California Environmental Protection Agency

⊘ Air Resources Board

GENERAL MOTORS LLC. Executive Order: A-006-1976

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

Page 1 of 4

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 GROUP INFORMATION													
MODEL	TES	T GROUP	T	VEHIC	CLE CLASS(E			ΔTE	GORY	E	UEL TYPE		
YEAR	IES	GROUP	ļ	VEHIC	JEE CLASS(E		FUEL CATEGORY			PUELTIPE			
2016	GGMX	W02.5001			PC		DEDICATED SINGLE FUEL VEHICLE G			SASOLINE			
US	SEFUL L	IFE (miles)		VE	HICLE EMISS	ION CATE	GORY	_IN	ITERIM / IN	TERMEDIA	ERMEDIATE IN-USE STD		
EXH/C	RVR	EVAP			FTP	S	FTP		FTP		SFTP		
1200	000	150000		COUNT	TIER2 BIN4 ED AS ARB V2 ULEV		2 SFTP NDARD		*		*		
SPECI	AL FEA		HAUS TEMS		ION CONTRO	L	OBD S	TAT	JS	ENGIN	E DISPLACEMENT (L)		
1		TWC(2),	H025	(2), D	FI		FULL	AL	L MODELS				
*			*				PARTIAL * 2.5				2.5		
*			*			PA	PARTIAL WITH * FINES						
EVAPORATIVE & REFUELING (EVAP/ORVR) FAMILY INFORMATION													
EVAP	/ ORVR	FAMILY	EVA	PORATIV	E STD CATE	GORY	EVAP EMI: VEHICLI			SPECIA	AL FEATURES		
GG	MXR012	0818		:	LEV 2		PC				*		
GG	MXR0133	3810			LEV 2		PC *						
					EMISSION C	REDIT INF	ORMATION						
ALLOWANCE FOR TEST GROUP BASELINE PZEV AT PZEV TZEV							G CREDIT FO N-PZEV ZERO EVAP	RO- NMOG CR		EDIT FOR	OPTIONAL EXH. STD FOR WORK TRUCKS		
	* * *								,	N N			
* * * NMOG AND FLEET AVERAGE INFORMATIO													
										NOV EL EET STD			
NMOG RAF CH4 RAF FTP NMOG/NMHC RATIO HCHO/NMHC				IHC RATIO	HC RATIO PC+LDT		OG+NOX FLEET STD C+LDT (0-3750 LVW) (g/mi)		NMOG+NOX FLEET STD LDT (3751 LVW-8500 GVWR) + MDPV (g/mi)				
*		*	1.	04		*	0.093 0.110			0.110			

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.

⊘ Air Resources Board

GENERAL MOTORS

Executive Order: A-006-1976

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

Page 2 of 4

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 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).

BE IT FURTHER RESOLVED: The listed vehicle models are federally certified, and are certified under the provisions of 13 CCR Section 1961.2(a)(12) and the incorporated test procedures.

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 April 2015.

Annette Hebert, Chief

Emissions Compliance, Automotive Regulations and Science Division

Executive Order: A-006-1976 New Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles Page 3 of 4

⊘ Air Resources Board

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)		HC (mg		PM (g/mi)		
10 TO		CERT	STD	CERT	STD	CERT	STD	CERT	STD	CERT	STD	
FTP@50K	*	*	*	*	*	*	*	*	* .	*	*	
FTP@UL	GASOLINE - TIER 2 UNLEADED	0.019	0.070	1.3	2.1	0.01	0.04	1	11	*	0.01	
50°F @4K	*	*	*	*	*	*	*	*	*			

and by a contract on	FUEL TYPE	NOx	(g/mi)	CO (g/mi)		
	FUEL TYPE	CERT	STD	CERT	STD	
HWFET @ 50K	*	*	*	The second seconds		
HWFET @ UL	GASOLINE - TIER 2 UNLEADED	0.001	0.05			
20°F @ 50K	GASOLINE-COLD CO LOW OCTANE		32 32 33	3.1	10.0	

SFTP EXHAUST EMISSION STANDARDS AND CERTIFICATION LEVELS

				US06		SC03	3	COM	MPOSITE	
	FUEL TYPE		NMHC+NOx (g/mi)	CO (g/mi)	PM (mg/mi)	NMHC+NOx (g/mi)	CO (g/mi)	NMHC+NOx (g/mi)	CO (g/mi)	PM (mg/mi)
	GASOLINE	CERT	0.04	4.1	Called San	0.03	2.5			Mary Mary
@ 4K	- TIER 2 UNLEADED	STD	0.14	8.0		0.20	2.7			
		CERT	*	*	*	*	*	*	*	*
@ UL	*	STD	*	*	*	*	*	*	*	*
		BIN		WAS IN				*		

WHOLE VEHICLE EVAPORATIVE EMISSION STANDARDS AND CERTIFICATION LEVELS

EVADODATIVE			WHOLE \	RL (g/mi) @ UL						
EVAPORATIVE FAMILY	FUEL TYPE	3DH:	S (g/test) (D UL	2DI	HS (g/test) (KE (g/iii) @ OE			
		CERT	STD	FEL	CERT	STD	FEL	CERT	STD	
GGMXR0120818	GASOLINE - TIER 2 UNLEADED	0.34	0.50	*	0.58	0.65	*	0.00	0.05	
GGMXR0133810	E10-EPA	0.253	*	*	0.296	*	*	0.00	*	
GGMXR0133810	GASOLINE - TIER 2 UNLEADED	0.20	0.50	*	0.29	0.65	*	0.00	0.05	

California Environmental Protection Agency

⊘ Air Resources Board

GENERAL MOTORS LLC. Executive Order: A-006-1976

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

Page 4 of 4

ORVR / FU	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 R (g/test	IG TEST) @ UL		IG TEST) @ UL	BLEED CANISTER TEST (g/test) @ 4K					
	FUEL TYPE	CERT	STD		CERT	STD	CERT	STD	CERT	STD				
GGMXR0133810	GASOLINE - TIER 2 UNLEADED	0.01	0.20	. *	*	*	*	*	*	*				
GGMXR0120818	GASOLINE - TIER 2 UNLEADED	0.02	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; 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 sparkignited 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

2016 MODEL YEAR: VEHICLE MODELS INFORMATION

- Ł			4								
	MAKE	MODEL		VEH CLASS		ENGINE TRANS TYPE		EVAPORATIVE FAMILY	EXH ECS	OBD	PZEV TYPE
	CADILLAC	ATS		PC		2.5	SA6	GGMXR0120818	1	F	*
	CHEVROLET	IMPALA		PC		2.5	SA6	GGMXR0133810	1	F	*
	CHEVROLET	MALIBU LIMITED		PC		2.5	SA6	GGMXR0133810	1	F	*