California Environmental Protection Agency

⊘ Air Resources Board

HYUNDAI MOTOR COMPANY Executive Order: A-254-0328

New Passenger Cars, Light-Duty Trucks and

Medium-Duty Vehicles

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Pursuant to the authority vested in the 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: 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.

						TEST GRO	IID II	VEO	PMATION						
MOD	FI				-	TEST GRO		410	KINATION						
MOD YEA		EST G	ROUP	V	EHICL	LE CLASS(ES	3)	FUEL CATEGORY				FUEL TYPE			
201	7 HHYXV02.01GF PC							DEDICATED SINGLE FUEL VEHICLE				GASOLINE			
	USEFUL LIFE (miles) VEHICLE EMISSION CATEGORY INTERIM / INTERME						MEDIATE IN-USE STD								
EX	H/ORVR		EVAP		F	FTP		S	FTP			FTP		SFTP	
1	20000		150000		LEV	2 ULEV	LEV 2 SF				*			*	
SPECIAL FEATURES & EXHAUST EMISSION CONTROL SYSTEMS						-		ОВП	D S1	ΓΑΤ	JS	EN	ENGINE DISPLACEMENT		
1		T	WC, WR-H	02S, HO2	s, D	FI			FULL		AL	L MODELS			
*		*							PARTIAL	TIAL *		2.0			
*	*							PA	ARTIAL WIT	*					
EVAPORATIVE & REFUELING (EVAP/ORVR) FAMILY INFORMATION															
EV	AP / ORV	'R FAI	MILY	EVAPOR	ATIVE	STD CATE	ORY	RY EVAP EMISSION STD VEHICLE CLASS			SPECIAL FEATURES				
	HHYXR01	L281GI	E		LI	EV 2				PC *			*		
					Е	EMISSION CR	REDI	T INI	FORMATIC	ON					-
	A	LLOW	ANCE FO	R TEST G	ROUI	P		NMOG CREDIT FOR NMOG CREDIT FOR			FOR	OPTIONAL EXH. STD FOR WORK			
BAS	ELINE P	ZEV	АТ	PZEV		TZEV	NC	NON-PZEV ZERO-EVAP			DC			TRUCKS	
* * *							N N			1	N				
NMOG AND FLEET AVERAGE INFORMATION															
NMOG RAF	CH4 RAF	H4 NMOG/NMHC HCHO/NMHC		NMOG+NOX FLEET ST PC+LDT (0-3750 LVW) (g/mi)		/W) L[NMOG+NOX FLEET ST LDT (3751 LVW-8500 GVWR) + MDPV (g/mi)			NMOG+NOX FLEET ST MDV (10001-14000 GVWR) (g/mi)					
*	*		1.04	*		0	.086				0	.101			*

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.

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 NMOG+NOx and greenhouse gas Fleet Average (PC or LDT or MDPV) or "Vehicle Equivalent Credit" (MDV) compliance plan 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

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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 May 2016

Annette Hebert, Chief

Emissions Compliance, Automotive Regulations and Science Division

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FUEL TYPE

GASOLINE -

TIER 2

UNLEADED

50°F @4K

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

0.02

0.05

					4.					
	NMOG (g/mi)		CO (g/mi)		NOx (g/mi)		HCHO (mg/mi)		PM (g/mi)	
	CERT	STD	CERT	STD	CERT	STD	CERT	STD	CERT	STD
GASOLINE - TIER 2 UNLEADED	0.021	0.040	0.3	1.7	0.02	0.05	*	8	*	*
GASOLINE - TIER 2 UNLEADED	0.029	0.055	0.6	2.1	0.03	0.07	*	11	*	0.01
	TIER 2 UNLEADED GASOLINE - TIER 2	GASOLINE - TIER 2 UNLEADED GASOLINE - TIER 2 0.029	(g/mi) CERT STD GASOLINE - TIER 2 0.021 0.040 UNLEADED GASOLINE - TIER 2 0.029 0.055	(g/mi) (g	(g/mi) (g/mi) CERT STD CERT STD GASOLINE - TIER 2 UNLEADED 0.021 0.040 0.3 1.7 GASOLINE - TIER 2 0.029 0.055 0.6 2.1	(g/mi) (g/mi) (g/ CERT STD CERT STD CERT GASOLINE - TIER 2 UNLEADED 0.021 0.040 0.3 1.7 0.02 GASOLINE - TIER 2 0.029 0.055 0.6 2.1 0.03	(g/mi) (g/mi) (g/mi) CERT STD CERT STD CERT STD GASOLINE - TIER 2 UNLEADED 0.021 0.040 0.3 1.7 0.02 0.05 GASOLINE - TIER 2 0.029 0.055 0.6 2.1 0.03 0.07	(g/mi) (g/mi) (g/mi) (mg CERT STD CERT STD CERT STD CERT GASOLINE - TIER 2 UNLEADED 0.021 0.040 0.3 1.7 0.02 0.05 * GASOLINE - TIER 2 0.029 0.055 0.6 2.1 0.03 0.07 *	(g/mi) (g/mi) (mg/mi) CERT STD CERT STD CERT STD CERT STD GASOLINE - TIER 2 UNLEADED 0.021 0.040 0.3 1.7 0.02 0.05 * 8 GASOLINE - TIER 2 0.029 0.055 0.6 2.1 0.03 0.07 * 11	(g/mi) (g/mi) (g/mi) (mg/mi) (g/mi) CERT STD CERT STD CERT STD CERT GASOLINE - TIER 2 UNLEADED 0.021 0.040 0.3 1.7 0.02 0.05 * 8 * GASOLINE - TIER 2 0.029 0.055 0.6 2.1 0.03 0.07 * 11 *

	FUEL TYPE	NOx	(g/mi)	CO (g/mi)		
The state of the s	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	

0.080

0.019

SFTP EXHAUST EMISSION STANDARDS AND CERTIFICATION LEVELS **US06** SC03 COMPOSITE NMOG+NOx PM **FUEL TYPE** NMHC+NOx CO PM NMHC+NOx CO CO (g/mi) (mg/mi) (g/mi) (g/mi) (g/mi) (g/mi) (mg/mi) (g/mi) GASOLINE CERT 0.02 1.0 0.04 0.1 TIER 2 @ 4K UNLEADED STD 0.14 8.0 0.20 2.7 * CERT * * * * 0.057 * * GASOLINE STD 0.103 @ UL TIER 2 UNLEADED BIN 0.130

			WHOLE						
EVAPORATIVE FAMILY	FUEL TYPE	3DH	S (g/test) (@ UL	2DI	HS (g/test) @	RL (g/mi) @ UL		
		CERT	STD	FEL	CERT	STD	FEL	CERT	STD
HHYXR01281GE	GASOLINE - CA PHASE 2	0.35	0.50	*	0.22	0.65	*	0.01	0.05

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ORVR / FUEL ONLY / CANISTER BLEED EVAPORATIVE EMISSION STANDARDS AND CERTIFICATION LEVELS												
				FUEL ONLY EVAP & CANISTER BLEED								
EVAPORATIVE FAMILY	ORVR (g/gallon) @ UL			FUEL TYPE	3DHS RIG TEST (g/test) @ UL		2DHS RIG TEST (g/test) @ UL		BLEED CANISTER TEST (g/test) @ 4K			
	FUEL TYPE	CERT	STD		CERT	STD	CERT	STD	CERT	STD		
HHYXR01281GE	GASOLINE - TIER 2 UNLEADED	0.00	0.20	*	*	*	*	*	*	*		

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; ZEV: zero-emission vehicle; PZEV: partial ZEV; AT PZEV: advanced technology PZEV; 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; HOŹS/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; 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%"gasoline) 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

2017 MODEL YEAR: VEHICLE MODELS INFORMATION											
MAKE	MODEL	VEH CLASS	ENGINE (L)	TRANS TYPE	EVAPORATIVE FAMILY	EXH ECS	OBD	PZEV TYPE			
HYUNDAI	ELANTRA GT	PC	2.0	M6,SA6	HHYXR01281GE	1	F	*			