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## SAFETY DATA SHEET

<b>SECTION 1</b>	<b>PRODUCT AND COMPANY IDENTIFICATION</b>
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### PRODUCT

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

### COMPANY IDENTIFICATION

**Supplier:** ExxonMobil Hong Kong Limited  
Suite 2301-02&06-08, 23/F, Central Plaza  
18 Harbour Road  
Wanchai Hong Kong

**24 Hour Emergency Telephone** 800-968-793 / +1-703-527-3887  
**Supplier General Contact** (852) 2172 8300

**Supplier:** BRENNTAG CHEMICALS (HK) PTE LTD  
6/F, Epoch Industrial Building,  
8 Cheung Ho Street,  
Tsing Yi, NT Hong Kong

**Supplier General Contact** (852) 3590 3909/(852)3590 6306

<b>SECTION 2</b>	<b>HAZARDS IDENTIFICATION</b>
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This material is hazardous according to UN GHS Revision 4 Criteria. Classification includes all GHS hazard classes and all GHS hazard categories. For hazard categories with two cut-off/concentration limits, classification was based on the higher limit.

### CLASSIFICATION:

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

### LABEL:

**Symbol:**

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**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.

<b>SECTION 3</b>	<b>COMPOSITION / INFORMATION ON INGREDIENTS</b>
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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 $\geq$ 2.5 - < 25%]	68937-40-6	90 - < 100%	H401, H411

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

<b>SECTION 4</b>	<b>FIRST AID MEASURES</b>
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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.

<b>SECTION 5</b>	<b>FIRE FIGHTING MEASURES</b>
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#### EXTINGUISHING MEDIA

**Appropriate Extinguishing Media:** Use foam, dry chemical, or carbon dioxide (CO<sub>2</sub>) 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 run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters 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:** Pressurised mists may form a flammable mixture.

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

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## 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
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## NOTIFICATION PROCEDURES

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 so 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 so 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. Dispose of according to local regulations. Large Spills: Dyke far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7	HANDLING AND STORAGE
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## HANDLING

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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 earthing procedures. However, bonding and earthing 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.

<b>SECTION 8</b>
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<b>EXPOSURE CONTROLS / PERSONAL PROTECTION</b>
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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/vapour warning properties are poor, or if air purifying filter

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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
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**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

**Colour:** Colourless

**Odour:** Odourless

**Odour Threshold:** N/D

## IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

**Relative Density (at 20 C):** 1.17

**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:** 565 C (1049 F)

**Boiling Point / Range:** 220 C (428 F) - 270 C (518 F) [Estimated]

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**Vapour Density (Air = 1):** N/D  
**Vapour 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 mm<sup>2</sup>/sec) at 40 C - 46 cSt (46 mm<sup>2</sup>/sec) at 40 C  
**Freezing Point:** <-30 C (-22 F)  
**Melting Point:** N/A  
**Decomposition Temperature:** >300 C (572 F)  
**Oxidizing Properties:** See Hazards Identification Section.

#### OTHER INFORMATION

<b>SECTION 10</b>	<b>STABILITY AND REACTIVITY</b>
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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:** None

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

**POSSIBILITY OF HAZARDOUS REACTIONS:** Hazardous polymerization will not occur.

<b>SECTION 11</b>	<b>TOXICOLOGICAL INFORMATION</b>
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#### INFORMATION ON TOXICOLOGICAL EFFECTS

<u>Hazard Class</u>	<u>Conclusion / Remarks</u>
<b>Inhalation</b>	
Acute Toxicity: (Rat) 1 hour(s) LC50 > 2,000 mg/l (Vapour)	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 vapours, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.
<b>Ingestion</b>	
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
<b>Skin</b>	
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

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	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
<b>Eye</b>	
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
<b>Sensitisation</b>	
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
<b>Aspiration:</b> Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
<b>Germ Cell Mutagenicity:</b> 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
<b>Carcinogenicity:</b> No end point data for material.	Not expected to cause cancer.
<b>Reproductive Toxicity:</b> 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
<b>Lactation:</b> No end point data for material.	Not expected to cause harm to breast-fed children.
<b>Specific Target Organ Toxicity (STOT)</b>	
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--

1 = IARC 1

2 = IARC 2A

3 = IARC 2B

**SECTION 12**

**ECOLOGICAL INFORMATION**

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



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#### 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

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

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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.

<b>SECTION 14</b>	<b>TRANSPORT INFORMATION</b>
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**LAND (ADR)**

**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

Footnote: Not subject to the provisions of UN3082 Environmentally hazardous substances liquid, n.o.s., if shipped in quantities of 5 liters or less per single or inner combination packaging as per IMDG code 2.10.2.7.

**AIR (IATA)**

**Proper Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, 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

[Footnote: Not subject to the provisions of UN3082 Environmentally hazardous substances liquid, n.o.s., if shipped in quantities of 5 liters or less per single or inner combination packaging as per Special Provision A197.]

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<b>SECTION 15</b>	<b>REGULATORY INFORMATION</b>
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Material is hazardous according to UN GHS Revision 4 Criteria.

**REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS**

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

<b>SECTION 16</b>	<b>OTHER INFORMATION</b>
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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:**

BRENNTAG CHEMICALS (HK) PTE LTD: Section 01: Supplier Mailing Address information was modified.

GHS Environmental Symbol information was modified.

Section 01: Company Mailing Address information was modified.

Section 10: Conditions to Avoid information was modified.

Section 15: National Chemical Inventory Listing information was modified.

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DGN: 7190807XHK (1028655)

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