

Executive Order: A-254-0406

New Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles

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Pursuant to the authority vested in California Air Resources Board by Health and Safety Code (HSC), Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by HSC Sections 39515 and 39516 and Executive Order G-14-012;

IT IS ORDERED AND RESOLVED: That the following exhaust and evaporative emission control systems produced by the manufacturer are certified as described below. Production vehicles shall be in all material respects the same as those for which certification is granted.

| MODEL   TEST GROUP   VEHICLE CLASS(ES)   FUEL CATEGORY   FUEL TYPE  |  |  |  |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|--|--|--|
| USEFUL LIFE (miles) VEHICLE EMISSION CATEGORY INTERIM / INTERMEDIATE IN-USE EXH/ORVR EVAP FTP SFTP FTP SFTP  120000 150000 LEV2 ULEV LEV 2 SFTP * *  SPECIAL FEATURES & EXHAUST EMISSION CONTROL SYSTEMS  1 WR-H02S, H02S, WU-TWC, TWC, DFI, TC, CAC FULL ALL MODELS PARTIAL * 1.6  * * PARTIAL * 1.6  EVAPORATIVE & REFUELING (EVAP/ORVR) FAMILY INFORMATION  EVAP / ORVR FAMILY EVAPORATIVE STD CATEGORY EVAP EMISSION STD VEHICLE CLASS SPECIAL FEATURE  |  |  |  |  |  |  |  |  |  |  |
| EXH/ORVR EVAP FTP SFTP FTP SFTP  120000 150000 LEV2 ULEV LEV 2 SFTP * *  SPECIAL FEATURES & EXHAUST EMISSION CONTROL SYSTEMS  1 WR-H02S, H02S, WU-TWC, TWC, DFI, TC, CAC PARTIAL *  * PARTIAL *  PARTIAL WITH FINES  EVAPORATIVE & REFUELING (EVAP/ORVR) FAMILY INFORMATION  EVAP / ORVR FAMILY EVAPORATIVE STD CATEGORY EVAP EMISSION STD VEHICLE CLASS  SFTP  SFTP  SFTP  * *  *  *  *  *  *  *  *  *  *  *  *  |  |  |  |  |  |  |  |  |  |  |
| EXH/ORVR EVAP FTP SFTP FTP SFTP  120000 150000 LEV2 ULEV LEV 2 SFTP * *  SPECIAL FEATURES & EXHAUST EMISSION CONTROL SYSTEMS  1 WR-H02S, H02S, WU-TWC, TWC, DFI, TC, CAC PARTIAL *  * PARTIAL *  PARTIAL WITH FINES  EVAPORATIVE & REFUELING (EVAP/ORVR) FAMILY INFORMATION  EVAP / ORVR FAMILY EVAPORATIVE STD CATEGORY EVAP EMISSION STD VEHICLE CLASS  SFTP  SFTP  SFTP  * *  *  *  *  *  *  *  *  *  *  *  *  | STD  |  |  |  |  |  |  |  |  |  |
| SPECIAL FEATURES & EXHAUST EMISSION CONTROL SYSTEMS  OBD STATUS  ENGINE DISPLACE (L)  WR-H02S, H02S, WU-TWC, TWC, DFI, TC, CAC  * PARTIAL * PARTIAL WITH FINES  EVAPORATIVE & REFUELING (EVAP/ORVR) FAMILY INFORMATION  EVAP / ORVR FAMILY  EVAPORATIVE STD CATEGORY  EVAP EMISSION STD VEHICLE CLASS  SPECIAL FEATUR   |  |  |  |  |  |  |  |  |  |  |
| SYSTEMS  OBD STATUS  (L)  WR-H02S, H02S, WU-TWC, TWC, DFI, TC, CAC  * PARTIAL * 1.6  * PARTIAL WITH FINES  EVAPORATIVE & REFUELING (EVAP/ORVR) FAMILY INFORMATION  EVAP / ORVR FAMILY  EVAPORATIVE STD CATEGORY  EVAP EMISSION STD VEHICLE CLASS  SPECIAL FEATUR  |  |  |  |  |  |  |  |  |  |  |
| * PARTIAL * 1.6  PARTIAL WITH TINES * PARTIAL WITH | MENT   |  |  |  |  |  |  |  |  |  |
| * * PARTIAL WITH * FINES *  EVAPORATIVE & REFUELING (EVAP/ORVR) FAMILY INFORMATION  EVAP / ORVR FAMILY EVAPORATIVE STD CATEGORY EVAP EMISSION STD VEHICLE CLASS SPECIAL FEATURE   |  |  |  |  |  |  |  |  |  |  |
| * FINES * EVAPORATIVE & REFUELING (EVAP/ORVR) FAMILY INFORMATION  EVAP / ORVR FAMILY EVAPORATIVE STD CATEGORY EVAP EMISSION STD VEHICLE CLASS SPECIAL FEATURE   |  |  |  |  |  |  |  |  |  |  |
| EVAP / ORVR FAMILY EVAPORATIVE STD CATEGORY EVAP EMISSION STD VEHICLE CLASS SPECIAL FEATUR  |  |  |  |  |  |  |  |  |  |  |
| EVAP / ORVR FAMILY EVAPORATIVE STD CATEGORY VEHICLE CLASS SPECIAL FEATUR  | EVAPORATIVE & REFUELING (EVAP/ORVR) FAMILY INFORMATION |  |  |  |  |  |  |  |  |  |
| KHYXR0125CCE LEV 2 PC *   | ES   |  |  |  |  |  |  |  |  |  |
|   |  |  |  |  |  |  |  |  |  |  |
| EMISSION CREDIT INFORMATION   |  |  |  |  |  |  |  |  |  |  |
| NMOG+NOX FLEET AVE. CREDIT FOR EXTENDED WARRANTY  NMOG CREDIT FOR NON-PZEV ZERO-EVAP  NMOG CREDIT FOR DOR FOR WORK TRU  |  |  |  |  |  |  |  |  |  |  |
| N N N   |  |  |  |  |  |  |  |  |  |  |
| NMOG AND FLEET AVERAGE INFORMATION  |  |  |  |  |  |  |  |  |  |  |
| NMOG CH4 RAF NMOG/NMHC RATIO    NMOG/NMHC RATIO   NMOG+NOX FLEET STD PC+LDT (0-3750 LVW) (g/mi)   NMOG+NOX FLEET STD LDT (3751 LVW-8500 GVWR) + MDPV (g/mi)   GVWR) (g/mi)   GVWR) (g/mi)   GVWR) (g/mi)   NMOG+NOX FLEET STD LDT (3751 LVW-8500 GVWR) + MDPV (g/mi)   GVWR) (g/mi) | ,000   |  |  |  |  |  |  |  |  |  |
| * * 1.04 * 0.072 0.083 *  |  |  |  |  |  |  |  |  |  |  |

See the Attachment for Vehicle Models, Evaporative Family, Engine Displacement, Emission Control Systems, Phase-In Standards, OBD Compliance, Emission Standards and Certification Levels, and Abbreviations. (As applicable, heavy-duty vehicles (HDV) over 14,000 pounds in GVWR listed in this Executive Order are certified to the requirements in 13 CCR Section 1961.2 applicable to MDV pursuant to 13 CCR Section 1956.8(c)(3) or 13 CCR Section 1956.8(h)(5), as applicable.)



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## BE IT FURTHER RESOLVED:

The exhaust and evaporative emission standards and the certification emission levels for the listed vehicles are as listed on the Attachment. Compliance with the 50° Fahrenheit testing requirement may have been met based on the manufacturer's submitted compliance plan in lieu of testing. Any debit in the manufacturer's fleet average compliance requirement for NMOG+NOx or Vehicle Equivalent Credit (13 CCR Sections 1961.2(b)(1), 1961.2(b)(3), or 1961.2(c)(3), and the incorporated test procedures, as applicable), or Greenhouse Gas Emissions (13 CCR Section 1961.3, or 17 CCR Section 95663, and the incorporated test procedures, as applicable), for PC, LDT, MDPV or MDV shall be equalized as required.

#### BE IT FURTHER RESOLVED:

For the listed vehicle models, the manufacturer has attested to compliance with Title 13, California Code of Regulations, (13 CCR) Sections 1965 [emission control labels], 1968.2 [on-board diagnostic, full or partial compliance], 2035 et seq. [emission control warranty], 2235 [fuel tank fill pipes and openings] (gasoline and alcohol fueled vehicles only), and "High-Altitude Requirements" and "Inspection and Maintenance Emission Standards" (California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for PC, LDT and MDV).

Vehicles certified under this Executive Order shall conform to all applicable California emission regulations.

The Bureau of Automotive Repair will be notified by copy of this Executive Order.

Executed at El Monte, California on this

\_day of October 2018.

Annette Hebert, Chief

Emissions Compliance, Automotive Regulations and Science Division



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# **ATTACHMENT**

## EXHAUST AND EVAPORATIVE EMISSION STANDARDS AND CERTIFICATION LEVELS

EXHAUST EMISSION STANDARDS AND CERTIFICATION LEVELS (FTP, HWFET, 50°F, 20°F)

CH4: methane; NMOG: non-CH4 organic gas; HC: hydrocarbon; NMHC: non-CH4 HC; CO: carbon monoxide; NOx: oxides of nitrogen; HCHO: formaldehyde; PM: particulate matter; RAF: reactivity adjustment factor; 2DHS/3DHS [g HC/test]: 2/3 days diurnal+hot-soak; RL [g HC/mi]: running loss; ORVR [g HC/gallon dispensed]: on-board refueling vapor recovery; g: gram; mg: milligram; mi: mile; K: 1000 miles; F: degrees Fahrenheit; FTP: federal test procedure; SFTP: supplemental FTP

**FUEL TYPE** 

|          |                                  | NMOG<br>(g/mi) |       |      |     | NOx<br>(g/mi) |      | HCHO<br>(mg/mi) |     | PM<br>(g/mi) |      |
|----------|----------------------------------|----------------|-------|------|-----|---------------|------|-----------------|-----|--------------|------|
|          |                                  | CERT           | STD   | CERT | STD | CERT          | STD  | CERT            | STD | CERT         | STD  |
| FTP@50K  | GASOLINE -<br>TIER 2<br>UNLEADED | 0.023          | 0.040 | 0.3  | 1.7 | 0.02          | 0.05 | *               | 8   | *            | *    |
| FTP@UL   | GASOLINE -<br>TIER 2<br>UNLEADED | 0.032          | 0.055 | 0.5  | 2.1 | 0.02          | 0.07 | *               | 11  | *            | 0.01 |
| 50°F @4K | GASOLINE -<br>TIER 2<br>UNLEADED | 0.038          | 0.080 | 0.3  | 1.7 | 0.01          | 0.05 | *               | 16  |              |      |

|             | FUEL TYPE                   | NOx  | (g/mi) | CO ( | g/mi) |
|-------------|-----------------------------|------|--------|------|-------|
|             | FUEL TYPE                   | CERT | STD    | CERT | STD   |
| HWFET @ 50K | GASOLINE - TIER 2 UNLEADED  | 0.01 | 0.07   |      |       |
| HWFET @ UL  | GASOLINE - TIER 2 UNLEADED  | 0.02 | 0.09   |      |       |
| 20°F @ 50K  | GASOLINE-COLD CO LOW OCTANE |      |        | 0.7  | 10.0  |

## SFTP EXHAUST EMISSION STANDARDS AND CERTIFICATION LEVELS

|      |                                  |      |                    | US06         |               | SC03               | 3            | COM                | IPOSITE      |               |
|------|----------------------------------|------|--------------------|--------------|---------------|--------------------|--------------|--------------------|--------------|---------------|
|      | FUEL TYPE                        |      | NMHC+NOx<br>(g/mi) | CO<br>(g/mi) | PM<br>(mg/mi) | NMHC+NOx<br>(g/mi) | CO<br>(g/mi) | NMOG+NOx<br>(g/mi) | CO<br>(g/mi) | PM<br>(mg/mi) |
| @ 4K | GASOLINE -<br>TIER 2<br>UNLEADED | CERT | 0.05               | 1.5          |               | 0.01               | 0.2          |                    |              |               |
|      |                                  | STD  | 0.14               | 8.0          |               | 0.20               | 2.7          |                    |              |               |
|      |                                  | CERT | *                  | *            | *             | *                  | *            | 0.052              | *            | *             |
| @ UL | GASOLINE -<br>TIER 2<br>UNLEADED | STD  | *                  | *            | *             | *                  | *            | 0.090              | *            | *             |
|      |                                  | BIN  |                    |              |               |                    |              | 0.130              |              |               |

# WHOLE VEHICLE EVAPORATIVE EMISSION STANDARDS AND CERTIFICATION LEVELS

|                    |                          |                    | WHOLE \ | /EHICLE | EVAPORA            | TIVE TESTII | NG  |                |      |  |
|--------------------|--------------------------|--------------------|---------|---------|--------------------|-------------|-----|----------------|------|--|
| EVAPORATIVE FAMILY | FUEL TYPE                | 3DHS (g/test) @ UL |         |         | 2DHS (g/test) @ UL |             |     | RL (g/mi) @ UL |      |  |
|                    |                          | CERT               | STD     | FEL     | CERT               | STD         | FEL | CERT           | STD  |  |
| KHYXR0125CCE       | GASOLINE -<br>CA PHASE 2 | 0.20               | 0.50    | *       | 0.46               | 0.65        | *   | 0.00           | 0.05 |  |



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|                               |                                  |        |       |            | FUEL ONLY EVAP & CANISTER BLEED |         |                                |          |                                    |     |  |  |  |
|-------------------------------|----------------------------------|--------|-------|------------|---------------------------------|---------|--------------------------------|----------|------------------------------------|-----|--|--|--|
| EVAPORATIVE FAMILY            | ORVR (g/gallon) @ UL             |        |       | FUEL TYPE  | 3DHS RIG TEST<br>(g/test) @ UL  |         | 2DHS RIG TEST<br>(g/test) @ UL |          | BLEED CANISTE<br>TEST (g/test) @ 4 |     |  |  |  |
|                               | FUEL TYPE                        | CERT   | STD   |            | CERT                            | STD     | CERT                           | STD      | CERT                               | STD |  |  |  |
| KHYXR0125CCE                  | GASOLINE -<br>TIER 2<br>UNLEADED | 0.02   | 0.20  |            | *                               | *       | *                              | *        | *                                  | *   |  |  |  |
|                               | EFFECTIVE I                      | LEAK D | IAMET | ER STANDAR | D AND CE                        | RTIFICA | TION LEV                       | EL (INCH | HES)                               |     |  |  |  |
| EVAPORATIVE FAMILY LEAK FAMIL |                                  | Y CERT |       |            | STD                             |         |                                |          |                                    |     |  |  |  |
| *                             | *                                |        |       |            | * '                             |         |                                | -        | *                                  |     |  |  |  |

\*: not applicable; #: pounds; UL: useful life; PC: passenger car; LDT: light-duty truck; LDT1: LDT<6000#GVWR,0-3750#LVW; LDT2: LDT<6000#GVWR,3751-5750#LVW; LDT3: LDT 6001-8500#GVWR,3751-5750#ALVW; LDT4: LDT 6001-8500#GVWR,5751-8500#ALVW; MDV: medium-duty vehicle; MDV4: MDV 8501-10000#GVWR; MDV5: MDV 10001-14000#GVWR; MDPV: mediumduty passenger vehicle; HDV: heavy-duty vehicle; ECS: emission control system; CERT: certification; STD: standard; FEL: family emission limit; GVWR: gross vehicle weight rating; LVW: loaded vehicle weight; ALVW: adjusted LVW; LEV: low emission vehicle; ULEV: ultra LEV; SULEV: super ULEV; ŽEV: zero-emission vehicle; TZEV: transitional ZEV; TWC/OC: 3-way/oxidizing catalyst; ADSTWC: adsorbing TWC; HAC: HC adsorbing catalyst; WU: warm-up catalyst; NAC: NOx adsorption catalyst; SCR-U or SCRC/SCR-N or SCRC-NH3: selective catalytic reduction-urea/ammonia; NH3OC: ammonia oxidation catalyst; CTOX/PTOX: continuous/periodic trap oxidizer; DPF: diesel particulate filter (active); GPF: PM filter for spark-ignited engine; HO2S/O2S: heated/oxygen sensor; WR-HO2S or AFS; wide range/linear/heated air-fuel ratio sensor; NOXS; NOx sensor; PMS; PM sensor; RDQS: reductant quality sensor; NH3S: ammonia sensor; EGR: exhaust gas recirculation; EGRC: EGR cooler; AIR/AIRE: secondary air injection (belt driven)/(electric driven); PAIR: pulsed AIR; SFI/MFI: sequential/multiport fuel injection; DFI/IFI: direct/indirect fuel injection; TC/SC: turbo/super charger; CAC: charge air cooler; FFH: fuel fired heater; F/P/\$: full/partial/partial with fines on-board diagnostic; DOR: direct ozone reducing; HCT: hydrocarbon trap; BCAN: bleed carbon canister; prefix 2: parallel; (2) suffix: series; CNG/LNG: compressed/liquefied natural gas; LPG: liquefied petroleum gas; E85: "85%" ethanol ("15%"gasoline) fuel; E10: "10%" ethanol ("90%"qasoline) fuel; A: automatic (with lockup); M: manual transmission; SA: semi-automatic transmission; CV: continuously variable transmission; SCV: selectable continuously variable transmission; AM: automated manual transmission; AMS: automated manual-selectable transmission; OT: other transmission; AER: all-electric range; EAER: equivalent AER; PHEV: plug-in hybrid electric vehicle

| 2       | 2019 MODEL | YEAR: VE  | HICLE M    | ODELS INF  | ORMATION           |     |     |
|---------|------------|-----------|------------|------------|--------------------|-----|-----|
| MAKE    | MODEL      | VEH CLASS | ENGINE (L) | TRANS TYPE | EVAPORATIVE FAMILY | EXH | OBD |
| HYUNDAI | ELANTRA    | PC        | 1.6        | AM7,M6     | KHYXR0125CCE       | 1   | F   |