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SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: MOBIL PYROTEC HFD 46
Product Description: Aryl Phosphate
Product Code: 201560106030, 620252-87
Recommended Use: Hydraulic fluid

COMPANY IDENTIFICATION

Supplier: EMG Lubricants GodoKaisha
W Building
1-8-15, Kohnan, Minato-ku
Tokyo 108-8005 Japan

Supplier General Contact

0120-016-313

SECTION 2 HAZARDS IDENTIFICATION

This material is hazardous according to regulatory guidelines (see (M)SDS Section 15).

GHS CLASSIFICATION:

Reproductive toxicant (fertility): Category 1B. Specific target organ toxicant (repeated exposure): Category 2.

Acute aquatic toxicant: Category 1. Chronic aquatic toxicant: Category 1.

GHS Label Elements:

Pictogram:



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Signal Word: Danger

Hazard Statements:

Health: H360: May damage fertility. H373: May cause damage to organs through prolonged or repeated exposure. Liver, Adrenal, Ovaries, Testes, Epididymides

Environmental: H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

Prevention: P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P260: Do not breathe mist / vapours. P273: Avoid release to the environment. P280: Wear protective gloves and clothing.

Response: P308 + P313: IF exposed or concerned: Get medical advice/ attention. P314: Get medical advice/attention if you feel unwell. P391: Collect spillage.

Storage: P405: Store locked up.

Disposal: P501: Dispose of contents and container in accordance with local regulations.

Contains: TRIXYLENYL PHOSPHATE

Other hazard information:

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No additional hazards.

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

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This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
PHENOL, DIMETHYL-, PHOSPHATE (3:1)	25155-23-1	> 99 %	H360(1B) (F), H373, H400 (M factor 10), H410 (M factor 1)
TRICRESYL PHOSPHATE	1330-78-5	0.1 - < 1%	H361 (F), H400 (M factor 1), H410 (M factor 1)

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

JAPANESE COMPOSITION INFORMATION

Industrial Safety and Health Law: Article 57, Chemical substances to be labelled: None.

Industrial Safety and Health Law: Article 57-2, Chemical substances to be notified: None.

ISHL Enforcement Order, Table 3-1, Manufacturing Permit Chemical Substances: None.

PRTR Class 1 Designated Chemical Substances: None.

PRTR Class 2 Designated Chemical Substances: None.

PDSCL Chemical Substances: None.

SECTION 4**FIRST AID MEASURES****INHALATION**

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

Seek immediate medical attention.

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NOTE TO PHYSICIAN

None

SECTION 5	FIRE FIGHTING MEASURES
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EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Water Spray, Fog, CO₂, dry chemical, or Alcohol Resistant Foam

Inappropriate Extinguishing Media: Straight Streams of Water or Regular Foam

FIRE FIGHTING

Fire Fighting Instructions: Move containers from fire area if you can do so without risk. Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Pressurized mists may form a flammable mixture.

Hazardous Combustion Products: Incomplete combustion products, Oxides of carbon, Phosphorus oxides, Smoke, Fume

FLAMMABILITY PROPERTIES

Flash Point [Method]: >250° C (482° F) [ASTM D-92]

Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D

Autoignition Temperature: 575° C (1067° F)

SECTION 6	ACCIDENTAL RELEASE MEASURES
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NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

PERSONAL PRECAUTIONS

Report spills as required to appropriate authorities. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of

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the emergency responders.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Do not touch or walk through spilled material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Warn other shipping. Material will sink. Remove material, as much as possible, using mechanical equipment.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Remove debris in path of spill prior to oiling and remove contaminated debris from shoreline and water surface and dispose of according to local regulations. Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7

HANDLING AND STORAGE

HANDLING

Avoid all personal contact. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics – Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The type of container used to store the material may affect static accumulation and dissipation. Store in a cool, dry place with adequate ventilation. Keep away from incompatible materials, open flames, and high temperatures. Do not store in open or unlabelled containers.

SECTION 8	EXPOSURE CONTROLS / PERSONAL PROTECTION
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Biological limits

No biological limits allocated.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Half-face filter respirator Particulate

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Chemical resistant gloves are recommended. If contact with forearms is likely wear gauntlet style gloves. Nitrile, Viton

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Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

Chemical/oil resistant clothing is recommended.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid

Color: Colorless

Odor: Characteristic

Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 20 ° C): 1.13

Flash Point [Method]: >250° C (482° F) [ASTM D-92]

Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D

Flammability (Solid, Gas): N/A

Autoignition Temperature: 575° C (1067° F)

Boiling Point / Range: > 300° C (572° F) [Estimated]

Vapor Density (Air = 1): N/D

Vapor Pressure: [N/D at 20 ° C] | 0.044 kPa (0.33 mm Hg) at 200° C [Estimated]

Evaporation Rate (n-butyl acetate = 1): N/D

pH: N/D

Log Pow (n-Octanol/Water Partition Coefficient): 5.63 [Estimated]

Solubility in Water: Negligible

Viscosity: 43.3 cSt (43.3 mm²/sec) at 40 ° C

Decomposition Temperature: N/D

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Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -20° C (-4° F)

SECTION 10	STABILITY AND REACTIVITY
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STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. Moisture., High energy sources of ignition.

MATERIALS TO AVOID: Strong Acids, Strong Bases, Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11	TOXICOLOGICAL INFORMATION
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ACUTE TOXICITY

<u>Route of Exposure</u>	<u>Conclusion / Remarks</u>
Inhalation	
Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.
Ingestion	
Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.

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OTHER HEALTH EFFECTS FROM SHORT AND LONG TERM EXPOSURE

Anticipated health effects from sub-chronic, chronic, respiratory or skin sensitization, mutagenicity, reproductive toxicity, carcinogenicity, target organ toxicity (single exposure or repeated exposure), aspiration toxicity and other effects based on human experience and/or experimental data.

For the product itself:

Contains:

An ingredient or ingredients that are classified as toxic to a specific target organ from a repeated exposure.

Trixylenyl Phosphate (TXP): Exposure to large amounts over a prolonged time may cause neurological effects. The potential for delayed peripheral neuropathy is very low and will be dependent on the level of ortho isomer.

Technical grade TCP (tricresylphosphate) may contain various aryl ortho-phosphate esters which after ingestion of high doses has been reported to cause cholinesterase inhibition and delayed neurotoxic effects, in both animals and humans, as well as reproductive effects in animals. These effects are predominately attributed to certain isomeric forms (ie. ortho isomers) and current grades of TCP in this ExxonMobil product have very low levels of the ortho-isomers. Neurotoxicity testing in hens, and reproductive toxicity tests in rodents of products with up to 3% TCP were without effect. Tricresyl phosphate (TCP). TCP (<9% ortho isomer) administered to rats by oral gavage in a one-generation reproduction/developmental toxicology study adversely affected both males and females. TCP-treated male rats had decreased sperm concentration and motility, abnormal sperm morphology and adverse histologic changes in the testes and epididymides. Adverse histologic changes were also observed in the ovaries of TCP-treated female rats. The percent of sperm-positive females littering was significantly reduced in the TCP-treatment groups with only one of twenty females in the high dose group delivering young. Developmental parameters were unaffected by TCP exposure. Impaired fertility and decreased sperm motility following TCP treatment have also been reported in a reproduction toxicity study in mice.

Trixylenyl phosphate (TXP). In a Combined Repeated Dose and Reproductive / Developmental Toxicity Screening Study (OECD 422) TXP administered by oral gavage to male and female rats adversely affected reproductive outcome in the mid- and high dose animals. Successful pregnancies occurred in 100% of control and low dose female rats, in only 18% of the mid-dose females, and in none (0%) of the high dose females, although the infertility was shown to be fully reversible within 4 weeks after exposure was discontinued, indicating that the reproductive effect was not permanent.

See Section 16 for a description of sources for reference data.

IARC Classification:

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = IARC 1

2 = IARC 2A

3 = IARC 2B

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SECTION 12	ECOLOGICAL INFORMATION
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The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Expected to be very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

MOBILITY

Material -- Low water solubility, expected to sink and migrate into the sediment. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Material -- Expected to be persistent.

BIOACCUMULATION POTENTIAL

Material -- Has the potential to bioaccumulate.

ECOLOGICAL DATA

Ecotoxicity

Test	Duration	Organism Type	Test Results
Aquatic - Acute Toxicity	48 hour(s)	Daphnia magna	EC50 0.06 mg/l
Aquatic - Acute Toxicity	96 hour(s)	Pimephales promelas	LC50 >1.12 mg/l
Aquatic - Acute Toxicity	72 hour(s)	Pseudokirchneriella subcapitata	EC50 >1.01 mg/l
Aquatic - Acute Toxicity	72 hour(s)	Pseudokirchneriella subcapitata	NOEC >1.01 mg/l

Persistence, Degradability and Bioaccumulation Potential

Media	Test Type	Duration	Test Results
Octanol-Water	Calculated		log Kow 5.63
Water	Ready Biodegradability	28 day(s)	Percent Degraded 0

See Section 16 for a description of sources for reference data.

SECTION 13	DISPOSAL CONSIDERATIONS
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DISPOSAL METHODS

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Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14

TRANSPORT INFORMATION

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)

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Trixylenyl Phosphate)

Hazard Class & Division: 9

EMS Number: F-A, S-F

UN Number: 3082

Packing Group: III

Marine Pollutant: Yes

Label(s): 9

Transport Document Name: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Trixylenyl Phosphate), 9, PG III, MARINE POLLUTANT

AIR (IATA)

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Trixylenyl Phosphate)

Hazard Class & Division: 9

UN Number: 3082

Product Name: MOBIL PYROTEC HFD 46

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Packing Group: III

Label(s) / Mark(s): 9, EHS

Transport Document Name: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N. O. S. (Trixylenyl Phosphate), 9, PG III

SECTION 15

REGULATORY INFORMATION

This material is considered hazardous according to the Classification of Chemicals based on Globally Harmonized System of Classification and Labelling of Chemicals (GHS) (JIS Z 7252-2014).

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, ENCS, IECSC, ISHL, KECI, PICCS, TCSI, TSCA

National Laws and Regulations:

Chemical Substances Control Law: Existing Chemicals

Fire Service Law: Combustible Liquids

Maritime Pollution Prevention Law: Regulated

Mariners Labour Safety and Health Regulation: Regulated

Poisonous and Deleterious Substances Control Law (PDSCCL): Not Regulated

Pollutant Release and Transfer Register (PRTR): Not Regulated

Sewage Water Law: Mineral oil (5mg/l max.)

Waste Treatment Law : Controlled Industrial Waste

Water Pollution Control Law: Effluent Regulation (5mg/l max.)

SECTION 16

OTHER INFORMATION

SOURCE OF REFERENCE MATERIAL: Sources of information used in preparing this SDS included one or more of the following: results from in house or supplier toxicology studies, CONCAWE Product Dossiers, publications from other trade associations, such as the EU Hydrocarbon Solvents REACH Consortium, U.S. HPV Program Robust Summaries, the EU IUCLID Data Base, U.S. NTP publications, and other sources, as appropriate.

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):

H360(1B) (F): May damage fertility; Repro Tox, Cat 1B (Fertility)

H361(F): Suspected of damaging fertility; Repro Tox, Cat 2 (Fertility)

H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2

H400: Very toxic to aquatic life; Acute Env Tox, Cat 1

H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Section 01: Company Contact Methods information was modified.

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Section 01: Company Mailing Address information was deleted.

Section 01: Company Mailing Address information was modified.

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MHC: 0, 0, 0, 0, 0, 1

PPEC: AV

DGN: 2009419XJP (1010574)
