



Spend Less, Drive More

Whitepaper

A Palm Oil-Based Fuel Additive for Enhanced
Combustion, Emission Reduction, and Fuel Economy

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01

Executive Summary

JimatFuel is an environmentally friendly fuel additive derived primarily from palm oil. Developed by: the late Dr. Wong Khai Ming, the product is designed to improve combustion efficiency, increase engine power, reduce fuel consumption, and lower harmful emissions. It is suitable for both petrol and diesel engines that uses Internal Combustion Engine (ICE).

Independent laboratory tests and field trials indicate measurable reductions in fuel usage (e.g., 14.81% in a marine test) and confirm the absence of heavy metals such as lead, chromium, manganese, and cadmium.



02

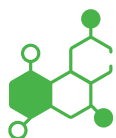
Product Overview

Attribute	Description
Product Name	JimatFuel
Also Known As	Fuel Additive
Base Ingredient	Palm oil
Applications	Petrol (carburettor & fuel injection), diesel engines, marine vessels
Key Function	Breaks down fuel molecules and hydrogen bonds to enable more complete combustion (up to 98% efficiency)
Safety Features	Non-inflammable, contains no solvents, kerosene, or diesel fuel; no heavy metals detected

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Technical Function & Mechanism

Conventional fuel combustion typically utilizes only 70–75% of fuel, with the remainder released as soot, smoke, or unburned hydrocarbons. When **JimatFuel** is added at the recommended ratio:



It breaks fuel molecules into smaller particles



Increases surface area exposure to oxygen



Enables more complete combustion (up to 98% efficiency)

Results include:



Higher energy output per unit of fuel



Reduced exhaust emissions



Cleaner engine components (injectors, spark plugs, fuel pumps)

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Laboratory Analysis (Certified)

Future X Asia PLT had engaged SGS laboratory, an ISO/IEC 17025 accredited laboratory (SAMM No. 629) to evaluate the composition of JimatFuel (fuel additive) and its effect on gasoline octane rating. Laboratory test results are shown in the appendix. The following is the summary of results obtained.

Fatty Acid Composition (selected):

Component	Percentage (%)
Palmitic Acid (C16:0)	37.4
Oleic Acid (C18:1)	44.8
Linoleic Acid (C18:2)	11.4
Stearic Acid (C18:0)	4.0

Note: Composition is consistent with vegetable oil/fat profiles.

Test Parameter	Results
Water Content	0.067% (m/m)
Acid Value	5.59 mg KOH/g
Kinematic Viscosity at 40°C	41.48 mm ² /s
Lead (Pb)	Not detected
Chromium	Not detected
Manganese	Not detected
Cadmium (Cd)	Not detected

Effect of JimatFuel on Research Octane Number (RON)

JimatFuel was further evaluated based on the Research Octane Number (RON) test parameter by testing Petrol (RON95) with and without the addition of JimatFuel. The following is the summary results obtained for test parameter Research Octane Number (RON) for Petrol (RON 95) and Petrol (RON 95) treated with JimatFuel:

Source: SGS Analytical Report: PK26-00343.002 & PK26-00343.003

Test Parameter	Results	
	Petrol (RON95)	Petrol (RON95) + JimatFuel
Research Octane Number (RON)	95.3	96.2

The untreated RON95 petrol recorded a Research Octane Number (RON) of 95.3, while the RON95 petrol treated with JimatFuel recorded a RON of 96.2.

A higher RON reading demonstrated in the treated petrol sample shows that JimatFuel will induce a better anti-knock quality to the base petrol. This will contribute to smoother engine operation and improved combustion performance in engines designed (Internal Combustion Engine) to benefit from higher octane fuels.

Conclusion

The laboratory test results show that JimatFuel contains mainly fatty acid methyl esters and successfully increased the gasoline Research Octane Number from 95.3 to 96.2.

JimatFuel also exhibited no metal contaminants, indicating good product quality for both petrol and diesel engine based on the laboratory analyses.

Analytical Report: PK26-00297.001 Reissue: 2

**** This Amended Report cancels and supersedes the Report No. PK26-00297.001 Dated 04/08/2026 issued by SGS.**

Date: 05/08/2026

FUTURE X ASIA PLT
SUITE #203, GF-16
THE WATERFRONT@PARKCITY
NO.5 PERSIARAN RESIDEN
DESA PARK CITY
52200 KUALA LUMPUR

The results shown in this test report specifically refer to the sample(s) tested as received unless otherwise stated. All tests have been performed using the latest revision of the methods indicated, unless specifically marked otherwise on the report. Precision parameters apply in the determination of the below results. Users of analytical results, when establishing conformance with commercial or regulatory requirements should note the full provisions of ASTM D3244, IP 367 and ISO 4259 in that context, the default confidence level of petroleum testing having been set at the 95% confidence level. Your attention is specifically drawn to Sections 7.3.6., 7.3.7 and 7.3.8 of ASTM D3244. With respect to the UOP methods listed in the report below the user is referred to the method and the statement within it specifying that the precision statements were determined using UOP Method 999. This Test Report is issued under the Company's General Conditions of Service (copy available upon request or on the company website at www.sgs.com). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. This report shall not be reproduced except in full, without the written approval of the laboratory.

This laboratory is accredited under ISO/IEC 17025. The results reported herein have been performed in accordance with the laboratory's term of accreditation except calibrations/tests marked with an asterisk (*) in this report which are not accredited.

LOCATION :	Client Location	PRODUCT DESCRIPTION :	Biodiesel
SAMPLE SOURCE :	As Supplied		
SAMPLE TYPE :	As submitted		
SAMPLED :	--	RECEIVED :	18/06/2026
ANALYSED :	22/06/2026 - 05/08/2026	COMPLETED :	05/08/2026

The laboratory analysis for the Sub-Contract Laboratory tests are provided by:

S1 - Subcontracted to another SGS - ISO 17025 Laboratory

PROPERTY	METHOD	RESULT UNITS	
Water Content by Coulometric KF *	EN ISO 12937	0.067 % (m/m)	
Acid Value *	EN 14104	5.59 mg KOH/g	#
Kinematic Viscosity and calc. of Dynamic Viscosity *	EN ISO 3104		
Kinematic Viscosity at 40 °C *		41.48 mm ² /s	
S1 - Phosphorus Content *	EN 14107	8.0 mg/kg	
S1 - Calcium Content *	EN 14538	<0.3 mg/kg	
S1 - Magnesium Content *	EN 14538	<0.3 mg/kg	
S1 - Group II Metals Content (Calcium and Magnesium) *	EN 14538	<0.5 mg/kg	
S1 - Potassium Content *	EN 14538	<0.6 mg/kg	
S1 - Sodium Content *	EN 14538	2.0 mg/kg	
Elements in Used Lube Oils and Base Oils by ICP-AES	ASTM D5185		
Aluminium		0.60 mg/kg	#
Barium		< 0.1 mg/kg	#
Boron		9.0 mg/kg	
Chromium		< 0.1 mg/kg	#
Copper		< 0.1 mg/kg	#
Iron		< 0.1 mg/kg	#
Lead		< 0.1 mg/kg	#
Manganese		< 0.1 mg/kg	#
Molybdenum		< 0.1 mg/kg	#
Nickel		< 0.1 mg/kg	#
Silver		< 0.1 mg/kg	#
Antimony §		< 0.1 mg/kg	

§ - Analyte not in published method scope

- Result is outside of test method limits and/or analytical range used in method precision study

AUTHORISED SIGNATORY



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Section Head - L/3548/10515/24

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KHAIRUL AZIEMI A AZIZ
Chemist - M/6561/10516/24

Analytical Report: PK26-00297.001 Reissue: 2

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LOCATION :	Client Location	PRODUCT DESCRIPTION :	Biodiesel
SAMPLE SOURCE :	As Supplied		
SAMPLE TYPE :	As submitted		
SAMPLED :	--	RECEIVED :	18/06/2026
ANALYSED :	22/06/2026 - 05/08/2026	COMPLETED :	05/08/2026
The laboratory analysis for the Sub-Contract Laboratory tests are provided by: S1 - Subcontracted to another SGS - ISO 17025 Laboratory			

PROPERTY	METHOD	RESULT UNITS	
Tin		< 0.1 mg/kg	#
Vanadium		< 0.1 mg/kg	#
Zinc		< 0.1 mg/kg	#
Cadmium §		< 0.1 mg/kg	
----- End of Analytical Results -----			

§ - Analyte not in published method scope

- Result is outside of test method limits and/or analytical range used in method precision study

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Analytical Report: PK26-00343.001

Date: 31/07/2026
 FUTURE X
 AMANDARI CONDOMINIUM
 BLOCK B-1-17, JALAN 30/38A
 TAMAN SRI BINTANG
 51200 K.LUMPUR

The results shown in this test report specifically refer to the sample(s) tested as received unless otherwise stated. All tests have been performed using the latest revision of the methods indicated, unless specifically marked otherwise on the report. Precision parameters apply in the determination of the below results. Users of analytical results, when establishing conformance with commercial or regulatory requirements should note the full provisions of ASTM D3244, IP 367 and ISO 4259 in that context, the default confidence level of petroleum testing having been set at the 95% confidence level. Your attention is specifically drawn to Sections 7.3.6., 7.3.7 and 7.3.8 of ASTM D3244. With respect to the UOP methods listed in the report below the user is referred to the method and the statement within it specifying that the precision statements were determined using UOP Method 999. This Test Report is issued under the Company's General Conditions of Service (copy available upon request or on the company website at www.sgs.com). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. This report shall not be reproduced except in full, without the written approval of the laboratory.

LOCATION :	Client Location	PRODUCT DESCRIPTION :	ADDITIVES
SAMPLE SOURCE :	As Supplied		
SAMPLE TYPE :	As submitted		
SAMPLED :	--	RECEIVED :	23/07/2026
ANALYSED :	31/07/2026	COMPLETED :	31/07/2026
The laboratory analysis for the Sub-Contract Laboratory tests are provided by: S1 - Subcontracted to another SGS - ISO 17025 Laboratory			

PROPERTY	METHOD	RESULT	UNITS
S1 - Gas Chromatography of Fatty Acid Methyl Esters	ISO 12966-4		
C08:0		0.0	%
C10:0		0.0	%
C12:0		0.2	%
C14:0		0.9	%
C16:0		37.4	%
C16:1		0.2	%
C18:0		4.0	%
C18:1		44.8	%
C18:2		11.4	%
C18:3		0.2	%

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Analytical Report: PK26-00343.002

Date: 31/07/2026

FUTURE X
AMANDARI CONDOMINIUM
BLOCK B-1-17, JALAN 30/38A
TAMAN SRI BINTANG
51200 K.LUMPUR

LOCATION :	Client Location	PRODUCT DESCRIPTION :	Gasoline
SAMPLE SOURCE :	As Supplied		
SAMPLE TYPE :	As submitted		
SAMPLED :	--	RECEIVED :	23/07/2026
ANALYSED :	31/07/2026	COMPLETED :	31/07/2026
The laboratory analysis for the Sub-Contract Laboratory tests are provided by: S1 - Subcontracted to another SGS - ISO 17025 Laboratory			

PROPERTY	METHOD	RESULT UNITS	MIN	MAX
S1 - Research Octane Number of Spark-Ignition Engine Fuel	ASTM D2699			
Research Octane Number		95.3 Rating	--	--

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Analytical Report: PK26-00343.003

Date: 31/07/2026
 FUTURE X
 AMANDARI CONDOMINIUM
 BLOCK B-1-17, JALAN 30/38A
 TAMAN SRI BINTANG
 51200 K.LUMPUR

LOCATION :	Client Location	PRODUCT DESCRIPTION :	Gasoline - PETROL+ADDITIVE
SAMPLE SOURCE :	As Supplied		
SAMPLE TYPE :	As submitted		
SAMPLED :	--	RECEIVED :	23/07/2026
ANALYSED :	31/07/2026	COMPLETED :	31/07/2026

The laboratory analysis for the Sub-Contract Laboratory tests are provided by:
 S1 - Subcontracted to another SGS - ISO 17025 Laboratory

PROPERTY	METHOD	RESULT UNITS	MIN	MAX
S1 - Research Octane Number of Spark-Ignition Engine Fuel	ASTM D2699			
Research Octane Number		96.2 Rating	--	--
----- End of Analytical Results -----				

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05

Field Test Results – Marine Vessel

Vessel: Pulau Rawa (RO-RO/Passenger ship)

Fuel Capacity: 14,250 liters

Test Duration: 5 round trips before and after additive use

Condition	Average Load (kg/trip)	Fuel Consumption (liters)
Without Additive	327,985	3,188
With JimatFuel (17kg)	317,561	2,716

Conclusion:

Fuel consumption reduced by **14.81%** despite comparable load weights.



06

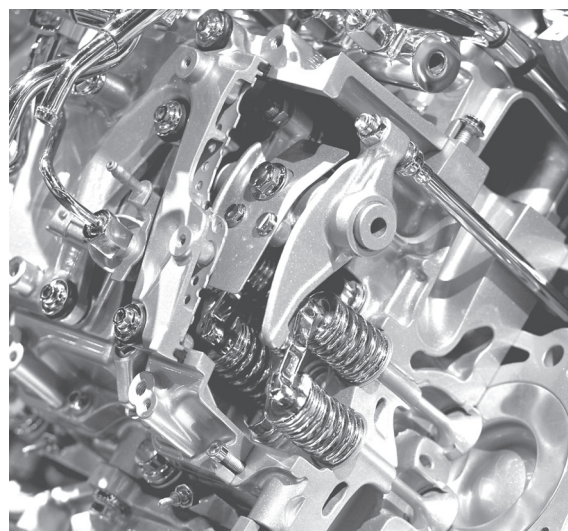
Claimed Benefits by Engine Type

For Petrol (Carburetor & Fuel Injection):

- Improved fuel economy through more efficient combustion
- Increased engine power (lab reference: 100 km/h → 120 km/h equivalent performance)
- Cleans injectors, spark plugs, and carburetors
- Extends engine lifespan
- Reduces engine temperature and noise
- Easier cold starting
- Environmentally friendly
- Non-inflammable

For Diesel Engines (Additional Benefits):

- Reduces black smoke emissions
- Lowers CO, HC, hydrogen sulfate, and NOx emissions
- Cleans fuel pump and delivery system



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Usage Directions

JimatFuel is safe for All Petrol and Diesel Engine and or All Internal Combustion Engine (ICE).

Initial Treatment: Add 2 tablets directly into the fuel tank before refueling during first use to help clean and condition the fuel system

Maintenance Dose: Before refueling, add 1 tablets (5g) per 50 liters of fuel

Note: For Marine Vessel, we suggest to use JimatFuel Liquid type which are more appropriate for vessel's bunker.

JimatFuel Usage Guidelines:

JimatFuel Pellets	Liquid (ml)	Diesel/Petrol Vehicle Per Liter
1 (5 gram)	100	50
JimatFuel Liquid	Liquid (ml)	Diesel/Petrol Vehicle Per Liter
1 liter	1000	500
5 liters	5000	2500
10 liters	10,000	5000
JimatFuel Liquid	Diesel (Liter)	For Marine Vessel
60 liter	30,000	25 Metric Tonnes

For Diesel: If using Pellets and NOT Liquid - For JimatFuel effectiveness, must allow 3-5 hours for dissolvment

08

Awards & Recognition

Year	Award / Recognition
1997	Bronze Medal – MINDEX/INNOTEX (Fuel Additive Energy Oil)
1998	Gold Medal – 26th International Exhibition of Inventions, Geneva
1998	Malaysia Book of Records (First Palm Oil-Based Fuel Additive)
1998	Gold Medal – Malaysia New Invention (Ministry of Science)
1998/99	Chivas Regal – Malaysia Achievement Unlimited Award
1999	Silver Medal – 27th International Exhibition of Inventions, Geneva Certificate of Acknowledgment – Ministry of Science, Technology & Environment (Malaysia)

09

Safety & Environmental Profile

- Heavy Metals: None detected
- Flammability: Non-inflammable
- Solvents/Kerosene/Diesel: None
- Biodegradability: Palm oil-based and environmentally friendly
- Engine Safety: Tested for all engine types; no adverse effects reported

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Supports

The manufacturer supported by SIRIM Test Report No. MA970121, which demonstrated:

- CO reduction: 27.2%
- Hydrocarbon reduction: 15.1%
- Simultaneous increase in horsepower and fuel efficiency

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Conclusion

JimatFuel is a scientifically formulated, award-winning, palm oil-based fuel additive that demonstrates measurable improvements in combustion efficiency, fuel economy, and emission reduction. Independent laboratory tests confirm the absence of toxic heavy metals, while field trials (such as the 14.81% fuel savings in marine applications) support its effectiveness.

It provides a practical and environmentally responsible solution for both petrol and diesel engines without requiring modifications to existing fuel systems.



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