EL505. Two-cycle Engine Oil

[EL505-1993/5/2005-68]

1. Scope

The criteria shall apply to the two-cycle engine oil for internal combustion engine (hereinafter referred to as "engine oil") used for the two-cycle engine which is equipped in ship or motorcycle.

2. Definitions

2.1

“Water-fueled internal-combustion” refers to combustion engines used in waters, including rivers and seas, such as outboard motor, water vehicles and so forth.

2.2

“Outboard motor” refers to a propeller making the body of the internal combustion engine, propulsion system and course change device in a unitary form, and integrating the same outside the hull.

2.3

“Biodegradability” refers to the numerical valuation of the level that organic compounds are discomposed by microbes.

2.4

“Easily biodegradable” refers to cases in which biodegradation for each applied biodegradation test method meets any of the following conditions.

Bio-degradation Test Method	Culture Days	Degradation
KS M ISO 9439	28 days	60% or more
KS M ISO 14593	28 days	60% or more

Bio-degradation Test Method	Culture Days	Degradation
OECD 301 B	28 days	60% or more
OECD 301 C	28 days	60% or more

ASTM D 5864	28 days	60% or more	OECD 301 D	28 days	60% or more
ASTM D 6731	28 days	60% or more	OECD 301 F	28 days	60% or more
CEC-L-33-T-82	21 days	80% or more			

2.5

“Sulfated ash content” refers to the remaining substance measured after heating carbonic substance generated in burning engine oil with sulfuric acid.

3. Certification Criteria

3.1 Environmental Criteria

3.1.1

At the stage of use, in regard to the emission of air pollution or resource consumption, engine oil for motorcycles should meet the following standards.

3.1.1.1

Sulfated ash content shall be less than 0.15 weight%.

3.1.1.2

The sulfur content shall be less than 0.3 weight%.

3.1.1.3

Lubricity shall be 95 or more.

3.1.1.4

The initial torque shall be 98 or more.

3.1.1.5

Cleanliness shall be 95 or more.

3.1.1.6

Exhaust emissions shall be 85 or more.

3.1.1.7

The obstructive of the exhaust system shall be 90 or more.

3.1.2

At the stage of use, in regard to the emission of water pollution, engine oil for water combustion shall be easily biodegradable.

3.2 Quality Criteria

3.2.1

With respect to engine oil for motorcycles, the Flash point, viscosity, viscosity index, pour point, total alkali value (TBN) and oxidation stability shall satisfy the quality standards of “first level for land” of KS M 2121 (Internal combustion engine oils).

3.2.2

Flash point, kinematic viscosity, viscosity index, pour point, sulfated ash and oxidation stability of engine oil for marine shall satisfy the quality criteria of lubricating oil for two-cycle gasoline engine in accordance with Oil Business Act.

3.3 Information for Consumers

3.3.1

Indication on what the product contributes to the reasons for certification (less air pollutants or well discomposed in nature) at the use and disposal stage.

3.3.2

Attentions for treatment

4. Test Methods

Certification Criteria			Test and Verification Methods
Environmental Criteria	3.1.1	3.1.1.1	Test report by an accredited testing laboratory in accordance with KS M ISO 3987 (Petroleum products-Lubrication oil and additives-Determination of sulfated ash)

		3.1.1.2	Test report by an accredited testing laboratory in accordance with KS M 2027 (crude oil and petroleum products - test methods of sulfated ash)
		3.1.1.3 ~3.1.1.4	Test report by an accredited testing laboratory in accordance with the JASO M 340(Two-stroke cycle gasoline engine - Engine oils - Lubricity test procedure) or certificate of equivalent
		3.1.1.5	Test report by an accredited testing laboratory in accordance with the JASO M 341(Two-stroke cycle gasoline engine - Engine oils - Detergency test procedure) or certificate of equivalent
		3.1.1.6	Test report by an accredited testing laboratory in accordance with the JASO M 342(Two-stroke cycle gasoline engine - Engine oils - Smoke test procedure) or certificate of equivalent
		3.1.1.7	Test report by an accredited testing laboratory in accordance with the JASO M 343(Two-stroke cycle gasoline engine - Engine oils - Exhaust system blocking test procedure) or certificate of equivalent
	3.1.2		Test report by an accredited testing laboratory in accordance with KS M ISO 9439, KS M ISO 14593, OECD 301B, OECD 301 C, OECD 301D, OECD 301F, ASTM D 5864, ASTM D 6731 or CEC-L-33-T-82(note1, note2)
Quality Criteria			Test report by an accredited testing laboratory in accordance with KS M 2121 (lubricating oil for internal combustion engine or certificate of equivalent
Consumer Information			Verification of submitted documents

Note1) When verification to meet the standards will be executed with a test report made by International accredited testing agencies, according to the review of the Eco-label certification review committee, it can be considered as satisfying 3.1.1.3 to 7 or 3.1.2 of the standards related to the environment. However, if a test report or a certificate defined by the Eco-label certification review committee is requested, it cannot be accepted.

Note2) Related specifications

*KS M ISO 9439: Water quality - Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium (Carbon dioxide evolution test).

*KS M ISO 14593: Water quality - Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium Method by analysis of inorganic carbons in sealed vessels (CO_2 headspace test)

- OECD 301B: CO_2 Evolution test
- OECD 301C : Modified MITI test
- OECD 301D : Closed bottle test
- OECD 301F : Monometric respiration test
- ASTM D 5864 : Standard test method for determining aerobic aquatic biodegradation of lubricants to their components
- ASTM D 6731 : Standard test method for determining the aerobic biodegradability of lubricants or lubricant components in closed respirometer
- CEC-L-33-T-82 : biodegradability of two-stroke cycle engine oil in aqueous medium

4.1 General Matters

4.1.1

One test sample shall be required for each applied product. However, if more than one test sample is needed, the former requirement may not be met.

4.1.2

Test samples shall be collected at random by a certification institute from products in market or those in storage at the production site.

4.1.3

The result of test shall be numerically set according to the KS Q 5002 (Statistical interpretation method of the data – Part 1: Statistical description of the data).

5. Reasons for Certification

5.1

Engine oil for motorcycle: “Less air pollutants”

5.2

Engine oil for marine: “Readily degradable in the environment”

Common Criteria, Notice No. 2012-36, the Ministry of Environment

1. Eco-label products must follow the following provisions with regard to the proper treatment of environmental pollution substances, such as air and water wastes and noxious chemical substances emitted in the process of manufacturing or service operation.

A. When first applying for certification, the product manufacturer should observe the environment related laws and agreements pertaining to the region where the production factory or the place of service operation is located for a period of one year prior to the date of application. Any case of violation of the penalty clause will be verified by confirming documents involved during a period of one year to the date of application. Regarding any violation not related to the penalty clause, confirmation will be made on the completion of appropriate measures.

B. A person who has received a certification of eco-labeling shall observe the environment related laws and agreements pertaining to the region where the production factory or the place of service operation is located during the period of certification. However, regarding any violation besides a penalty, confirmation will be made on the completion of appropriate measures.

2. As a general rule, information for consumers shall be indicated on the surface of the product in such a way not to be easily erased. However, in case that indication on the surface of the product is impossible or undesirable, it can be indicated on the appropriate part such as product packaging, product guidebook and user's manual that consumers can recognize. However, the service information should be indicated inside and outside of the place of service operation. In case that indication inside and outside of the place of service operation is impossible or undesirable, it can be indicated on the appropriate part such as an agreement, letter of delivery, letter of guarantee, and PR materials that consumers can recognize.

3. In order to establish fair trade and to protect consumer, the applicant for eco-label and the holder of eco-label license shall observe the Act on the Fairness of

Indication and Advertisement with respect to the environmental aspects of the product.

4. For Various standards referred in the certification criteria by target product, the latest revised edition applies at the date of application, if not specified otherwise.

5. In applying the quality related criteria for each target product, if no standard is available that can be applied as the quality criteria, the president of Korea Environmental Industry & Technology Institute (KEITI) (hereafter referred to as "president of KEITI") may establish and operate the quality criteria for the product involved after review by a competent committee.