UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL VEHICLE AND FUEL EMISSIONS LABORATORY
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ANN ARBOR, MICHIGAN 48105-2498

OFFICE OF
AIR AND RADIATION

June 26, 2017

CD-17-10 (All Industries)

SUBJECT: Update of EPA Standardized Naming Conventions for Engine Family, Test Group, Evaporative/Refueling Family, Permeation Family, Emission Family, and Durability Group

Dear Manufacturer:

The purpose of this letter is to update the consolidated family group naming conventions guidance that was issued on August 31, 2015 (CD-15-19). This update adds the naming convention for Heavy-Duty Highway Trailer families and revises the naming convention for Marine CI, Highway Motorcycle, Off-Highway Motorcycle/All-Terrain Vehicle/Utility Vehicle, and Snowmobile engine families. A complete description of all 12 characters of Engine Family, Test Group, Evaporative/Refueling Family, Permeation Family, Emission Family, and Durability Group names for all industries is included with this letter for your reference.

If you have any questions, please contact your certification team representative.

Sincerely,

Byron J. Bunker, Director
Compliance Division
Office of Transportation and Air Quality

Enclosure

Table 1: Family/Group Naming Convention Overview

Family Name Position	Description
1	Model Year Code
2-4	Manufacturer Code
5	Industry Sector Code
6-9	Engine Displacement or Family Type Descriptor[1]
10-12	Industry Specific Assigned Code or Manufacturer-assigned characters used to create a unique family name[2]

Table 2: Family Name Position 1 - Model Year

Code	Description	Code	Description
1	2001	M	2021
2	2002	N	2022
3	2003	P	2023
4	2004	R	2024
5	2005	S	2025
6	2006	T	2026
7	2007	V	2027
8	2008	W	2028
9	2009	X	2029
A	2010	Y	2030
B	2011	1	2031
C	2012	2	2032
D	2013	3	2033
E	2014	4	2034
F	2015	5	2035
G	2016	6	2036
H	2017	7	2037
J	2018	8	2038
K	2019	9	2039
L	2020		

[1] For dual or variable displacement families, enter the maximum displacement. If the displacement is given in liters, the decimal point counts as a digit. In all cases, the displacement will be read in liters if a decimal point is included. If there is no decimal point, it will be read in cubic inches or cubic centimeters, except for Marine CI which will be read in liters.

[2] Enter any combination of valid characters in positions 10 through 12 (or 11 through 12 as applicable) in order to provide a unique identification for an engine family name. It is recommended that numbers and letters be selected that minimize possible confusion.

Table 3: Family Name Positions 2-4 - EPA Manufacturer Code

Code	Description
***	Insert the 3-character alphanumeric EPA manufacturer code assigned to your company in positions two through four of the family name.

Table 4: Family Name Position 5 - Industry Sector

Code	Description
A	California-Only Medium-Duty Vehicles
B	Large Nonroad Spark-Ignition Engines (>19 kiloWatts)
C	Highway Motorcycles
D	Complete Heavy-Duty Highway Vehicles (8,500 to 14,000 pounds GVWR; tested on chassis dynamometer)
E	Heavy-Duty Highway Gasoline (otto-cycle/spark ignition) Engines (>8500 pounds GVWR)
F	Heavy-Duty Evaporative Families
G	Locomotives (freshly manufactured)
H	Heavy-Duty Highway Diesel (compression ignition) Engines (>8,500 pounds GVWR)
I	(Reserved)
J	Light-Duty Vehicles and Light-Duty Trucks/Medium-Duty Passenger Vehicles
K	Locomotives (remanufacture system)
L	Nonroad Compression-Ignition Engines
M	Marine Spark-Ignition Engines
N	Marine Compression-Ignition Engines (including IMO)
O	(Reserved)
P	Permeation Families
Q	(Reserved)
R	Light-Duty Evaporative/Refueling Families
S	Small Nonroad Spark-Ignition Engines (<19 kiloWatts)
T	Light-Duty Trucks / Medium-Duty Passenger Vehicles
U	(Reserved for California ARB)
V	Light-Duty Vehicles
W	(Reserved)
X	Off-Highway Motorcycles / All-Terrain Vehicles / Utility Vehicles
Y	Snowmobiles
Z	(Reserved)
0	(Reserved for California ARB)
1	(Reserved for California ARB)
2	Heavy-Duty Highway Tractors and Vocational Vehicles

Code	Description
3	Heavy-Duty Highway Trailers
4	(Reserved)
5	(Reserved)
6	(Reserved)
7	(Reserved)
8	(Reserved)
9	(Reserved)

Table 5: Family Name Positions 6-9 - Engine Displacement or Family Type Descriptor

Industry Code	Industry Description	Code/Value	Description
A	California-Only Medium-Duty Vehicles	XX.X or .XXX	Engine displacement units in liters
B	Large Nonroad Spark-Ignition Engines (>19 kiloWatts)	XX.X or .XXX	Engine displacement units in liters
C	Highway Motorcycles	XX.X, X.XX or .XXX	Engine displacement units in liters
		XXXX	Engine displacement units in cubic centimeters
D	Complete Heavy-Duty Highway Vehicles (8,500 to 14,000 pounds GVWR; tested on chassis dynamometer)	XX.X or .XXX	Engine displacement units in liters
E	Heavy-Duty Highway Gasoline Engines (otto-cycle/spark ignition >8500 pounds GVWR)	XX.X or .XXX	Engine displacement units in liters
		XXXX	Engine displacement units in cubic inches
F	Heavy-Duty Evaporative Families	XXXX	Total capacity in grams of all canisters
G	Locomotives (freshly manufactured)	XX.X or .XXX	Engine displacement units in liters (engine total)
		XXXX	Engine displacement units in cubic inches (per cylinder)
		IDLE	Idle Control System
		COMP	Non-OEM Component
H	Heavy-Duty Highway Diesel (compression ignition) Engines (>8,500 pounds GVWR)	XX.X or .XXX	Engine displacement units in liters
		XXXX	Engine displacement units in cubic inches

Industry Code	Industry Description	Code/Value	Description
J	Light-Duty Vehicles and Light-Duty Trucks/Medium-Duty Passenger Vehicles	XX.X or .XXX	Engine displacement units in liters
K	Locomotives (remanufacture system)	XX.X or .XXX	Engine displacement units in liters (engine total)
		XXXX	Engine displacement units in cubic inches (per cylinder)
		IDLE	Idle Control System
		COMP	Non-OEM Component
L	Nonroad Compression-Ignition Engines	XX.X or .XXX	Engine displacement units in liters
		XXXX	Engine displacement units in cubic inches
M	Marine Spark-Ignition Engines	XX.X or .XXX	Engine displacement units in liters
		XXXX	Engine displacement units in cubic inches
N	Marine Compression-Ignition Engines (including IMO)	XX.X or .XXX	Engine displacement units in liters (engine total)
		XXXX	Engine displacement units in liters (per cylinder)[3]
P	Permeation Families (Small Spark-Ignition, Large Spark-Ignition, Marine Spark-Ignition or Portable Fuel Containers)	TANK	Fuel Tank Permeation
		PFCS	Portable Fuel Container Permeation
		CAPS	Fuel Cap Permeation
		LINE	Fuel Line Permeation
		MDRN	Marine Diurnal
		LDRN	Large SI Diurnal
		VSSL	Vessel
		HHEQ	Handheld Equipment
		NHEQ	Nonhandheld Equipment
R	Light-Duty Evaporative/Refueling Families	XXXX	Total capacity in grams of all canisters
S	Small Nonroad Spark-Ignition Engines (<19 kiloWatts)	XX.X or .XXX	Engine displacement units in liters
		XXXX	Engine displacement units in cubic centimeters
T	Light-Duty Trucks / Medium-Duty Passenger Vehicles	XX.X or .XXX	Engine displacement units in liters
V	Light-Duty Vehicles	XX.X or .XXX	Engine displacement units in liters

[3] Use this format if the total engine displacement is greater than 99.9 liters.

Industry Code	Industry Description	Code/Value	Description
X	Off-Highway Motorcycles / All-Terrain Vehicles / Utility Vehicles	XX.X, X.XX, or .XXX	Engine displacement units in liters
		XXXX	Engine displacement units in cubic centimeters
Y	Snowmobiles	XX.X, X.XX, or .XXX	Engine displacement units in liters
2	Heavy-Duty Highway Tractors and Vocational Vehicles[4]	VOCV	Vocational Vehicle
		TRAC	Tractor
3	Heavy-Duty Highway Trailers	TRLR	Trailer

Table 6: **Family Name Positions 6-12 - Off-Highway Motorcycles / All-Terrain Vehicles/Utility Vehicles Permeation Families (Only for Industry Sector "P")**

Position	Code/Value	Description
6-10	METAL	Metal Fuel Tank
6	P	Plastic
	F	Fiberglass
7	0	No Barrier
	1	Inherently Low/Zero Permeation Material
	2	Continuous Multi-Layer with Permeation Barrier
	3	Non-Continuous Barrier Platelets
	4	Barrier Surface Treatment (e.g. fluorination, sulfonation)
	5	Other Permeation Control Technology
8-9	XX	For tanks with no barrier (i.e., values of 0, 1, 4, or 5 for Position 7: Control Strategy), enter the least nominal tank wall thickness, rounded to the nearest millimeter (mm)
	XX	For tanks with a barrier (i.e., values of 2 or 3 for Position 7: Control Strategy), enter the least weight percentage (wt.%) of barrier material within the group of fuel tanks
10	B	Blow-Molded Tank
	T	Thermoformed Tank
	R	Rotational Molded Tank
	J	Injection Molded Tank
	O	Other Production Method
11-12	**	Manufacturer-assigned characters used to create a unique family name

[4] Vocational tractors subject to the provisions of 40 CFR §1037.630 remain part of the vocational regulatory subcategory. Family names for these vehicles should reflect the vehicle type "Vocational Vehicle".

Table 7: **Family Name Positions 6-12 - Small Nonroad Spark-Ignition Engines (<19 kiloWatts) (Only for Industry Sector "S")**

Position	Code/Value	Description
6-9	XX.X or .XXX	Engine displacement units in liters
	XXXX	Engine displacement units in cubic centimeters
10	1	Class I: Nonhandheld equipment engines greater than or equal to 100 cc and less than 225 cc in displacement
	2	Class II: Nonhandheld equipment engines greater than or equal to 225 cc in displacement
	3	Class III: Handheld equipment engines less than 20 cc in displacement
	4	Class IV: Handheld equipment engines greater than or equal to 20 cc but less than 50 cc in displacement
	5	Class V: Hand held equipment engines greater than or equal to 50 cc in displacement
11-12	**	Manufacturer-assigned characters used to create a unique family name

Table 8: Family Name Positions 10-12 - Manufacturer-Assigned Characters

Position	Code/Value	Description
10-12	***	Manufacturer-assigned characters used to create a unique family name

Table 9: Light-Duty Durability Group Name

Position	Code/Value	Description
1	See Table 1 for codes	Model Year
2-4	Manufacturer Code	Three character code assigned by EPA for each Manufacturer
5	**Combustion Cycle Code**	
	2	Otto Cycle - two stroke
	G	Otto Cycle - four stroke
	A	Diesel Cycle - two stroke
	D	Diesel Cycle - four stroke
	E	Dedicated Electric
	H	Hybrid Electric with Otto cycle - 4 stroke engine (includes PHEV vehicles)
	J	Hybrid Electric with Diesel cycle 4 stroke engine (includes PHEV vehicles)
	C	Fuel Cell
6	**Engine Type Code**	
	P	Piston
	R	Rotary
	E	Electric (including fuel cell)
	H	Hybrid Electric (including PHEV)
	A	Other
7-9	**Fuels Used (8 and 9 are for second and third fuels used)**	
	G	Gasoline
	D	Diesel
	M	Methanol
	E	Ethanol
	C	CNG
	L	LNG
	P	LPG
	V	Electric (Power Grid Electricity)
	I	Hydrogen
	N	Not Applicable (for second and third fuels)
10	*	Manufacturer-Assigned Character used to create a unique group name or Manufacturer-Assigned Battery Code if applicable
11-12	**	Manufacturer-Assigned Characters used to create a unique group name including Manufacturer-Assigned Catalyst Code if applicable