



**Green Label Product
Vehicles
(TGL-33-R2-17)**

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TGL-33-R2-17

Vehicles

Revised by Technical Subcommittee no. 33

Thai Green Label Scheme

1. Introduction

Automobiles largely depend on non-renewable energy sources, fuel, for running its engine, which causes environmental impacts. The internal combustion engine of vehicles while running generates various kinds of air pollutants such as carbon monoxide, hydrocarbon, nitrogen oxide, black smoke including particulate matter.

Furthermore, at the end of the vehicles' life-cycle, the product undergoes shredding, which generates automobile shredder residue (ARS) such as parts, lubricant, batteries and tires. Although some of these materials can be recycled, it depends on the manufacturer to have a recycling plan or management for these wastes. Otherwise, these wastes will accumulate in the long term at the same rate as automobile production, which will result in enormous environmental impacts.

Therefore, the Green Label for vehicles focuses on reducing air emissions and noise emission as well as promoting recycling of vehicles' components/parts in order to avoid environmental impacts from its use and disposal. In addition, the Green Label encourages sustainable resource consumption.

2. Scope

These criteria are applied to the vehicles including a passenger car (type M1) and a light truck (type N1).

3. Definition

3.1 Passenger car (M1) refers to the vehicles having four – wheels with designed for passenger seating not more than 8 seats (excluding driver's seat).

3.2 Light trucks (N1) refers to the vehicles having four- wheels the designed for the transport of goods and having a maximum mass not exceeding 3,500 kg, including also vehicles having cabin and cargo space in the same section as described in appendix 1.

3.3 Global Warming Potential (GWP) refers to potential of greenhouse gas cause of global warming. It is calculated based on the radiation efficiency and lifetime of gas in the atmosphere comparing with radiation of carbon dioxide.

3.4 Ozone Depletion Potential (ODP) refers to potential of chemical substance causes of ozone layer depletion in the atmosphere. It is the comparison ratio of chemical substance and CFC-11 that affect on ozone layer.

4. General requirements

- 4.1 The product shall be certified according to the Thai Industrial Standard for Safety: Pollutants from the Engine, declared effective at that time

Compliance Verification

The applicant shall declare a license for manufacturing or import license according to Thai Industrial Standard specified in general requirement 4.1

- 4.2 The product shall comply with Car Actor Land Transportation Act declared effective at that time.

Compliance Verification

The applicant shall submit evidence or declaration letter from the Department of Land Transport that the product meets the entire requirement and can be registered.

- 4.3 The manufacturer shall be accredited the quality management system ISO 9001 or ISO/TS 16949 or IATF 16949 or other equivalent standards.

Compliance Verification

The applicant shall declare evidence that the manufacturer has been certified ISO 9001 or ISO/TS 16949 or IATF 16949 or other equivalent standards.

- 4.4 Manufacturing, transportation, and post-industrial waste disposal shall comply with the national laws and regulations and the manufacturer shall be accredited by ISO 14001¹

Verification Method

The applicant shall submit the following documents:

1. License or evidence to prove that manufacturing, transportation, and post-industrial waste disposal comply with national laws and regulations.
2. Certification of ISO 14001 from the manufacturer.

5. Environment requirement

- 5.1 Paints used in manufacturing process shall not contain the following substances;

- 5.1.1 The heavy metal or compound of heavy metal such as cadmium, mercury, lead and hexavalent chromium as impurities and contamination shall comply with the following table.

¹ ISO 14001: Environmental Management System.

Table 1

Metals	Cd	Pb	Hg	Cr^{6+*}
Content (mg/kg)	≤100	≤1000	≤1000	≤1000

NOTE: * 1) the content of total chromium (Cr) has less than or equivalent 1000 mg/kg assume that hexavalent chromium not excess requirement.

2) mg/kg = ppm

Compliance Verification

The applicant shall submit a test report for paints used in the product according to the following standards:

- 1) For cadmium, test method under ISO 3856-4 or ASTM D 3335 or USEPA 3052 or IEC62321 or other equivalent test methods
- 2) For mercury, test method under ISO 3856-7 or ASTM D 3624 or USEPA 3052 or IEC62321 or other equivalent test methods
- 3) For lead, test method under ISO 3856-1 or ASTM D 3335 or USEPA 3052 or IEC62321 or other equivalent test methods
- 4) For hexavalent chromium, test method under ISO3856-5 or USEPA 3060A & 7196A or IEC62321 or other equivalent test methods

5.1.2 The component of arsenic, antimony, triphenyl tins (TPT), tributyl tins (TBT) and tributyltin oxide (TBTO).

Compliance Verification

The applicant shall submit a declaration letter to ensure that paints used in product doesn't have a component of substance as requirement 5.1.2

5.2 Lead used as component of aluminum part in manufacturing shall not exceed 0.4 percent (4000 mg/kg) by weight of homogeneous material.

NOTE: 1) mg/kg = ppm

Compliance Verification

The applicant shall submit a declaration letter to ensure that an aluminum used in product a contain of lead as requirement 5.2

5.3 Automotive brake and clutch shall not contain asbestos fiber.

Compliance Verification

The applicant shall submit a declaration letter to ensure that brake and clutch are not contained asbestos fiber as requirement 5.3

- 5.4 Refrigerant used in air conditioning system shall have an Ozone Depletion Potential (ODP) equal to zero and global warming potential (GWP) shall not exceed 1,800 kg CO₂e (GWP 100).

Compliance Verification

The applicant shall submit a declaration letter that refrigerant used in air condition meets requirement 5.4

- 5.5 The exist manual for vehicle maintenance and guidelines for maintaining the pollution control equipment shall be in Thai language, and can be separated into individual documents.

Compliance Verification

The applicant shall declare a manual for vehicle maintenance and guidelines for maintaining the pollution control equipment, which meet requirement 5.5.

- 5.6 Shall have the guideline for management of waste or post-consumer waste materials such as lubricant, brake fluid, coolant, lubricant filter, fuel filter, battery, battery for hybrid, which can be separated into individual documents.

Compliance Verification

The applicant shall declare a guideline for management of waste or post-consumer waste materials that meet requirement 5.6.

- 5.7 Elastomeric parts and materials that are weighing more than 200 g, except tires, shall be marked according to ISO 1629.

Compliance Verification

The applicant shall submit a declaration letter to ensure that elastomeric part and material are marked or symbolized by type as requirement 5.7. Moreover, other evidences such as a picture of those marked parts shall be submitted.

- 5.8 The plastic parts of product shall comply with the following requirements.

- 5.8.1 The heavy metal or compound of heavy metal such as cadmium, mercury, lead and hexavalent chromium as impurities and contamination shall comply with the following table.

Table 2

Metals	Cd	Pb	Hg	Cr ^{6+*}
Content (mg/kg)	≤100	≤1000	≤1000	≤1000

NOTE: * 1) the content of total chromium (Cr) has less than or equivalent 1000 mg/kg assume that hexavalent chromium not excess requirement.

2) mg/kg = ppm

Compliance Verification

The applicant shall submit an evidence to ensure that hazardous substances in plastic parts meet requirement 5.8.1

5.8.2 Plastic parts weighing more than 100 g shall be symbolized according to Thai Industrial Standard, TIS 1310 for recycling plastics or be marked according to plastic symbols and abbreviated terms given in ISO 1043 or ISO 11469.

Compliance Verification

The applicant shall submit a declaration letter to ensure that plastic parts meet requirement 5.8.2. Moreover, other evidence such as picture or sample of symbolized plastic part shall be submitted.

5.9 The noise emission from moving vehicle shall comply with UN Regulation No.51-02 or UN Regulation No.51-02 upwards.

Compliance Verification

The applicant shall submit a test report for noise emission from vehicles as requirement 5.9. Test method shall be in accordance with EU Directive 70/157/EEC or UN ECE Regulation No. 51 or TIS 2264.

5.10 Carbon dioxide emission shall comply with the threshold level specified in Table 3.

Table 3 Carbon dioxide emission for vehicles.

Curb Mass (Kg)	Gasoline engine or spark ignition (g/Kg)	Diesel engine or ignition combustion engine with compressed air (g/Kg)
0 < CM ≤ 750	100	100
750 < CM ≤ 865		
865 < CM ≤ 980	120	120
980 < CM ≤ 1,090	130	130
1,090 < CM ≤ 1,205	140	140
1,205 < CM ≤ 1,320	150	150
1,320 < CM ≤ 1,430	160	160
1,430 < CM ≤ 1,540	170	170
1,540 < CM ≤ 1,660	180	180
1,660 < CM ≤ 1,770	190	190
1,770 < CM ≤ 1,880	200	200
1,880 < CM ≤ 2,000	210	210
2,000 < CM ≤ 2,110	220	220
2,110 < CM ≤ 2,280	230	230
2,280 < CM ≤ 2,510	240	230
2510 < CM	240	230

Compliance Verification

The applicant shall declare a test report for carbon dioxide emission as requirement 5.10. Test method shall be in accordance with UN R101 or EU Directive 70/220/EEC and other editions.

6. Testing and certification

6.1 Testing

6.1.1 Laboratory

6.1.1.1 The laboratory shall be operated by the government or under governmental control as defined by clause 5 of the Industrial Standard Act B.E. 2511 (and its addenda) or certified by TIS 17025² or ISO 17025³.

6.1.1.2 Be an inspecting agency or conformity of production to the approval types under the 1958 United Nations Economic Commission for Europe's Agreement Concerning the Adoption of Uniform Technical Prescriptions for Wheel Vehicles, Equipment and Parts which can be fitted and/or be used on wheeled vehicles. Test results shall comply with testing methods defined in this document.

6.1.2 Result of the tests

6.1.2.1 If "comparable test methods" are submitted, the following documents shall be submitted with the test results:

- (1) Declaration letter from the laboratory verifying that the test methods are comparable to the methods defined in this document.
- (2) Method validation documents which enable unequivocal scientific verification that the testing methods and requirements defined in this document have been met.

6.1.2.2 Test results shall valid on the application submitted date not older than 1 year.

Except Results of the type approval tests as requirements 5.9 and 5.10 are not required for the valid dates.

6.2 Declaration letter to verify compliance with Green Label requirements

6.2.2 Shall have been issued no more than 1 year following the application date.

6.2.3 Shall be signed by the authorized directors and have the company seal affixed (if relevant).

²TIS 17025 General Requirements for the Competence of Testing and Calibration Laboratories.

³ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories.