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SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

As of the revision date above, this (M)SDS meets the regulations in Philippines.

PRODUCT

Product Name: HYJET V
Product Description: Synthetic Base Stocks and Additives
Product Code: 201550303030, 430330-80
Intended Use: Aviation hydraulic fluid

COMPANY IDENTIFICATION

Supplier: MCKUPLER INC
Unit 2508, High Street South Corporate Plaza Tower 2
11th Avenue corner 26th Street, Bonifacio Global City
National Capital Region
Taguig City 1630 Philippines

24 Hour Health Emergency +63 917 794 2236
Chemtrec CCN Number CHEMTREC International (+1 703-527-3887) /Philippines
accessible (1-800-1-116-1020) / Manila accessible (+63)
632-395-3308

Supplier: MCKUPLER INC
Mobil Depot, Km. 7, C.P. Garcia Highway
Brgy. Cabantian, Buhangin District
Davao del Sur
Davao City 8000 Philippines

24 Hour Health Emergency +63 917 794 2236

Supplier: MCKUPLER INC
GAC Cebu, Warehouse Unit B3,
J. King Warehouse Complex Opao
Cebu
Mandaue City 6014 Philippines

24 Hour Health Emergency +63 917 794 2236

SECTION 2 HAZARDS IDENTIFICATION

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

CLASSIFICATION:

Acute oral toxicant: Category 4. Eye irritation: Category 2A. Reproductive toxicant (developmental): Category 2.

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Reproductive toxicant (fertility): Category 2. Specific target organ toxicant (repeated exposure): Category 2.
Acute aquatic toxicant: Category 3. Chronic aquatic toxicant: Category 1.

LABEL:

Symbol:



Signal Word: Warning

Hazard Statements:

Health: H302: Harmful if swallowed. H319: Causes serious eye irritation. H361: Suspected of damaging fertility or the unborn child. H373: May cause damage to organs through prolonged or repeated exposure.

Adrenal, Liver

Environmental: H402: Harmful to aquatic life. 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. P264: Wash skin thoroughly after handling.

P270: Do not eat, drink or smoke when using this product. P273: Avoid release to the environment. P280:

Wear protective gloves/protective clothing/eye protection/face protection.

Response: P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308 + P313: IF exposed or concerned: Get medical advice/attention.

P314: Get medical advice/attention if you feel unwell. P330: Rinse mouth. P337 + P313: If eye irritation persists: Get medical advice/attention. P391: Collect spillage.

Storage: P405: Store locked up.

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

Contains: BIS(2-HYDROXYETHYL) TALLOW AMINE; PHENOL, ISOPROPYLATED, PHOSPHATE (3:1) [TRIPHENYL PHOSPHATE > 5%]; TRIBUTYL PHOSPHATE

Other hazard information:

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. When heated, the vapors/fumes given off may cause respiratory tract irritation.

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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

This material is defined as a mixture.

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

Name	CAS#	Concentration*	GHS Hazard Codes
2,6-DI-TERT-BUTYL-P-CRESOL	128-37-0	0.1 - < 1%	H400(M factor 1), H410(M factor 1)
BIS(2-HYDROXYETHYL) TALLOW AMINE	61791-44-4	0.025 - < 0.1%	H290, H302, H314(1C), H400(M factor 10), H410(M factor 1)
PHENOL, ISOPROPYLATED, PHOSPHATE (3:1) [TRIPHENYL PHOSPHATE > 5%]	68937-41-7	10 - < 20%	H361(D), H361(F), H373, H401, H410(M factor 10)
TRIBUTYL PHOSPHATE	126-73-8	70 - < 80%	H302, H315, H402, H412

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

SECTION 4 FIRST AID MEASURES

INHALATION

Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device.

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 for at least 15 minutes. Get medical assistance.

INGESTION

Seek immediate medical attention. Do not induce vomiting.

NOTE TO PHYSICIAN

None

SECTION 5 FIRE FIGHTING MEASURES

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EXTINGUISHING MEDIA

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

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: 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: May generate irritating and harmful gases/vapors/fumes when burning. Pressurized mists may form a flammable mixture. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Nitrogen oxides, Phosphorus oxides, Smoke, Fume, Sulfur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: 160°C (320°F) - 175°C (347°F) [ASTM D-92]

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

Autoignition Temperature: 400°C (752°F)

SECTION 6

ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

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

PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the 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: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Prevent entry into waterways, sewer, basements or confined areas. Ventilate the area. Recover by pumping or with suitable absorbent. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

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

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consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

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. Avoid vapors from heated materials to prevent exposure to potentially toxic/irritating fumes. Prevent small spills and leakage to avoid slip hazard.

Static Accumulator: This material is not a static accumulator.

STORAGE

Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			Note	Source
2,6-DI-TERT-BUTYL-P-CRESOL	Inhalable fraction and vapor	TWA	2 mg/m3			ACGIH
TRIBUTYL PHOSPHATE		TWA	5 mg/m3			Philippines OELs
TRIBUTYL PHOSPHATE	Inhalable fraction and vapor	TWA	5 mg/m3			ACGIH

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:

Adequate ventilation should be provided so that exposure limits are not exceeded.

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:

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No protection is ordinarily required under normal conditions of use and with adequate ventilation.
Organic vapor, 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. Nitrile

Eye Protection: Chemical goggles 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
Form: Clear
Color: Violet
Odor: Sweet
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.993
Flammability (Solid, Gas): N/A
Flash Point [Method]: 160°C (320°F) - 175°C (347°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: 400°C (752°F)
Boiling Point / Range: 288°C (550°F)
Decomposition Temperature: N/D

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Vapor Density (Air = 1): N/D
Vapor Pressure: 0.067 kPa (0.5 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/D
Log Pow (n-Octanol/Water Partition Coefficient): N/D
Solubility in Water: Negligible
Viscosity: 10.1 cSt (10.1 mm²/sec) at 40 °C | 3.5 cSt (3.5 mm²/sec) at 100°C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -62°C (-80°F)

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat.

MATERIALS TO AVOID: 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

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute 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	
Acute Toxicity (Rat): LD50 1.348	Slightly toxic. Based on test data for the material. Test(s) equivalent or similar to OECD Guideline 401
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation (Rabbit): Data available.	Negligible irritation to skin at ambient temperatures. Based on test data for the material. Test(s) equivalent or similar to OECD Guideline 404
Eye	
Serious Eye Damage/Irritation (Rabbit): Data available.	Irritating and will injure eye tissue. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 405
Sensitization	
Respiratory Sensitization: No end point data	Not expected to be a respiratory sensitizer.

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for material.	
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Caused damage to fertility in laboratory animals, but the relevance to humans is uncertain. Caused damage to the fetus in laboratory animals, but the relevance to humans is uncertain. Based on assessment of the components.
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: No end point data for material.	Contains a substance that may cause damage to organs from prolonged or repeated exposure. Based on assessment of the components.

TOXICITY FOR SUBSTANCES

NAME	ACUTE TOXICITY
TRIBUTYL PHOSPHATE	Oral Lethality: LD50 1552 ml/kg (Rat)

OTHER INFORMATION

For the product itself:

Target Organs Repeated Exposure: Adrenal, Liver

Contains:

Tributyl phosphate (TBP): Studies in rats have shown an increased incidence of urinary bladder tumors following long-term feeding of TBP in the diet. No bladder tumors were observed in similar studies in mice. The relevance of these findings for humans is uncertain.

Isopropylphenyl phosphate (iPP). Reproductive / developmental toxicity screening studies in rats of products containing high concentrations of iPP adversely affected male and female reproductive performance with significant reductions in fertility and conception indices. Number of rat pups born and live litter size were decreased in groups exposed to the iPP-containing products, while pup mortality was increased.

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
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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.

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ECOTOXICITY

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

Material -- Expected to be harmful to aquatic organisms.

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

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

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

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PHENOL, ISOPROPYLATED, PHOSPHATE (3:1) [TRIPHENYL PHOSPHATE > 5%])

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, ISOPROPYLATED, PHOSPHATE (3:1) [TRIPHENYL PHOSPHATE > 5%])

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, ISOPROPYLATED, PHOSPHATE (3:1) [TRIPHENYL PHOSPHATE > 5%]), 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 IMDG code 2.10.2.7.

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AIR (IATA)

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (PHENOL, ISOPROPYLATED, PHOSPHATE (3:1) [TRIPHENYL PHOSPHATE > 5%])

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, ISOPROPYLATED, PHOSPHATE (3:1) [TRIPHENYL PHOSPHATE > 5%]), 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.]

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) under the Joint DTI-DENR-DA-DOF-DOH-DILG-DOLE-DOTC Administrative Order No. 01 Series of 2009 by ministries.

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Product is under Philippines PCL/CCO: Not Regulated

Ozone Depleting Substances (ODS) (Chemical Control Order, DENR Admin. Order No. 2013-25): Not Regulated

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

Special Cases:

Inventory	Status
KECI	Restrictions Apply

SECTION 16

OTHER INFORMATION

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

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

H290: May be corrosive to metals; Corrosive to Metals

H302: Harmful if swallowed; Acute Tox Oral, Cat 4

H314(1C): Causes severe skin burns and eye damage; Skin Corr/Irritation, Cat 1C

H315: Causes skin irritation; Skin Corr/Irritation, Cat 2

H361: Suspected of damaging fertility or the unborn child.; Repro Tox, Cat 2

H361(D): Suspected of damaging the unborn child; Repro Tox, Cat 2 (Develop)

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

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

H402: Harmful to aquatic life; Acute Env Tox, Cat 3

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

H412: Harmful to aquatic life with long lasting effects; Chronic Env Tox, Cat 3

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THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS: MCKUPLER INC: Section 01: Supplier Mailing Address information was modified.

Composition: Component Table information was modified.

GHS Environmental Classification information was modified.

GHS Environmental Hazards information was modified.

Section 02: GHS Contains for LABEL_GHS codes information was modified.

Section 11: Target Organ Toxicity - Repeat Conclusion information was modified.

Section 12: Ecological Information - Acute Aquatic Toxicity information was added.

Section 12: Ecological Information - Acute Aquatic Toxicity information was deleted.

Section 16: HCode Key information was modified.

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