



Unleaded petrol FACT SHEET

State Pollution Control Commission

157 Liverpool Street, Sydney 2000

(02) 265 8888

1 Summary of legal requirements under the NSW Clean Air Act

In New South Wales the unleaded petrol programme is being implemented under the provisions of the NSW Clean Air Act and Regulations.

Parallel but not necessarily identical requirements are being implemented in the other states and the territories, through specific legislation in some cases and through the Australian Design Rules in others.

Under the Clean Air Act and its Regulations, the main features of the programme are as follows:

- Unleaded petrol with a research octane number (RON) of 91 to 93 and a motor octane number not less than 82 will have to be available at all retail petrol outlets in New South Wales by no later than 1 July 1985.
- This unleaded petrol will not be permitted to contain more than 0.013 grams of lead per litre, compared with the current regulation limit of 0.40 g/L in leaded petrol sold in Sydney, Newcastle and Wollongong and the oil-industry standard of 0.84 g/L that currently applies elsewhere in the State.¹ The maximum phosphorus and sulfur contents of unleaded petrol will also be prescribed.

- "Super"-grade leaded petrol, with the higher octane number of 97 RON, will continue to be available for use in those pre-1986 vehicles unable to run satisfactorily on unleaded fuel with a RON of 91 to 93.
- All petrol-engined motor vehicles manufactured on or after 1 January 1986 will have to be designed so that they will operate satisfactorily, without abnormal engine "knock", on 91-93 RON unleaded petrol.²
- Unleaded petrol only will be allowed to be used in petrol-engined motor vehicles manufactured on or after 1 January 1986. It will be an offence to use leaded petrol in these vehicles, or in any vehicle manufactured before 1986 but designed and recommended by the manufacturer for use only with unleaded petrol (maximum penalty \$40,000 for a corporation or \$20,000 for any other person).
- All vehicles for which only unleaded petrol may be used will have to be fitted with labels to this effect. They will also have to be fitted with specially designed fuel-tank filling pipes to prevent their tanks being filled with leaded petrol. Leaded petrol will only be allowed to be dispensed from petrol pumps with nozzles too wide to fit into the filling pipes of unleaded-petrol vehicles.³
- Petrol-engined motor cars and motor car derivatives (station wagons, panel vans, utilities, etc) manufactured on or after 1 January 1986 will have to meet stricter exhaust-emission standards, equivalent to those applying in the United States in 1975-76. These standards, which will limit the emission of carbon monoxide, hydrocarbons and oxides of nitrogen, are shown in Table 1, which for comparison purposes also presents current and previous standards in Australia and the United States.
- Motor cars and derivatives manufactured on or after 1 January 1986 will also have to meet more stringent evaporative hydrocarbon emission standards, as shown in Table 2.
- Other light-duty motor vehicles will have to meet stricter evaporative emission standards from 1 January 1986 (Table 2) and stricter exhaust emission standards from 1 January 1988 (Table 3).

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1. The current legal limits in Victoria and Tasmania are 0.3 and 0.45 g/L respectively. In other states there are no legislative limits on the lead content of petrol.
 2. Elsewhere in Australia this requirement and the following requirement concerning the use of unleaded petrol will apply for new cars and derivatives from 1 January 1986, for motor cycles from 1 March 1988 and for most other motor vehicles from 1 July 1988.
 3. The possibility of exempting motor cycles from the filler neck provisions is currently under consideration.

These requirements under the Clean Air Act will lead directly to reductions in lead, carbon monoxide and hydrocarbon emissions to the atmosphere. They will also lead indirectly to significant reductions in particulate emissions, fuel consumption and motoring costs, because the introduction of unleaded petrol will for the first time enable Australian vehicle manufacturers to use catalytic converters and associated engine-control technologies, if they choose to do so, to control exhaust emissions.

Table 1

Exhaust-Emission Standards for Petrol-Engined Motor Cars and Derivatives

Standard	Maximum emissions (g/km)					
	CVS-C cycle			CVS-CH cycle		
	CO	HC	NO _x	CO	HC	NO _x
NSW Clean Air Regulations						
26(3) - July 1976 to December 1980	24.2	2.1	1.9	(17.5)	(1.9)	(1.93)
- January 1981 to December 1985	18.6	1.75	1.9	(13.5)	(1.6)	(1.93)
26(4) - January 1986 onwards				9.3	0.93	1.93
Australian Design Rules						
27A/B/C - July 1976 to December 1977	24.2	2.1	1.9	(17.5)	(1.9)	(1.93)
- January 1978 to December 1985	22.0	1.91	1.73	(15.9)	(1.7)	(1.73)
37 - January 1986 onwards				9.3	0.93	1.93
United States of America						
- 1973-74	24.2	2.1	1.9	(17.5)	(1.9)	(1.93)
- 1975-76				9.3	0.93	1.93
- 1977-79				9.3	0.93	1.24
- 1980				4.3	0.25	1.24
- 1981				2.1	0.25	0.62

- Notes:
- (1) CO: carbon monoxide; HC: hydrocarbons; NO_x: oxides of nitrogen.
 - (2) The CVS-C cycle is a 23-minute dynamometer-simulated city/urban driving schedule from a cold start. For the CVS-CH cycle this is followed by a 10-minute hot soak, a hot start and a repetition of the first 8.5 minutes of the driving schedule.
 - (3) The numbers in parentheses are CVS-CH cycle equivalents to standards based on the CVS-C cycle.

Table 2

Summary of Evaporative Emission Standards in NSW for Motor Cars and Derivatives and Light Commercial Vehicles (Clean Air Regulation 27)

Vehicle class	Manufactured from	Test method	Standard (g/test)
Motor cars and derivatives	1 January 1975	Canister	2
	1 January 1982	SHED	6
	1 January 1986	SHED	2
Light commercial vehicles (less than 2.7 tonnes gross vehicle mass)	1 January 1976	Canister	2
	1 July 1983	SHED	6
	1 January 1986	SHED	2

Note: The initial standard, derived from the US requirements applying between 1972 and 1977, used a "canister" hydrocarbon-collection procedure. Since January 1982 a new "SHED" (Sealed Housing for Evaporative Determination) test procedure has been used.

Table 3

Exhaust-Emission Standards for Petrol-Engined Light Commercial Vehicles

Standard	Maximum emissions (g/km)					
	CVS-C cycle			CVS-CH cycle		
	CO	HC	NO _x	CO	HC	NO _x
NSW Clean Air Regulations						
26(3) - July 1976 onwards	24.2	2.1	1.9	(17.5)	(1.9)	(1.9)
26(4) - January 1988 onwards				12.4	1.2	1.93
United States of America						
- 1973-74	24.2	2.1	1.9	(17.5)	(1.9)	(1.9)
- 1975-76-77-78				12.4	1.2	1.93
- 1979-81-82-83				11.2	1.06	1.43

- Notes:
- (1) CO: carbon monoxide; HC: hydrocarbons; NO_x: oxides of nitrogen.
 - (2) The CVS-C cycle is a 23-minute dynamometer-simulated city/urban driving schedule from a cold start. For the CVS-CH cycle this is followed by a 10-minute hot soak, a hot start and a repetition of the first 8.5 minutes of the driving schedule.
 - (3) The numbers in parentheses are CVS-CH cycle equivalents to standards based on the CVS-C cycle.
 - (4) Later dates of application will apply for some commercial vehicle classes.

The above new requirements will be enforced primarily by the State Pollution Control Commission. Failures to comply with the requirements may result in prosecution, the prohibition of registration of any vehicle or class of vehicle and/or the compulsory recall and alteration of vehicles by the manufacturer.

Further information

Further information on unleaded petrol may be obtained from the State Pollution Control Commission, 157 Liverpool Street, Sydney (phone (02) 266 0661 (before 11 November 1984), 265 8888 (after 11 November 1984)).