tests of biodegradability this product is not readily biodegradable.
Bioaccumulative potential	: Accumulation in aquatic organisms is expected.

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Mobility in soil	: Partition coefficient: noctanol/water log Pow: > 7.6
Results of PBT and vPvB assessment	: After release, adsorbs onto soil.
(Zinc alkyl dithiophosphate)/The content in the product	: This substance is not considered to be persistent, bioaccumulating and toxic (PBT)., This substance is not considered to be very persistent and very bioaccumulating (vPvB).
Ecotoxicity	: Toxicity to fish
Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): 4.5 mg/l Exposure time: 96 h Test Method: semi-static test Analytical monitoring: no Test substance: Read-across (Analogy) Method: OECD Test Guideline 203 GLP: yes Toxic to aquatic life.
Toxicity to daphnia and other aquatic invertebrates	: EL50 (Daphnia magna (Water flea)): 5.4 mg/l Exposure time: 48 h Test Method: static test Analytical monitoring: yes Test substance: Read-across (Analogy) Method: OECD Test Guideline 202 GLP: yes Toxic to aquatic life.
Toxicity to algae	: EbC50 (Selenastrum capricornutum (green algae)): 2.1 mg/l Exposure time: 96 h Test Method: static test Analytical monitoring: yes Test substance: Read-across (Analogy) Method: OECD Test Guideline 201 GLP: yes Toxic to aquatic life.
Persistence and degradability	
Biodegradability	: aerobic activated sludge Concentration: 10 mg/l Result: Not readily biodegradable. Biodegradation: 1.5 % Exposure time: 28 d Method: OECD Test Guideline 301B Test substance: yes GLP: yes According to the results of tests of biodegradability this product is not readily biodegradable.
Bioaccumulative potential	: Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected. Partition coefficient: noctanol/water log Pow: 0.9 at 23 ° C
Mobility in soil	: After release, adsorbs onto soil.
Results of PBT and vPvB assessment	: This substance is not considered to be persistent, bioaccumulating and toxic (PBT)., This substance is not considered to be very persistent and very bioaccumulating (vPvB).

13. Disposal considerations

Disposal methods	1 Dispose of contents/container in accordance with local/regional/national/international regulations. 2 Don't throw 3 Every customer/user of the product should dispose of industrial waste on its own responsibility, otherwise it must rely on a company authorized by prefectural governor for treating industrial waste or a local public body involved in the disposal of industrial waste for proper disposal. 4 Before disposal of used container, remove contents completely.
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14. Transport information

UN classification	: Not applicable
LAND - Precautionary Transportation Measures & Conditions	: Do not co-load together with dangerous substances categorized in Fire Cat. 1 and/or 6, and/or High Pressure Gases.
NOTE: Comply with applicable laws and regulations.	
SEA (IMDG)	: Not Regulated for Sea Transport according to IMDG-Code
Marine Pollutant	: No
AIR (IATA)	: Not Regulated for Air Transport
Specific security precaution and condition of transportation	: Transport containers without causing any significant friction or shaking.

15. Regulatory information

National Laws and Regulations	
Fire Service Law	: Category 4, Flammable Liquids, Class III (#4 Petroleum)
Industrial Safety and Health Act	: Notified Substances
Pollutant Release and Transfer Register (PRTR)	: Not Regulated
Water Pollution Control Act	: Regulations on emissions
Sewerage Act	: Regulations on emissions

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Marine Pollution Prevention Law : Regulations on emissions
Waste Management and Public : Industrial waste treatment regulation
Cleaning Law

16. Other information

(references)

Globally Harmonized System of Classification and Labelling of Chemicals(GHS) (2013 year editions)
The National Institute of Technology and Evaluation (NITE) /GHS relevant information
Japan Personnel management & Safety information /GHS relevant information
The others; Additionally the information a literature search gave.

We would like every customer/user of the product to refer to the information and understand the necessity of taking appropriate measures for the actual handling conditions on their own responsibilities for optimum practical application of the product of interest.

Consequently, the Safety Data Sheet is not intended to guarantee the safety of the product referenced to herein.