

# Noxious Emission Limits for Light Vehicles (up to 3.5 tonnes GVM) at Euro 2 to 6 levels

**December 2023**

**Euro 2**

**Adopted in ADR 79/00 from 1/1/2003 (for newly approved petrol models) and from 1/1/2004 (for all new petrol vehicles)**

**Adopted in ADR 79/00 from 1/1/2002 (for newly approved diesel models) to 1/1/2003 (for all new diesel vehicles)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Class | Reference mass (RW) (kg) | Carbon monoxide (CO) (g/km) | Carbon monoxide (CO) (g/km) | Total hydrocarbons and oxides of nitrogen (THC+NOx) (g/km) | Total hydrocarbons and oxides of nitrogen (THC+NOx) (g/km) | Mass of particulates (PM) (g/km) |
| Engine[[1]](#footnote-1) |  | PI | CI | PI | CI | CI |
| M1 | All**[[2]](#footnote-2)** | 2.2 | 1.0 | 0.5 | 0.7 | 0.08 |
| N1 | RW ≤ 1250 | 2.2 | 1.0 | 0.5 | 0.7 | 0.08 |
| N1 | >1250 but ≤ 1700 | 4.0 | 1.25 | 0.6 | 1.0 | 0.12 |
| N1 | >1700 | 5.0 | 1.5 | 0.7 | 1.2 | 0.17 |

**Euro 3
Adopted in ADR 79/01 for petrol vehicles from 1/1/2005 (for newly approved models) and from 1/1/2006 (for all new vehicles))**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Class | Reference mass (RW) (kg) | Carbon monoxide (CO) (g/km) | Carbon monoxide (CO) (g/km) | Total Hydrocarbons (THC) (g/km) | Oxides of nitrogen (NOx) (g/km) | Oxides of nitrogen (NOx) (g/km) | Total hydrocarbons and oxides of nitrogen (THC+NOx) (g/km) | Mass of particulates (PM) (g/km) |
| Engine[[3]](#footnote-3) |  | PI | CI | PI | PI | CI | CI | CI |
| M1 | All**[[4]](#footnote-4)** | 2.3 | 0.64 | 0.20 | 0.15 | 0.50 | 0.56 | 0.05 |
| N1 | ≤ 1305 | 2.3 | 0.64 | 0.20 | 0.15 | 0.50 | 0.56 | 0.05 |
| N1 | >1305 but ≤ 1760 | 4.17 | 0.80 | 0.25 | 0.18 | 0.65 | 0.72 | 0.07 |
| N1 | > 1760  | 5.22 | 0.95 | 0.29 | 0.21 | 0.78 | 0.86 | 0.10 |

**Euro 4**

**Adopted in ADR 79/01 from 1/1/2006 (for newly approved diesel models) to 1/1/2007 (for all new diesel vehicles)**

**Adopted in ADR 79/02 from 1/7/2008 (for newly approved models) and from 1/7/2010 (for all new vehicles)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Class | Reference mass (RW) (kg) | Carbon monoxide (CO) (g/km) | Carbon monoxide (CO) (g/km) | Total Hydrocarbons (THC) (g/km)  | Oxides of nitrogen (NOx) (g/km) | Oxides of nitrogen (NOx) (g/km) | Total hydrocarbons and oxides of nitrogen (THC+NOx) (g/km) | Mass of particulates (PM) (g/km) |
| Engine[[5]](#footnote-5) |  | PI | CI | PI | PI | CI | CI | CI |
| M1 | All**[[6]](#footnote-6)** | 1.0 | 0.50 | 0.10 | 0.08 | 0.25 | 0.30 | 0.025 |
| N1 | ≤ 1305 | 1.0 | 0.50 | 0.10 | 0.08 | 0.25 | 0.30 | 0.025 |
| N1 | >1305 but ≤ 1760 | 1.81 | 0.63 | 0.13 | 0.10 | 0.33 | 0.39 | 0.04 |
| N1 | > 1760  | 2.27 | 0.74 | 0.16 | 0.11 | 0.39 | 0.46 | 0.06 |

**Euro 5
Adopted in ADR 79/03[[7]](#footnote-7) from 1/11/2013 (for newly approved models) and ADR 79/04 from 1/11/2016 (for all new vehicles)**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Class | Reference mass (RW) (kg) | Carbon monoxide (CO) (mg/km) | Carbon monoxide(CO) (mg/km)CI | Total Hydrocarbons (THC) (mg/km) | Non-methane Hydrocarbons(NMHC)(mg/km) | Oxides of nitrogen (NOx) (mg/km) | Oxides of nitrogen (NOx)(mg/km) | Combined mass of total hydrocarbons and oxides of nitrogen (THC+NOx) (mg/km) | Mass of particulates (PM) (mg/km) | Mass of particulates (PM) (mg/km) | Number of Particles (#/km) |
| Engine[[8]](#footnote-8) |  | PI | CI | PI | PI | PI | CI | CI | PI[[9]](#footnote-9) | CI | CI |
| M1 | All[[10]](#footnote-10) | 1,000 | 500 | 100 | 68 | 60 | 180 | 230 | 4.5 | 4.5 | 6x1011 |
| N1 | ≤ 1305 | 1,000 | 500 | 100 | 68 | 60 | 180 | 230 | 4.5 | 4.5 | 6x1011 |
| N1 | >1305 but ≤ 1760 | 1,810 | 630 | 130 | 90 | 75 | 235 | 295 | 4.5 | 4.5 | 6x1011 |
| N1 | > 1760  | 2,270 | 740 | 160 | 108 | 82 | 280 | 350 | 4.5 | 4.5 | 6x1011 |

**Euro 6
Adopted in ADRs 79/05, 111/00[[11]](#footnote-11) and 112/00[[12]](#footnote-12) from 1/12/2025 (for newly approved models) and from 1/7/2028 (for all new vehicles)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Class | Reference mass (RW) (kg) | Carbon monoxide (CO) (mg/km) | Carbon monoxide (CO) (mg/km) | Total Hydrocarbons (THC) (mg/km) | Non-methane Hydrocarbons (NMHC) (mg/km) | Oxides of nitrogen (NOx) (mg/km) | Oxides of nitrogen (NOx)(mg/km) | Combined mass of total hydrocarbons and oxides of nitrogen (THC+NOx) (mg/km) | Mass of particulates (PM) (mg/km) | Mass of particulates (PM) (mg/km) | Number of Particles (#/km) | Number of Particles (#/km) |
| Engine[[13]](#footnote-13) |  | PI | C | PI | PI | PI | CI | CI | PI[[14]](#footnote-14) | CI | PI[[15]](#footnote-15) | CI |
| M | All | 1,000 | 500 | 100 | 68 | 60 | 80 | 170 | 4.5 | 4.5 | 6x1011 | 6x1011 |
| N1 | ≤ 1305 | 1,000 | 500 | 100 | 68 | 60 | 80 | 170 | 4.5 | 4.5 | 6x1011 | 6x1011 |
| N1 | >1305 but ≤ 1760 | 1,810 | 630 | 130 | 90 | 75 | 105 | 195 | 4.5 | 4.5 | 6x1011 | 6x1011 |
| N1 | > 1760 | 2,270 | 740 | 160 | 108 | 82 | 125 | 215 | 4.5 | 4.5 | 6x1011 | 6x1011 |

1. PI – Positive Ignition (Petrol and LPG), CI – Compression Ignition (Diesel) [↑](#footnote-ref-1)
2. Except Category M vehicles with a maximum mass over 2,500 kg and category M vehicles with more than 6 seats, which were subject to N category limits. [↑](#footnote-ref-2)
3. PI – Positive Ignition (Petrol and LPG), CI – Compression Ignition (Diesel) [↑](#footnote-ref-3)
4. Except Category M vehicles with a maximum mass over 2,500 kg, which were subject to N category limits. [↑](#footnote-ref-4)
5. PI – Positive Ignition (Petrol and LPG), CI – Compression Ignition (Diesel) [↑](#footnote-ref-5)
6. Except Category M vehicles with a maximum mass over 2,500 kg, which were subject to N category limits. [↑](#footnote-ref-6)
7. ADR 79/03 required compliance with the “core” Euro 5 technical requirements of UN Regulation 83/06, but:

	* allowed the provision of PM mass emissions data based on the previous UN R83/05 (Annex 4) Type I test procedure (with a PM mass emissions limit of 0.005g/km) in lieu of data collected under the revised test procedure (Annex 4a of UN R83/06) which specifies a limit of 0.0045g/km);
	* accepted a relaxed OBD threshold limit (80mg/km) for PM mass for M and N category vehicles of reference mass >1760kg;
	* did not require compliance with the PM number limit specified for diesel vehicles in UN R83/06;
	* did not require compliance with the In Use Performance Ratio for OBD systems in UN R83/06;
	* did not require the NOx monitoring for petrol vehicles specified in UN R83/06; and
	* only required flex fuel vehicles to meet the Type VI (low temperature) test when tested on petrol. [↑](#footnote-ref-7)
8. PI – Positive Ignition (Petrol and LPG), CI – Compression Ignition (Diesel) [↑](#footnote-ref-8)
9. Direct injection petrol vehicles only [↑](#footnote-ref-9)
10. Except Category M vehicles designated as special social purpose vehicles [↑](#footnote-ref-10)
11. ADR 111/00 adopts the Euro 6d laboratory tests for exhaust emissions, evaporative emissions, durability and on-board diagnostics adopted in UN Regulation 154 [↑](#footnote-ref-11)
12. ADR 112/00 adopts the Euro 6d on-road emissions testing requirements adopted in UN Regulation 168 [↑](#footnote-ref-12)
13. PI – Positive Ignition (Petrol and LPG), CI – Compression Ignition (Diesel) [↑](#footnote-ref-13)
14. Direct injection petrol vehicles only [↑](#footnote-ref-14)
15. Direct injection petrol vehicles only [↑](#footnote-ref-15)