



**California Certification Exhaust Emission Standards
for Medium-Duty Vehicles:
Federal Test Procedure (FTP)
(grams/mile)**

| | Vehicle Type | Emission Category | Vehicle Useful Life | | | | | | | | | | | | |
|------------|--------------|-------------------|------------------------|---------------------|-----|---------------------|-------|-----------------------|---------------------|---------------------|------|----------------------|----------------------|-------|--|
| | | | 5 Years / 50,000 Miles | | | | | | | | | | | | |
| | | | NMHC ^[3] | NMOG ^[1] | CO | NO _x | PM | HCHO | NMHC ^[3] | NMOG ^[1] | CO | NO _x | PM | HCHO | |
| California | MDV1 | Tier 0 | 0.39 | - | 9.0 | 0.4 ^[10] | 0.08 | ^[11] 0.015 | | | | | | | |
| | | Tier 1 | 0.25 | - | 3.4 | 0.4 | - | ^[11] 0.015 | 0.36 | - | 5.0 | 0.55 | ^[10] 0.08 | - | |
| | | LEV | - | 0.125 | 3.4 | 0.4 | - | 0.015 | - | 0.180 | 5.0 | 0.6 | ^[10] 0.08 | 0.022 | |
| | | ULEV | - | 0.075 | 1.7 | 0.2 | - | 0.008 | - | 0.107 | 2.5 | 0.3 | ^[10] 0.04 | 0.012 | |
| | MDV2 | Tier 0 | 0.50 | - | 9.0 | 1.0 ^[10] | 0.08 | ^[11] 0.018 | | | | | | | |
| | | Tier 1 | 0.32 | - | 4.4 | 0.7 | - | ^[11] 0.018 | 0.46 | - | 6.4 | 0.98 | ^[10] 0.10 | - | |
| | | LEV | - | 0.160 | 4.4 | ^[13] 0.4 | - | 0.018 | - | 0.230 | 6.4 | ^[14] 0.6 | ^[10] 0.10 | 0.027 | |
| | | ULEV | - | 0.100 | 4.4 | 0.4 | - | 0.009 | - | 0.143 | 6.4 | 0.6 | ^[10] 0.05 | 0.013 | |
| | | SULEV | - | 0.050 | 2.2 | 0.2 | - | 0.004 | - | 0.072 | 3.2 | 0.3 | ^[10] 0.05 | 0.006 | |
| | MDV3 | Tier 0 | 0.60 | - | 9.0 | 1.5 ^[10] | 0.08 | ^[11] 0.022 | | | | | | | |
| | | Tier 1 | 0.39 | - | 5.0 | 1.1 | - | ^[11] 0.022 | 0.56 | - | 7.3 | 1.53 | ^[10] 0.12 | - | |
| | | LEV | - | 0.195 | 5.0 | ^[15] 0.6 | - | 0.022 | - | 0.280 | 7.3 | ^[16] 0.9 | ^[10] 0.12 | 0.032 | |
| | | ULEV | - | 0.117 | 5.0 | 0.6 | - | 0.011 | - | 0.167 | 7.3 | 0.9 | ^[10] 0.06 | 0.016 | |
| | | SULEV | - | 0.059 | 2.5 | 0.3 | - | 0.006 | - | 0.084 | 3.7 | 0.45 | ^[10] 0.06 | 0.008 | |
| | MDV4 | Tier 1 | 0.46 | - | 5.5 | 1.3 | - | ^[11] 0.028 | 0.66 | - | 8.1 | 1.81 | ^[10] 0.12 | - | |
| | | LEV | - | 0.230 | 5.5 | ^[17] 0.7 | - | 0.028 | - | 0.330 | 8.1 | ^[18] 1.0 | ^[10] 0.12 | 0.040 | |
| | | ULEV | - | 0.138 | 5.5 | 0.7 | - | 0.014 | - | 0.197 | 8.1 | 1.0 | ^[10] 0.06 | 0.021 | |
| | | SULEV | - | 0.069 | 2.8 | 0.35 | - | 0.007 | - | 0.100 | 4.1 | 0.5 | ^[10] 0.06 | 0.010 | |
| | MDV5 | Tier 1 | 0.60 | - | 7.0 | 2.0 | - | ^[11] 0.036 | 0.86 | - | 10.3 | 2.77 | ^[10] 0.12 | - | |
| | | LEV | - | 0.300 | 7.0 | ^[19] 1.0 | - | 0.036 | - | 0.430 | 10.3 | ^[20] 1.5 | ^[10] 0.12 | 0.052 | |
| ULEV | | - | 0.180 | 7.0 | 1.0 | - | 0.018 | - | 0.257 | 10.3 | 1.5 | ^[10] 0.06 | 0.026 | | |
| SULEV | | - | 0.090 | 3.5 | 0.5 | - | 0.009 | - | 0.130 | 5.2 | 0.7 | ^[10] 0.06 | 0.013 | | |