Labelling information for motor vehicles powered by electric motors or alternative fuel systems

Purpose
This Vehicle Standards Information sheet No. 63 (VSI.63) is intended to advise owners and operators of motor vehicles powered by electric motors or alternative fuel systems of the requirements for labels to be affixed to their number plates.

The requirements for these labels as outlined in this VSI are made under NSW transport legislation for each light and heavy motor vehicle, powered by the following motive power systems or hybrid vehicles using these technologies:

- Electric powered vehicles
- LPG (Liquefied Petroleum Gas) powered vehicles
- NG (Natural Gas, Compressed Natural Gas & Liquefied Natural Gas) powered vehicles
- Hydrogen powered vehicles

Introduction
NSW transport legislation makes vehicle standards for light and heavy vehicles used on NSW roads.

For light vehicles (vehicles with a GVM or ATM of 4.5 tonnes or less), vehicle standards are made by the Road Transport (Vehicle Registration) Regulation 2017 under:

**Schedule 2 Light Vehicle Standards Rules.**

For heavy vehicles (vehicles with a GVM or ATM exceeding 4.5 tonnes), vehicle standards are made by the Heavy Vehicle (Vehicle Standards) National Regulation (NSW) under:

**Schedule 1 Vehicle standards relating to ADRs applying to single heavy vehicles, &**

**Schedule 2 Other vehicle standards applying to single heavy vehicles.**
Current standards applicable to these vehicles

For LPG and CNG powered vehicles the following adopted standards apply:

- **AS/NZS 1425:2013** *LP Gas fuel systems for vehicle engines* is the current adopted standard for motor vehicles equipped with LPG or Autogas system installations.

- **AS/NZS 2739:2009** *Natural Gas (NG) fuel systems for vehicle engines* is the current adopted standard for those vehicles with NG, LNG & CNG system installations.

Both adopted standards require a label to be affixed to a 1.0mm thick metal plate that is attached to a vehicle’s front and rear registration number plates.

**NOTE:** An ‘adopted standard’ is an Australian or Australian/New Zealand Standards that is adopted as a national standards under the Australian Design Rules (ADRs) or under the relevant transport legislation.

Currently there are no standards for hydrogen-powered vehicles or for electric vehicles (apart from those relating to high voltage batteries and wiring).

NSW legislation specifies that:

1. each light and heavy vehicle powered or partially powered (ie a duel fuelled vehicle) by LPG or CNG, and
2. each light vehicle powered or partially powered by:
   - hydrogen fuel, or
   - one or more electric motors (including hybrids); and
3. each heavy vehicle built or modified on or after 1 January 2019 so as to be powered or partially powered by:
   - hydrogen fuel, or
   - one or more electric motors (including hybrids)

Must have affixed to each of its number plates, a warning label meeting the specifications outlined in this VSI.

Colours of each respective number plate label

The background retroreflective colours are specified for the mandatory number plate labels under **AS/NZS 1425** and **AS/NZS 2739** must comply with the specifications for the photometric properties of Class 100 retroreflective sheeting made under:

- **AS/NZS 1906.1:2017** *Retroreflective Materials and Devices for Road Traffic Control Purposes—Retroreflective Sheeting.*

**NOTE:** These labelling requirements also apply to hybrid vehicles (eg a vehicle with an electric motor and a conventional petrol-fuelled engine; a vehicle with an engine operating on petrol & LPG, etc).

Each label must be affixed to a number plate

Each vehicle powered by an electric motor or by Hydrogen, LPG or CNG fuel must have a durable label, with a 1.0mm thick metal backing plate, that is permanently attached (ie by suitable mechanical fasteners such as screws or rivets, etc) to the vehicle’s number plates.

The shape of each metal-backed warning label will vary depending on the fuel type used and if it’s an electric vehicle.
This mandatory requirement applies to each LPG & CNG fuel system installed or re-certified from **1 October 1999** and to each electric, hybrid or hydrogen powered vehicle. This requirement was introduced to assist and allow emergency services personnel to quickly identify these vehicles and their respective power source in the event of a vehicle fire.

**NOTE:** a licensed gas fitter must re-certify LPG, CNG & Hydrogen fuel systems if a fuel line is disconnected or a system component is repaired/replaced and each time a fuel container is replaced &/or re-tested.

### LPG-powered vehicles

For a vehicle powered by LPG or a hybrid LPG vehicle (ie a vehicle partially powered by LPG), each number plate must have affixed a durable label that displays the characters ‘LPG’ in white capital letters at least 10.0mm high on a retroreflective red square shaped background with 25.0mm sides that is mounted to each number plate as a diamond.

**NOTE:** LPG used as an alternative fuel for internal combustion engines is also referred to as Autogas.

Each label shall have a 1.0mm thick metal square-shaped metal backing plate that is permanently attached (ie by suitable mechanical fasteners) to the vehicle’s front and its rear number plates.

**FIGURE 1** Example of number plate label for **LPG-powered vehicle**:

![LPG Label Example](https://example.com/lpg_label.png)

- White block letters at least 10.0 mm high
- 1.0mm thick metal-backed label square shaped with 25mm sides & attached to the number plate as a diamond

### Natural gas-powered vehicles

For a vehicle powered by natural gas (NG) or a hybrid NG vehicle (ie partially powered by NG), each number plate must have affixed a durable label that displays the character ‘CNG’ in white capital letters at least 10.0mm high on a retroreflective red background.

Each label shall have a 1.0mm thick round metal backing plate that is permanently attached (ie by suitable mechanical fasteners) to the vehicle’s front and its rear number plates.

**FIGURE 2** Example of number plate label for **CNG-powered vehicle**:

![CNG Label Example](https://example.com/cng_label.png)

- White block letters at least 10.0 mm high
- 1.0mm metal-backed circular label with a diameter of at least 35mm
**Electric vehicles**

For an electric vehicle or a hybrid electric vehicle (ie partially electrically powered), each number plate must have affixed a durable label that displays the characters ‘**EV**’ in white capital letters at least 8.0mm high on a retroreflective blue triangular shaped background with 35.0mm sides and included angles of 60°.

Each label shall have a 1.0mm thick triangular-shaped metal backing plate that is permanently attached (ie by suitable mechanical fasteners) to the vehicle’s front and its rear number plates.

**FIGURE 3**  Example of number plate label for **electric-powered vehicle**:

![Example of label for electric-powered vehicle](image)

- White block letters at least 8.0 mm high
- 1.0mm thick metal backed label triangular shaped with 35mm sides

**Hydrogen-powered vehicles**

In the case of a hydrogen-powered vehicle (and a hybrid) each number plate must have affixed a durable label that displays the character ‘**H**’ in a black capital letter that is at least 10.0mm high on a retroreflective yellow pentagon shaped background with 25.0mm sides.

Each label shall have a 1.0mm thick pentagon-shaped metal backing plate that is permanently attached (ie by suitable mechanical fasteners) to the vehicle’s front and its rear number plates.

**FIGURE 4**  Example of number plate label for **hydrogen-powered vehicle**:

![Example of label for hydrogen-powered vehicle](image)

- Black block letter at least 10.0 mm high
- 1.0mm thick metal-backed label pentagon shaped with 25mm sides
Further information

Please contact the National Heavy Vehicle Regulator (NHVR) on 1300 696 487 for advice or if you have any enquiries related to vehicle standards or modification requirements for a heavy vehicle.

Additional information on heavy vehicle standards is also available at:

Transport for NSW (TfNSW) Technical Enquiries Unit
www.roads-maritime.transport.nsw.gov.au | Tel. 1300 137 302 or 13 22 13
Email: technical.enquiries@transport.nsw.gov.au

TfNSW Vehicle Standards & Investigations Unit
Email: vs&c@transport.nsw.gov.au

National Heavy Vehicle Regulator (NHVR)
www.nhvr.gov.au | Tel. 13 22 13
Email: info@nhvr.gov.au or vehiclestandards@nhvr.gov.au

Department of Infrastructure and Regional Development (NHVR)
/infrastructure.gov.au/vehicles | Tel. 1800 075 001 or 02 6274 7444