SAFETY DATA SHEET

Safety Data Sheet in accordance with UN GHS Purple Book

CAP – SDS – 04 – Pyrolysis Fuel Oil (Rev.00) **ISSUED DATE : 09 Jan 2015**

SECTION-1. IDENTIFICATION

Product/Material	:	**Pyrolysis Fuel Oil (PFO)**
Recommended Use	:	Raw material use in industrial applications for chemical synthesis etc.
Manufacturer	:	**PT. CHANDRA ASRI PETROCHEMICAL Tbk (CAP)**
Head Office	:	Wisma Barito Pacific, Tower A, 7th floor, Jl. Letjend S. Parman, Kav.62-63. Jakarta 11410, Indonesia.
Plant	:	Jl Raya Anyer Km.123, Ciwandan, Cilegon 42447, Indonesia. Ph: 62-254-601501
Emergency contact (24 hrs)	:	GROUPSHEDIVISION@capcx.com, Ph: 62-254-601829, 601501 Ext 1232
Additional Information	:	GROUPRND@capcx.com, Ph: +62-254-601501 Ext 1869, 1616

SECTION-2. HAZARD IDENTIFICATION

GHS Classification	:	Flammable liquid: Category 1 | Acute aquatic toxicant: Category 2 | Chronic aquatic toxicant: Category 2 | Aspiration toxicant: Category 1 | Carcinogen: Category 1A | Target organ toxicant (repeated exposure): Category 1 | Eye irritation: Category 2A | Germ Cell Mutagen: Category 1B | Reproductive toxicant: Category 1B | Skin irritation: Category 2 | Target organ toxicant (central nervous system): Category 3 | Target organ toxicant: Category 3 | Acute oral toxicant: Category 4.
Hazard Statements	:	Highly flammable liquid and vapor | May be fatal if swallowed and enters airways | May be harmful in contact with skin | Causes skin irritation | May cause respiratory irritation, and drowsiness or dizziness | May cause genetic defects | May cause cancer | Suspected of damaging fertility or the unborn child | Causes damage to organs (Blood, Eyes, Auditory organs, Nervous system) through prolonged or repeated exposure | May cause damage to organs (Auditory organs) through prolonged or repeated exposure if inhaled | Toxic to aquatic life with long lasting effects.
Pictogram (Hazard Symbols)	:	
Signal Word	:	DANGER
Target Organ	:	Causes damage to organs through prolonged or repeated exposure.
Physical Hazards	:	Extremely flammable liquid and vapor.
Environmental Hazards	:	Toxic to aquatic life. Toxic to aquatic life with long lasting effects.
Health Hazards	:	May be fatal if swallowed and enters airways. Harmful if swallowed. May cause cancer. May cause genetic defects. May damage fertility or the unborn child. Causes serious eye irritation. Causes skin irritation. May cause drowsiness or dizziness. May cause respiratory irritation.
Precautionary Hazard	:	Obtain special instructions before use.
Prevention	:	Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces – No smoking.

Precautionary Hazard-Response	:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Take off contaminated clothing and wash before reuse. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician Wash with plenty of soap and water. Rinse mouth. Do NOT induce vomiting. IF exposed or concerned: Get medical advice/attention. Specific treatment (see Notes to Physician on this label). In case of fire: Use manufacturer/supplier or the competent authority to specify appropriate media for extinction. Collect spillage.
Precautionary Hazard-Storage	:	Store in a well-ventilated place. Keep cool. Store locked up.
Precautionary Hazard-Disposal	:	Dispose of contents/container in accordance with applicable local/ regional/ national/ international regulations.

SECTION-3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Identity	:	Pyrolysis Fuel Oil	CAS No : 64742-90-1
Common Name	:	PFO	
Concentration	:	> 99.1 % wt	Impurities : <0.9 % wt

SECTION-4. FIRST-AID MEASURES

Skin	:	To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse. Get medical attention if any symptoms develop.
Inhalation	:	Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue.
Eyes	:	Flush eyes with running water immediately while holding the eyelids open. Remove contact lenses, if worn, after initial flushing, and continue flushing for at least 15 minutes. Get immediate medical attention.
Ingestion	:	If swallowed, do not induce vomiting. Give the person a glass of water or milk to drink and get immediate medical attention. Never give anything by mouth to an unconscious person.
Note to Physician	:	Ingestion of this product or subsequent vomiting may result in aspiration of light hydrocarbon liquid, which may cause pneumonitis.

SECTION-5. FIRE-FIGHTING MEASURES

Flammable Properties	:	Combustible when heated. Danger of violent reaction or explosion. Vapors may travel considerable far distances and cause subsequent ignition. Do not empty into drains. When burning, it emits toxic and irritant fumes. Containers with the substance exposed to excessive heat may explode.

Extinguishing Media

Suitable Extinguishing Media	:	Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable Extinguishing Media	:	Do not use water jet.

Specific Hazards in Case of Fire

Hazardous Combustion Products	:	The vapor is heavier than air, spreads along the ground and distant ignition is possible. Will float and can be reignited on surface water. Carbon monoxide may be evolved in incomplete combustion occurs.

Special Protective Equipment and Precaution for Fire Fighter

Special Protective Equipment	:	Wear full protective clothing and self-contained breathing apparatus
Precautions for Fire- Fighter	:	Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

SECTION-6. ACCIDENTAL RELEASE MEASURES

Protective Measures	:	Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator. Wear appropriate personal protective equipment when cleaning up spills.
Spill Management	:	Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible sorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

SECTION-7. HANDLING AND STORAGE

Precautions for Safe Handling	:	Special slow load procedures for switch loading must be followed to avoid the static ignition hazard that can exist when this material is loaded into tanks previously containing gasoline or other low flash point products. Keep containers closed and away from heat and ignition source, Empty containers retain some liquid and vapor residues and hazard precautions must be observed when handling empty containers.
Storage	:	Keep containers tightly closed when not in use and store in a well-ventilated area. Isolate incompatible materials such as oxidizers. Containers should be clearly labeled. Do not enter storage area unless adequately ventilated. Metal containers involved in the transfer of this material should be grounded and bonded.

SECTION-8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Considerations:

Consider the potential hazards of this material, applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited timer or under certain circumstances.

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT: Eye/Face Protection: Wear eye protection such as safety glasses, chemical goggles, or face-shields if engineering controls or work practices are not adequate to prevent eye contact.

Skin Protection: Wear impervious protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Users should determine acceptable performance characteristics of protective clothing. Consider physical requirements and other substances present when

selecting protective clothing. Suggested materials for protective gloves include: Silver Shield, or 4H (PE/EVA), or Teflon, or Viton.

Respiratory Protection: If exposure is anticipated to be greater than applicable exposure limits, wear a NIOSH approved respirator that provides adequate protection from measured concentrations of this material, such as: Supplied-Air Respirator, or Air-Purifying Respirator for Organic Vapors, or Self-contained breathing apparatus (SCBA) for use in environments with unknown concentrations or emergency situations. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Mineral Oil Mist	ACGIH	5 mg/m^3
	OSHA PEL	5 mg/m^3
Chemical Safety Report		
Derived No Effect Levels (DNEL)		NA
Predicted No Effect Concentration (PNEC)		NA

SECTION-9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State and Appearance	Liquid	Solubility (water)	Neglected
Color	Dark brown-Black	Evaporation Rate	NA
Odor	Oil-like	Vapor Pressure	NA
Odor Threshold	NA	Viscosity	NA
pH	NA	Partition Coefficient Octanol/Water Log Pow)	NA
Boiling Point/Boiling Range	180^OC – 290^OC	Relative Vapor Density (air=1)	1.05 at 15^OC
Auto-ignition	NA	Additional Physical and Chemical properties	NA
Lower Flammable (explosion) Limit	NA	Melting Point Flash Point	NA $<75^OC$
Upper Flammable (explosion) Limit	NA		

SECTION-10. STABILITY AND REACTIVITY

Chemical Stability	:	This product is stable under ambient pressure and temperature.
Incompatibility With Other Materials	:	May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc. Corrosive to copper and copper bearing alloys
Conditions to Avoid	:	Sources of ignition, static electricity, high temperature, sun radiation
Substances to Avoid	:	Strong oxidizing agents, strong acids
Hazardous Decomposition Products	:	Thermal decomposition: CO, CO_2.

SECTION-11. TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS:

Acute Toxicity	: Substance is irritating to skin. Vapors are irritating to eyes, skin and respiratory system, may cause nausea, emesis, drowsiness and dizziness. Possible narcotic effects
Acute Dermal Toxicity	: LD50 / rat / > 2,300 mg/kg
Repeated Dose Toxicity	: After long-term or repeated exposure skin diseases, skin cancer, eye damage, liver and erythrocytes damage may develop.
Carcinogenicity	: ACGIH - A3 - Confirmed animal carcinogen with unknown relevance to humans | OSHA - / IARC - Group 2B - The mixture is possibly carcinogenic to humans Carcinogenicity | NTP - Reasonably suspected to be Human Carcinogens.
Mutagenic effects	: Not a known mutagen

Teratogenic effects : Not a known mutagen

Special Remarks on Other Toxic Effects on Humans:

Substance is irritating to skin. Vapors are irritating to eyes, skin and respiratory system, may cause nausea, emesis, drowsiness and dizziness.

SECTION-12. ECOLOGICAL INFORMATION

Eco toxicity	:	48 h /EC50 / Daphnia magna) / 1.2 – 2.7 mg/l
Mobility	:	Persists under anaerobic conditions
Air		Contains volatile components. The volatile components oxidize rapidly by photochemical reactions in air.
Soil		If it enters soil, it will adsorb to soil particles and will not be mobile. Large volumes may penetrate soil and could contaminate groundwater.
Water		Partly evaporates from water or soil surfaces, but a significant proportion will remain after one day.
Bioaccumulation		Contains components which may have the potential to bioaccumulate. May cause tainting of fish and shellfish
Biodegradation		Major components are inherently biodegradable.
Environmental Adverse Effects		Product is largely insoluble in water, and has low to moderate volatility based on its components. Product will exhibit a moderate order of toxicity. Product is sticky and will adhere to soil, sediment and plants, birds and water mammals.

SECTION-13. DISPOSAL CONSIDERATIONS

Waste disposal

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or local regulations. Measurement of certain physical properties and analysis for regulated component may be necessary to make a correct determination. If this material is classified as a hazardous waste, Kementrian Lingkungan Hidup Republic Indonesia requires disposal at a licensed hazardous waste disposal.

Maximize product recovery for reuse or recycling, if spill is introduced into a wastewater system the chemical and biological oxygen demand will likely increase, spill material is biodegradable if gradually exposed to microorganisms, potential disposal methods include incineration and land disposal if permitted.

SECTION-14. TRANSPORT INFORMATION

UN Number	3256	
UN Proper Shipping name	Pyrolysis Fuel Oil	
Transport Hazard Class	Road (ADR)/Rail (RID)/Water (ADNR)	3 (Flammable liquid)
	IMDG class (Marine Transport)	3 (Flammable liquid)
	ICAO/IATA class (Air Transport)	3 (Flammable liquid)
Packing Group	III	
Marine Pollutant	Yes	

SECTION-15. REGULATORY INFORMATION

Regulatory Information : PERMENLH RI No. 3 Year 2008: Tata Cara Pemberian Simbol dan Label Bahan Berbahaya dan Beracun.
PERMENPERIN RI No. 87/M-IND/PER/9/2009: Sistem Harmonisasi Global Klasifikasi dan Label pada Bahan kimia.
KEPMENAKER 187/Men/1999 Pengendalian Bahan Kimia Berbahaya

SECTION-16. OTHER INFORMATION

Training Advice : Personnel handling the product need to be demonstrably with its hazardous

		properties, with health and environmental protection principles related to the product and first aid principles
Recommended Uses	:	THE PRODUCT IS RESTRICTED TO PROFESSIONAL USAGE. Ensure all national/local regulations are observed. Ensure operators understand the flammability hazard. The hazard of asphyxiation is often overlooked and must be stressed during operator training. Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted. Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose.

NFPA Hazard Rating for PFO

NFPA Code 	Health-2	Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury
	Flammability-3	Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions
	Reactivity-0	Normally stable, even under fire exposure conditions, and is not reactive with water

Abbreviations that may have been used in this document:

ACGIH	:	American Conference of Governmental Industrial Hygienist
ADNR	:	European Agreement concerning the Int'l Carriage of Dangerous Goods by inland Waterways
ADR	:	European Agreement concerning the Int'l Carriage of Dangerous Goods by Road
CAS	:	Chemical Abstract Service
EPA	:	Environmental Protection Agency
EU	:	European Union
IATA	:	International Air Transport Association
ICAO	:	International Civil Aviation Organization
IMDG	:	International Maritime Dangerous Goods
IMO	:	International Maritime Organization
LC50	:	Lethal Concentration, concentration of chemical which kills 50% of a sample population
LD50	:	Lethal Dose, dose of a chemical which kills 50% of a sample population
NFPA	:	National Fire Protection Association
NTP	:	National Toxicology Program
PSHA	:	Occupational Safety and Health Administration
RID	:	International Rule for Transportation of Dangerous Substance by Railway
TLV	:	Threshold Limit Value
TWA	:	Time Weighted Averages

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