

Product Name: MOBIL PYROTEC HFD 46B
Revision Date: 16 Sep 2019
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MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: MOBIL PYROTEC HFD 46B
Product Description: Aryl Phosphate
Product Code: 201560106032
Intended Use: Hydraulic fluid

COMPANY IDENTIFICATION

Manufacturer/Supplier: ExxonMobil Asia Pacific Pte. Ltd (Company No.: 196800312N)
1 Harbour Front Place
#06-00 Harbour Front Tower One 098633 Singapore

**24 Hour Health Emergency
Supplier General Contact** +1 703-253-4229/+1 703-527-3887
(65) 6885 8000/86-21-24076000

Supplier: EQUATOR COMPANY LIMITED
146 - 148 Khanh Hoi Street
Ward 6, District 4, Ho Chi Minh City
Vietnam
Supplier General Contact +84 8 3940 6411

Supplier: Nam Giang Commercial Service Co., Ltd)
202 Hoang Van Thu Street
Ward 9, Phu Nhuan District
Ho Chi Minh City Vietnam
Supplier General Contact +84 28 73024500

Supplier: PAN International Petroleum Joint Stock Company
53 Hoang Quoc Viet street
Nghia Do Ward, Cau Giay District
Hanoi Vietnam
Supplier General Contact +84 24 32123939

SECTION 2 HAZARDS IDENTIFICATION

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

CLASSIFICATION:

Acute aquatic toxicant: Category 2. Chronic aquatic toxicant: Category 2.

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LABEL:

Symbol:



Signal Word: No Signal Word

Hazard Statements:

Environmental: H411: Toxic to aquatic life with long lasting effects.

Precautionary Statements:

Prevention: P273: Avoid release to the environment.

Response: P391: Collect spillage.

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

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.

SECTION 3	COMPOSITION / INFORMATION ON INGREDIENTS
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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, ISOBUTYLENATED, PHOSPHATE (3:1) [TRIPHENYL PHOSPHATE >= 2.5 - < 25%]	68937-40-6	90 - < 100%	H401, H411

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

SECTION 4	FIRST AID MEASURES
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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. 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

First aid is normally not required. Seek medical attention if discomfort occurs.

NOTE TO PHYSICIAN

None

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use foam, dry chemical, or carbon dioxide (CO₂) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

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, Nitrogen oxides, 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: 565°C (1049°F)

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

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

PROTECTIVE MEASURES

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 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 contact with skin. 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**

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

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: Odorless
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 20 °C): 1.17
Flammability (Solid, Gas): N/A
Flash Point [Method]: 250°C (482°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: 565°C (1049°F)
Boiling Point / Range: 220°C (428°F) - 270°C (518°F) [Estimated]
Decomposition Temperature: >300°C (572°F)
Vapor Density (Air = 1): N/D
Vapor Pressure: [N/D at 20 °C] | 0.044 kPa (0.33 mm Hg) at 150°C [Estimated]
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/D
Log Pow (n-Octanol/Water Partition Coefficient): 4.85 [OECD 107]
Solubility in Water: Negligible
Viscosity: 41.1 cSt (41.1 mm²/sec) at 40 °C - 46 cSt (46 mm²/sec) at 40 °C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: <-30°C (-22°F)
Melting Point: N/A

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

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

MATERIALS TO AVOID: None

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

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

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Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: (Rat) 1 hour(s) LC50 > 2,000 mg/l (Vapor)	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 403
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	
Acute Toxicity (Rat): LD50 > 5,000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 401
Skin	
Acute Toxicity (Rabbit): LD50 > 2,000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 402
Skin Corrosion/Irritation: Data available.	Negligible irritation to skin at ambient temperatures. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 404
Eye	
Serious Eye Damage/Irritation: Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 405
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: Data available.	Not expected to be a skin sensitizer. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 429
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: Data available.	Not expected to be a germ cell mutagen. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 471 476 479
Carcinogenicity: No end point data for material.	Not expected to cause cancer.
Reproductive Toxicity: Data available.	Not expected to be a reproductive toxicant. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 414 421
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: Data available.	Not expected to cause organ damage from prolonged or repeated exposure. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 408 410 413

IARC Classification:

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

--REGULATORY LISTS SEARCHED--

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1 = IARC 1

2 = IARC 2A

3 = IARC 2B

SECTION 12	ECOLOGICAL INFORMATION
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The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

ECOTOXICITY

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

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Material -- Expected to be readily biodegradable.

BIOACCUMULATION POTENTIAL

Material -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

ECOLOGICAL DATA

Ecotoxicity

Test	Duration	Organism Type	Test Results
Aquatic - Acute Toxicity	48 hour(s)	Daphnia magna	EC50 3.9 mg/l: data for similar materials
Aquatic - Acute Toxicity	96 hour(s)	Oncorhynchus mykiss	LC50 3.4 mg/l: data for similar materials
Aquatic - Acute Toxicity	96 hour(s)	Pimephales promelas	LC50 42.3 mg/l: data for similar materials

Persistence, Degradability and Bioaccumulation Potential

Media	Test Type	Duration	Test Results
Octanol-Water	Calculated		log Kow 4.85

SECTION 13	DISPOSAL CONSIDERATIONS
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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.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue

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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
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LAND

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PHENOL, ISOBUTYLENATED, PHOSPHATE [TRIPHENYL PHOSPHATE $\geq 2.5 < 25\%$])
Hazard Class: 9
Hazchem Code: 3Z
UN Number: 3082
Packing Group: III
Label(s) / Mark(s): 9, EHS

SEA (IMDG)

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PHENOL, ISOBUTYLENATED, PHOSPHATE [TRIPHENYL PHOSPHATE $\geq 2.5 < 25\%$])
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 SUBSTANCE, LIQUID, N.O.S. (PHENOL, ISOBUTYLENATED, PHOSPHATE [TRIPHENYL PHOSPHATE $\geq 2.5 < 25\%$]), 9, PG III, MARINE POLLUTANT

AIR (IATA)

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (PHENOL, ISOBUTYLENATED, PHOSPHATE [TRIPHENYL PHOSPHATE $\geq 2.5 < 25\%$])
Hazard Class & Division: 9
UN Number: 3082
Packing Group: III
Label(s) / Mark(s): 9, EHS
Transport Document Name: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (PHENOL, ISOBUTYLENATED, PHOSPHATE [TRIPHENYL PHOSPHATE $\geq 2.5 < 25\%$]), 9, PG III

SECTION 15	REGULATORY INFORMATION
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This material is considered hazardous according to the Law on Chemicals.

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Listed or exempt from listing/notification on the following chemical inventories (May contain substance(s) subject to notification to the EPA Active TSCA inventory prior to import to USA):

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AICS, DSL, ENCS, IECSC, ISHL, KECI, PICCS, TCSI, TSCA

SECTION 16	OTHER INFORMATION
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N/D = Not determined, N/A = Not applicable

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

H401: Toxic to aquatic life; Acute Env Tox, Cat 2

H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

No revision information

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DGN: 7190807XVN (1028655)
