

Resize text: A A A

keywords

Search

[Vehicle Type Approval](#)[Home Page](#) > [Fuel Consumption and CO₂](#) > [Cars and air pollution](#)[Conformity of Production \(CoP\)](#)[Legislation](#)[Fuel Consumption & CO₂](#)[New Car Fuel Consumption / CO₂](#)[WLTP](#)[VCA's Point-of-Sale \(POS\) System](#)[Enforcement on Advertising](#)[Carfueldata and CO₂ tools](#)[Cars and Carbon Dioxide](#)[Cars and air pollution](#)[Cars and noise](#)[Fuel efficient driving tips](#)[Cars and fuel options](#)[The fuel consumption testing scheme](#)[Exhaust emissions testing](#)[How to use the data table](#)[Other relevant issues](#)[Responsibilities of Manufacturers & Retailers](#)[Fuel Consumption Labelling](#)[Noise](#)[Disclaimer](#)

Cars and air pollution

The principal air-quality pollutant emissions from petrol, diesel, and alternative-fuel engines are carbon monoxide, oxides of nitrogen, un-burnt hydrocarbons and particulate matter. It is emissions of these pollutants that are regulated by the Euro emissions standards. Modern cars, if kept in good condition, produce only quite small quantities of the air quality pollutants, but the emissions from large numbers of cars add to a significant air quality problem. Carbon monoxide, oxides of nitrogen, and un-burnt hydrocarbons are gases, and are generally invisible. Particulate matter is usually invisible although under certain operating conditions diesel engines will produce visible particles, appearing as smoke. Petrol engines will also produce visible particles if they are burning engine oil or running "rich", for example, following a cold start. Fine particles can also be produced by tyre and brake wear. Pollutant emission levels depend more on vehicle technology and the state of maintenance of the vehicle. Unlike emissions of CO₂, emission of air quality pollutants are less dependent on fuel consumption. Other factors, such as driving style, driving conditions and ambient temperature also affect them. However, as a starting point, all new passenger cars must meet minimum EU emissions standards.

The effects of these exhaust gases are described in more detail below:

CO - Carbon monoxide reduces the blood's oxygen-carrying capacity which can reduce the availability of oxygen to key organs. Extreme levels of exposure, such as might occur due to blocked flues in domestic boilers, can be fatal. At lower concentrations CO may pose a health risk, particularly to those suffering from heart disease.

NOx - Oxides of nitrogen include nitrogen dioxide (NO₂) and nitrogen oxide (NO): NO reacts in the atmosphere to form nitrogen dioxide (NO₂) which can have adverse effects on health, particularly among people with respiratory illness. High levels of exposure have been linked with increased hospital admissions due to respiratory problems, while long-term exposure may affect lung function and increase the response to allergens in sensitive people. NOx also contributes to smog formation, and acid rain, can damage vegetation, contributes to ground-level ozone formation and can react in the atmosphere to form fine particles ('secondary particles').

Particulate matter (PM) - Fine particles have an adverse effect on human health, particularly among those with existing respiratory disorders. Particulate matter is associated with respiratory and cardiovascular problem. 29,000 deaths a year in the UK are attributable to fine particulate pollution.

HC - Hydrocarbons contribute to ground-level ozone formation leading to risk of damage to the human respiratory system. Some kinds of hydrocarbons, in addition, are both carcinogenic and indirect greenhouse gases.

The European Union Ambient Air Quality Directive sets maximum permissible levels for roadside concentrations of pollutants thought to be harmful to human health and the environment. The government is committed to meeting those standards in as short as time as possible. Achieving the air quality standards for nitrogen dioxide and fine particles presents the greatest challenge, especially in urban areas.

Emissions of these air quality pollutants from road vehicles have been reduced by improving the quality of fuels and by setting increasingly stringent emission limits for new vehicles. As an example, it would take 50 new cars to produce the same quantity of air quality pollutant emissions per kilometre as a vehicle made in 1970. Over the last twenty years increasingly stringent emission limits have been set at a European level, starting with the "Euro1" limits in 1993. From September 2015 all new cars currently have to meet the Euro 6 standard. Since 1st January 2011 all models sold have had to meet the Euro 5 standard.

Information on the level of air quality pollutant emissions recorded for new models of cars at their type approval test is listed in the data table, alongside the CO₂ and fuel consumption figures. **Unlike the CO₂ and fuel consumption figures, the figures for air quality pollutant emissions should not be used to directly compare different models of vehicle.** The figures for these emissions are indicative rather than absolute, and emissions of them will vary within an acceptable range between individual production vehicles for each model.

[Next page](#)

UK Enforcement & Research

Vehicle Importing

Other Certification Activities

Dangerous Goods

Recruitment

VCA Graduate Training Scheme

VCA North America

VCA Asia Pacific

Site Map

Contact us - worldwide

Feedback

Useful Links



Last Updated: Wednesday 27th June 2018 | [Crown Copyright](#) | [Disclaimer](#) | [How to link to this website](#) | [Privacy and Cookies](#)