## California Environmental Protection Agency

**OB** Air Resources Board

HYUNDAI MOTOR COMPANY Executive Order: A-254-0331

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	UP II	NFO	RMATION						
MODE	1 7	TEST G	ROUP	VEHICLE CLASS(ES)					FUEL CATEGORY			FUEL TYPE			
201	7 H	HYXVO!	5.01RF	PC				DEDICATED SINGLE FUEL VEHICLE			GASOLINE				
	USEFU	L LIFE	(miles)		٧	EHICLE EMISS	ION C	ATE	GORY	I	NTERIM / IN	ERMI	EDIA	E IN-USE STD	
EXI	1/ORVR		EVAP			FTP		S	FTP		FTP		SFTP		
1:	20000		150000		L	EV2 ULEV	I		2 SFTP NDARD		*		*		
SPI	CIAL F	EATUR		HAUST	EMIS	SION CONTRO	L		OBD	STAT	US	ENG	GINE	DISPLACEMENT (L)	
1		2WU-	TWC, 2T	WC, 21	H02S (	2), DFI			FULL	A	LL MODELS				
*				*					PARTIAL		* 5.			5.0	
*				*				PA	RTIAL WIT FINES	Н	H *				
			EV	APOR	ATIVE	& REFUELING	(EVA	P/O	RVR) FAM	ILY IN	FORMATION				
EV	AP / OR	VR FAI	MILY	EVAP	ORAT	IVE STD CATE	GORY	PRY EVAP EMISSION STD VEHICLE CLASS				SP	ECIA	L FEATURES	
	HHYXR0	140AR	E			LEV 2		PC *				*			
						EMISSION C	REDIT	ΓINF	ORMATIO	N					
	,	ALLOW	ANCE FO	R TES	T GRO	DUP		NMOG CREDIT FOR I NMOG CREDIT FOR IS			OPTIONAL EXH. STD FOR WORK				
BAS	ELINE F	PZEV	АТ	PZEV		TZEV	NC	)N-P	ZEV ZERO	-EVAI	P DO	)K		TRUCKS	
* * *							N		1	ī	N				
					NM	OG AND FLEET	AVE	RAC	E INFORM	OITAN	N				
			PC+LDT (	(0-3750 LVW) L		W) LD	NMOG+NOX FLEET STE LDT (3751 LVW-8500 GVWR) + MDPV (g/mi)			NMOG+NOX FLEET STD MDV (10001-14000 GVWR) (g/mi)					
*	*		1.04 * 0.0				.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

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 (g/mi)		CO (g/mi)		NOx (g/mi)		HCHO (mg/mi)		PM (g/mi)		
		CERT	STD	CERT	STD	CERT	STD	CERT	STD	CERT	STD	
FTP@50K	GASOLINE - TIER 2 UNLEADED	0.029	0.040	0.5	1.7	0.02	0.05	*	8	*	*	
FTP@UL	GASOLINE - TIER 2 UNLEADED	0.033	0.055	0.8	2.1	0.02	0.07	*	11	*	0.01	
50°F @4K	GASOLINE - TIER 2 UNLEADED	0.044	0.080	0.6	1.7	0.02	0.05	.*	16			

	FUEL TYPE	NOx	(g/mi)	CO (g/mi)		
grade the company of the contract of the contr	FUEL TYPE	CERT	STD	CERT	STD	
HWFET @ 50K	GASOLINE - TIER 2 UNLEADED	0.01	0.07			
HWFET @ UL	GASOLINE - TIER 2 UNLEADED	0.01	0.09			
20°F @ 50K	GASOLINE-COLD CO LOW OCTANE			2.0	10.0	

SFTP EXHAUST EMISSION STANDARDS AND CERTIFICATION LEVELS

To the entire of		77.93	US06			SC0	3	COMPOSITE			
	FUEL TYPE		NMHC+NOx (g/mi)	CO (g/mi)	PM (mg/mi)	NMHC+NOx (g/mi)	CO (g/mi)	NMOG+NOx (g/mi)	CO (g/mi)	PM (mg/mi)	
@ 4K	GASOLINE - TIER 2 UNLEADED	CERT	0.07	3.9		0.03	0.2				
		STD	0.14	8.0		0.20	2.7				
		CERT	*	*	*	*	*	0.054	*	*	
@ UL	GASOLINE - TIER 2 UNLEADED	STD	*	*	*	*	*	0.103	*	*	
		BIN						0.130	SWANI		

WHOLE VEHICLE EVAPORATIVE EMISSION STANDARDS AND CERTIFICATION LEVELS

			WHOLE	VEHICLE	EVAPORA'	TIVE TESTIN	NG		
EVAPORATIVE FAMILY	FUEL TYPE	3DHS (g/test) @ UL			2DI	HS (g/test) @	RL (g/mi) @ UL		
		CERT	STD	FEL	CERT	STD	FEL	CERT	STD
HHYXR0140ARE	GASOLINE - CA PHASE 2	0.29	0.50	*	0.38	0.65	*	0.02	0.05

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ORVR / FUI	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				
HHYXR0140ARE	GASOLINE - TIER 2 UNLEADED	0.04	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; 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; 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	() () ()	PZEV TYPE
HYUNDAI	G80 AWD	PC	5.0	SA8	HHYXR0140ARE	1	F	rk:
HYUNDAI	G80 RWD	PC	5.0	SA8	HHYXR0140ARE	1	F	*