GREENKRAFT INC.

EXECUTIVE ORDER A-398-0030 New On-Road Heavy-Duty Motor Vehicles

## **⊘** Air Resources Board

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

IT IS ORDERED AND RESOLVED: The following on-road motor vehicles with a manufacturer's GVWR over 14000 pounds are certified as described below. Production vehicles shall be in all material respects the same as those for which certification is granted.

						El	NGINE DESCRIPTION	N				
MANUFACTURER		EXECUTIVE ORDER	MODEL YEAR	ENGINE FAMILY		ENGINE SIZES (L)	FUEL TYPE 1	STANDARDS & TEST PROCEDURE	INTENDED SERVICE CLASS <sup>2</sup>	ECS & SPECIAL FEATURES 3	DIAGNOSTICS	
GREENKRAFT INC.		A-398-0028	2017	HGKTE06.0PRO		6.0	LPG	Otto	HDO	2TWC, 2HO2S(2),SFI	EMD+	
Gasoline, LPG o	r Al	Icohol Vehicle	s Only					VEHICLE DESCRI	PTION			
EVAPORATIVE		FUEL TANK		VEHICLE					ENGINE	ENGINE MODELS / CODES		
FAMILY	(K		ons)	MODEL YEAR		VI	EHICLE MAKE & MO	DDELS	(L)	(rated power, in hp)		
HGKTF0000PRO	15	50 3	30		Chevrolet 4500; GMC: 4500, Savana 4500, Savana 3500, Savana 2500				6.0	V8 / 60585111 (323), 20 (322), 30 (323), 40 (323), 50 (307), 60 (307)		
HGKTF0000PRO	15	30,	30, 50				Chevrolet G45	0	6.0	V8 / 60585111 (323), 20 (322), 30 (323), 40 (323), 50 (307), 60 (307)		
HGKTF0000PRO	15	50 5	50		Greenkraft: 1061, G Series; Isuzu NPR; Freightliner: S2G, MT45, MT55, B2 School Bus				6.0	V8 / 60585111 (323), 20 (322), 30 (323), 40 (323), 50 (307), 60 (307)		

\*=not applicable; GVWR=gross vehicle weight rating; 13 CCR xyz=Title 13, California Code of Regulations, Section xyz; 40 CFR 86.abc=Title 40, Code of Federal Regulations, Section 86.abc; L=liter; K=1000 miles; hp=horsepower; kw=kilowatt;

L=litter; K=1000 miles; hp=horsepower; kw=kilowatt;

CNG/LNG=compressed/liquefied natural gas; LPG=liquefied petroleum gas; E85=85% ethanol fuel; MF=multi fuel a.k.a. BF=bi fuel; DF=dual fuel; FF=flexible fuel;

LIM/H HDD=light/medium/heavy heavy-duty diesel; UB=urban bus; HDO=heavy duty Otto;

ECS=emission control system; TWC/OC=three-way/oxidizing catalyst; WU (prefix) =warm-up catalyst; DF=diesel particulate filter; HO2S/O2S=heated/oxygen sensor; HAFS/AFS=heated/air-fuel-ratio sensor (a.k.a., universal or linear oxygen sensor); TBI=throttle body fuel injection; SFI/MFI=sequential/multi port fuel injection; DGI=direct gasoline injection; GCARB=gaseous carburetor; IDI/DDI=indirect/direct diesel injection; TC/SC=turbo/super charger; CAC=charge ir cooler; EGR=exhaust gas recirculation; PAIR/AIR=pulsed/secondary air injection; SPL=smoke puff limiter; ECM/PCM=engine/powertrain control module; EM=engine modification; 2 (prefix)=parallel; (2) (suffix)=in series;

EMD=engine manufacturer diagnostic system; OBD(F) / (P) / (\$)=full / partial with fine / on-board diagnostic; (2012-08-20)

Following are: 1) the FTP exhaust emission standards or family emission limit(s) as applicable under 13 CCR 1956.1 (urban bus) or 13 CCR 1956.8 (other than urban bus); 2) the SET and NTE limits under the applicable California exhaust emission standards and test procedures for heavy-duty diesel engines and vehicles (Test Procedures); and 3) the corresponding certification levels, in g/bhp-hr, for this engine family. "Diesel" CO, SET and NTE certification compliance may have been demonstrated by the manufacturer as provided under the applicable Test Procedures in lieu of testing. (For flexible- and dual-fueled engines, the CERT values in brackets [] are those when tested on conventional test fuel. For multi-fueled engines, the STD and CERT values for default operation permitted in 13 CCR 1956.1 or 13 CCR 1956.8 are in parentheses.)

in g/bhp-hr	NMHC		NOx		NMHC+NOx		СО		PM		нсно	
	FTP	SET	FTP	SET	FTP	SET	FTP	SET	FTP	SET	FTP	SET
STD	0.14	*	0.20	*	*	*	14.4	*	0.01	*	0.01	*
FEL	*	*	*	*	*	*	*	*	*	*	*	*
CERT	0.002	*	0.12	*	*	*	4.5	*	0.001	*	0.01	*
NTE	*		*		*		*		*		*	

g/bhp-hr=grams per brake horsepower-hour; FTP=Federal Test Procedure; EURO=Euro III European Steady-State Cycle, including RMCSET=ram mode cycle supplemental emissions testing; NTE=Not-to-Exceed; STD=standard or emission test cap; FEL=family emission limit; CERT=certification level; NMHC/HC=non-methane/hydrocarbon; NOx=oxides of nitrogen; CO=carbon monoxide; PM=particulate matter; HCHO=formaldehyde; (Rev.: 2007-02-26

BE IT FURTHER RESOLVED: Certification to the FEL(s) listed above, as applicable, is subject to the following terms, limitations and conditions. The FEL(s) is the emission level declared by the manufacturer and serves in lieu of an emission standard for certification purposes in any averaging, banking, or trading (ABT) programs. It will be used for determining compliance of any engine in this family and compliance with such ABT programs.

BE IT FURTHER RESOLVED: For the listed vehicle models the manufacturer has submitted the materials to demonstrate certification compliance with 13 CCR 1965 (emission control labels), 13 CCR 1976(b)(1)(F) {evaporative emission standards}, 13 CCR 2035 et seq. (emission control warranty), and 13 CCR 2235 [fill pipes and openings of motor vehicle fuel tanks]. (The braces { } are for gasoline, LPG or alcohol fueled vehicles only.)

Vehicles certified under this Executive Order must 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 June 2017.

Annette Hebert, Chief

Emissions Compliance, Automotive Regulations and Science Division