

Safety Data Sheet

PETRONAS HYDRAULIC FP 46

Revision Date 17/2/2017
Version 2



SECTION 1: IDENTIFICATION OF THE HAZARDOUS CHEMICAL AND OF THE SUPPLIER

1.1. PRODUCT IDENTIFIER

MIXTURE IDENTIFICATION:

TRADE NAME:

PETRONAS HYDRAULIC FP 46

1.2. RECOMMENDED USE OF THE CHEMICAL AND RESTRICTIONS ON USE

RECOMMENDED USE:

Phosphate Ester Hydraulic
Oil

USES ADVISED AGAINST:

This product should not be used for other purposes than those specified without the advice of an expert.

1.3. DETAILS OF THE SUPPLIER

COMPANY:

PETRONAS Lubricants International Sdn. Bhd. (485509-D)
Tower 1, PETRONAS Twin Towers
Kuala Lumpur City Centre
50088 Kuala Lumpur - MALAYSIA
Tel : +603 23014245 / 4253 / 4252

COMPETENT PERSON RESPONSIBLE FOR SAFETY DATA OF PRODUCT:

Information on the legislation compliance info-regulation.eu@pli-petronas.com (English)

1.4. EMERGENCY PHONE NUMBER

Poison Centre Malaysia 1800 888 099 (office hours).

SECTION 2: HAZARD IDENTIFICATION

2.1. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Reproductive toxicity	Category 1B
Specific target organ toxicity - repeated exposure	Category 2
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

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2.2. LABEL ELEMENTS



Signal Word: Danger

Hazard statements:

H360 May damage fertility.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/ fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P314 Get medical advice/ attention if you feel unwell.
P391 Collect spillage.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

SECTION 3: COMPOSITION & INFORMATION OF THE INGREDIENTS OF THE HAZARDOUS CHEMICAL

3.1. SUBSTANCES

N.A.

3.2. MIXTURES

Chemical name	CAS number	Percent by Weight
Trixylyl phosphate	25155-23-1	≥ 90 - ≤ 100
Tris(methylphenyl) phosphate	1330-78-5	≥ 0.1 - < 1

SECTION 4: FIRST-AID MEASURES

4.1. DESCRIPTION OF NECESSARY FIRST-AID MEASURES

IN CASE OF INHALATION:

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Move to fresh air.
Obtain medical attention.

IN CASE OF EYES CONTACT:

Rinse thoroughly with plenty of water, also under the eyelids.
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

IN CASE OF SKIN CONTACT:

Wash with soap and water. If skin irritation occurs, get medical attention.
Take off contaminated clothing and shoes immediately.
Wash off immediately with plenty of water for at least 15 minutes.
Wash off with soap and water.
If symptoms persist, call a physician.

IN CASE OF INGESTION:

If conscious, make the victim drink the following:
Drink 1 or 2 glasses of water.
Get medical attention immediately.

4.2. MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED

Symptoms : Toxic effects for reproduction
Treatment : The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Flash point: 250 °C (482 °F) Method: open cup
Lower explosion limit: Remarks: No data available
Upper explosion limit: Remarks: No data available

5.2 PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

Suitable extinguishing media: Carbon dioxide (CO₂), Alcohol-resistant foam, Dry sand ABC powder

Unsuitable extinguishing media: High volume water jet

Hazardous decomposition products: Carbon oxides, Oxides of phosphorus

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Use personal protective equipment.

6.2. ENVIRONMENTAL PRECAUTIONS

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Discharge into the environment must be avoided.
Do not contaminate water.
Do not flush into surface water or sanitary sewer system.

6.3. METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

Ventilate the area.
Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal in accordance with local or national regulations (see section 13).

SECTION 7: HANDLING AND STORAGE

7.1. PRECAUTIONS FOR SAFE HANDLING

Handle in accordance with good industrial hygiene and safety practice.
Wear personal protective equipment.
Keep away from fire, sparks and heated surfaces.
Avoid contact with skin, eyes and clothing.
Do not breathe vapours or spray mist.

7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Keep in a dry, cool and well-ventilated place.
Keep container tightly closed.
Protect from contamination.

7.3. OTHER DATA

Stable under recommended storage conditions.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1. ENGINEERING MEASURES

Maintain air concentrations below occupational exposure standards.
Handle only in a place equipped with local exhaust (or other appropriate exhaust).

8.2. INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT (PPE)

Respiratory protection:	When using this product at elevated temperatures, wear a respirator with a vapour filter (see section 8). Respirator with a vapour filter (EN 141)
Hand protection:	Solvent-resistant gloves (butyl-rubber), Nitrile rubber
Eye protection:	Safety goggles
Skin and body protection:	To protect against splashes from pouring: Chemical resistant apron/ Impervious clothing / Rubber or plastic boots

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

CHEMICAL-PHYSICAL PROPERTY	VALUE	METHOD
PHYSICAL STATE	LIQUID	
APPEARANCE AND COLOUR	VISCOUS	
ODOUR	NOT RELEVANT	
ODOUR THRESHOLD	NOT RELEVANT	
PH	N.A.	
MELTING POINT / FREEZING POINT	N.A.	
INITIAL BOILING POINT AND BOILING RANGE	>300 °C (572 °F)	(ASTM D1120)
FLASH POINT	250 °C	(ASTM D92)
EVAPORATION RATE	N.A.	
UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS	N.A.	
VAPOUR DENSITY	N.A.	
VAPOUR PRESSURE	0.440 HpA (44,000 mmHg) at 200°C	
DENSITY	1.130 – 1.153 G/CM3	(ASTM D4052)
SOLUBILITY IN WATER	INSOLUBLE	
SOLUBILITY IN OIL	N.A.	
PARTITION COEFFICIENT (N-OCTANOL/WATER)	Log Pow: > 6.20	
AUTO-IGNITION TEMPERATURE	575°C	
DECOMPOSITION TEMPERATURE	N.A.	
KINEMATIC VISCOSITY AT 40°C	41.4 – 46.0 cSt	ASTM D445
EXPLOSIVE PROPERTIES	N.A.	
OXIDIZING PROPERTIES	N.A.	
SOLID/GAS FLAMMABILITY	N.A.	

SECTION 10: STABILITY AND REACTIVITY

10.1. REACTIVITY

No data available

10.2. CHEMICAL STABILITY

Material is stable under recommended storage conditions

10.3. POSSIBILITY OF HAZARDOUS REACTIONS

Hazardous polymerization does not occur

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10.4. CONDITIONS TO AVOID

Do not expose to moisture contamination

10.5. INCOMPATIBLE MATERIALS

Strong oxidizing agents
Strong acids and strong bases

10.6. HAZARDOUS DECOMPOSITION PRODUCTS

Carbon oxides
Oxides of phosphorus
Thermal decomposition : > 300 °C

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Sensitization : Remarks: Not classified due to data which are conclusive although insufficient for classification.

11.2 STOT - repeated exposure

Assessment : May cause damage to organs through prolonged or repeated exposure.
Experiments have shown reproductive toxicity effects on laboratory animals.
Possible risk of impaired fertility

Components:

Trixylyl Phosphate 25155-23-1:	Acute oral toxicity LD50 Rat Dose: 14.750 mg/kg
:	Acute dermal toxicity LD50 Rabbit Dose: > 20.000 mg/kg
:	Acute inhalation toxicity LC50 Rat Dose: 5,28 mg/l
:	Skin irritation Rabbit Result: Mild skin irritation
:	Eye irritation Rabbit Result: No eye irritation

11.3 STOT - repeated exposure

Application Route: Oral Target Organs: Testes, Adrenal gland, female reproductive organs,
Liver Assessment: May cause damage to organs through prolonged or repeated exposure.

SECTION 12: ECOLOGICAL INFORMATION

BIODEGRADABILITY : Exposure time: 175 d
ca.25 %
BIOACCUMULATION : No data available

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ACUTE FISH TOXICITY : LC50
Species: Fish
Exposure time: 96 h

TOXICITY TO DAPHNIA AND
OTHER AQUATIC INVERTEBRATE : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Components:

Trixylyl Phosphate
25155-23-1 : Toxicity to fish:
LC50
Species: Pimephales promelas (fathead minnow)
Dose: 1,11 mg/l
Exposure time: 96 h
: Toxicity to fish:
LC50
Species: Oncorhynchus mykiss (rainbow trout)
Dose: 100 mg/l
Exposure time: 96 h
: Toxicity to daphnia and other aquatic invertebrates:
EC50
Species: Daphnia magna (Water flea)
Dose: 0,06 mg/l
Exposure time: 48 h
: Toxicity to daphnia and other aquatic invertebrates:
EC50
Species: Daphnia magna (Water flea)
Dose: 3,86 mg/l
Exposure time: 48 h
: Toxicity to algae:
Species: Scenedesmus capricornutum (fresh water algae)
Dose: > 1,01 mg/l
Exposure time: 96 h

Tris(methylphenyl) Phosphate : Toxicity to fish:
LC50
Species: Oncorhynchus mykiss (rainbow trout)
Dose: 0,75 mg/l
Exposure time: 96 h

Tris(methylphenyl) Phosphate : Toxicity to fish:
LC50
Species: Pimephales promelas (fathead minnow)
Dose: > 100 mg/l
Exposure time: 96 h
: Toxicity to fish:
LC50
Species: Oncorhynchus mykiss (rainbow trout)
Dose: 0,6 mg/l
Exposure time: 96 h
: Toxicity to daphnia and other aquatic invertebrates:
EC50

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Species: Daphnia magna (Water flea)
Dose: 0,146 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
: Toxicity to daphnia and other aquatic invertebrates:
EC50
Species: Daphnia magna (Water flea)
Dose: 0,27 mg/l
Exposure time: 48 h
: Toxicity to bacteria:
Respiration inhibition EC50
Species: activated sludge
Dose: > 100 mg/l
Exposure time: 3 h

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. DISPOSAL METHODS

Prevent contamination of soil, drains and surface waters. Do not discharge in sewers, tunnels or water courses. Dispose in accordance with local or national regulations via authorised person/licensed waste disposal contractor.

The used product is to be considered a waste to be classified in accordance to Environmental Quality (Scheduled Wastes) Regulations 2005 on wastes and related legislation.

Recover if possible. In so doing, comply with the local and national regulations currently in force.

13.2. CONTAMINATED PACKAGING

Dispose of as unused product.

Do not re-use empty containers.

SECTION 14: TRANSPORT INFORMATION

14.1. TRANSPORT INFORMATION

ADR

UN number : 3082

Description of the goods : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(trixyl phosphate, tris(methylphenyl) phosphate)

Class : 9

Packing group : III

Classification Code : M6

Hazard Identification Number : 90

Labels : 9

IATA

UN number : 3082

Description of the goods : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(trixyl phosphate, tris(methylphenyl) phosphate)

Class : 9

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Packing group : III
Labels : 9

14.2 INTERNATIONAL STANDARDS

IMDG

UN number : 3082

Description of the goods : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(trixyl phosphate, tris(methylphenyl) phosphate)

Class : 9

Packing group : III

Labels : 9

EmS Number 1 : F-A

EmS Number 2 : S-F

Marine pollutant : yes

(trixyl phosphate, tris(methylphenyl) phosphate)

14.3 CODE OF EMERGENCY

Domestic standard: In compliance with domestic law

Environmental hazards: Not regulated

14.4 SPECIAL PRECAUTIONS FOR USER

No special precautions

14.5 TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE

N.A.

SECTION 15: REGULATORY INFORMATION

15.1. SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS SPECIFIC FOR THE PRODUCT IN QUESTION

P.U. (A) 310/2013 Occupational Safety and Health (Classification, Labelling and Safety Data Sheets of Hazardous Chemicals)

ACT 514 Occupational Safety and Health Act 1994, Factories and Machinery Act 1974 and all following updates

P.U. (A) 131/2000 Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health)

P.U. (A) 294/2005 Regulation of the Environmental Quality (Scheduled Wastes) and all following updates ACT 127 of the Environmental Quality Act 1974

P.U. (A) 39/1996 of the Occupational Safety and Health (Control of Industrial Major Accident Hazards)

SECTION 16: OTHER INFORMATION

Sheet complies with the criteria of P.U. (A) 310/2013 (CLASS Regulation).

This document was prepared by a competent person who has received appropriate training.

This product must not be used in applications other than recommended without first seeking the advice of the Technical Department.

Date of preparation of the first SDS: 20/01/2017

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Date of revision of this SDS: 17/02/2017
This MSDS cancels and replaces any preceding release.

This product must be stored, handled and used according to correct industrial hygienic practices and in compliance with laws in force.

The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be considered as any guarantee of specific properties.

Key literature references and sources:
None

Caption about heading 3 and H-statements:

CODE	DESCRIPTION
H360	May damage fertility.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Legend to abbreviations and acronyms used in the safety data sheet:

ACGIH: American Conference of Governmental Industrial Hygienists
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
AND: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ATE: Acute Toxicity Estimate
BCF: Biological Concentration Factor
BEI: Biological Exposure Index
BOD: Biochemical Oxygen Demand
CAS: Chemical Abstracts Service (division of the American Chemical Society).
CAV: Poison Center
CE: European Community
CLP: Classification, Labeling, Packaging.
CMR: Carcinogenic, Mutagenic and Reprotoxic
COD: Chemical Oxygen Demand
COV: Volatile Organic Compound
CSA: Chemical Safety Assessment
CSR: Chemical Safety Report
DMEL: Derived Minimal Effect Level
DNEL: Derived No Effect Level.
DPD: Dangerous Preparations Directive
DSD: Dangerous Substances Directive
EC50: Half Maximal Effective Concentration

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ECHA: European Chemicals Agency
EINECS: European Inventory of Existing Commercial Chemical Substances.
ES: Exposure Scenario
GefStoffVO: Ordinance on Hazardous Substances, Germany.
GHS: Globally Harmonized System of Classification and Labeling of Chemicals.
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association.
IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
IC50: half maximal inhibitory concentration
ICAO: International Civil Aviation Organization.
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG: International Maritime Code for Dangerous Goods.
INCI: International Nomenclature of Cosmetic Ingredients.
IRCCS: Scientific Institute for Research, Hospitalization and Health Care
KAFH: Keep away from heat
KSt: Explosion coefficient.
LC50: Lethal concentration, for 50 percent of test population.
LD50: Lethal dose, for 50 percent of test population.
LDLo: Leathal Dose Low
N.A.: Not Applicable
N/A: Not Applicable
N/D: Not defined/ Not available
NA: Not available
NIOSH: National Institute for Occupational Safety and Health
NOAEL: No Observed Adverse Effect Level
OSHA: Occupational Safety and Health Administration.
PBT: Persistent, Bioaccumulative and Toxic
PGK: Packaging Instruction
PNEC: Predicted No Effect Concentration.
PSG: Passengers
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL: Short Term Exposure limit.
STOT: Specific Target Organ Toxicity.
TLV: Threshold Limiting Value.
TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).
vPvB: Very Persistent, Very Bioaccumulative.
WGK: German Water Hazard Class.