

CAP2000 Changes to EPA Data Base - 2001 Model Year and Later

1. Durability Group Information (DG).

The following fields constitute Durability Group Information and should be entered through ESI data submission..

Field Name	Record Type	Position	Valid Range/Comments
Durability Group Name	ER (new)	5-16	ER record is required if CAP2000 field (col 91 on E1) is 2 and is to be placed between E1 and ZZ records.
Catalyst Precious Metal Combination	ER (new)	18-19	Required if the DG (Durability Group) name is not in the data base 1 - platinum based oxidation catalyst 2 - palladium based oxidation catalyst 3 - platinum and palladium oxidation catalyst 4 - platinum and rhodium three-way catalyst 5 - palladium and rhodium three way catalyst 6 - platinum and palladium and rhodium three way catalyst
Fuel Combination	ER (new)	21	Required if the DG name is not in the data base S - Single fuel D - Dual fuel F - Flexible fuel
Combustion Cycle	E1	50	Note: New code 'C' is added for Fuel cell vehicles G - Otto Cycle Piston D - Diesel Cycle R - Otto Cycle Rotary 2 - Two Stroke Cycle T - Turbine H - Hybrid E - Electric A - Other C - Fuel cell
Ignition Type	E1	52	Note: New code 'N' is added S - Spark C - Compression N - Not applicable
Basic Fuel Metering System	E1	54-55	Note: New definition of valid codes (Valid codes are different from the previous ESI data field definition) 5 - TBI 12 - Port Fuel Injection 13 - Carburetor 14 - CNG Mixer Unit 98 - None (Electric) 99 - Other (Contact EPA Prior to Use)

Catalyst construction	E1	62-63	Note: New definition of valid codes (Valid codes are different from the previous ESI data field definition) 8 - No Catalyst 9 - Unheated Monolith Catalyst 10 - Heated Monolith Catalyst 11 - Unheated Metal Catalyst 12 - Heated Metal Catalyst 13 - Unheated Beaded Catalyst 14 - Heated Beaded Catalyst 15 - Unheated Monolith and Metal Catalyst 16 - Heated Monolith and Metal Catalyst 99 - Other (Contact EPA Prior to Use)
Trap (particulates)	E1	65-66	Note: Same as before 0 - None 1 - Trap - Active Regeneration 2 - Trap - Continuous Regeneration 3 - Trap - Continuous Regen + Fuel Additive 99 - Other (Contact EPA prior to use) no changes
CAP2000	E1	91	Note: Defaults to 0. 0 - Prior to CAP2000 1 - CAP2000 2 - Full CAP2000 with Durability Group data. *

If the DG name already exists in the data base, fields other than the DG name need not be filled out and they will be ignored if entered..

* For any new model year 2001 and later data this CAP2000 code of '2' has to be entered. Otherwise the data will be rejected. (The software will be changed to default it to 2 in the near future)

Durability Group Name:

Durability groups are named by a 12 digit name which is constructed as follows:

Character #	Description
1	Model year – use the same codes as test group
2, 3, 4	MFR – Use the same letter codes as test group
5	Combustion Cycle – See table below
6	Engine type – See Table below
7	Primary Fuel Used – See table below
8	Second fuel used. Use this field for dual fueled, flexible fuel and bi-fuel vehicles
9	Third fuel used
10, 11, 12	Open for manufacturers use (catalyst code)

Cycle Code for Durability Group Name

Cycle	Code
Otto Cycle - two stroke	2
Otto Cycle - four stroke	G
Diesel Cycle - two stroke	A
Diesel Cycle - four stroke	D
Dedicated Electric	E
Hybrid Electric with Otto cycle. / 4 stroke engine	H
Electric - fuel cell	C

Engine type Code for Durability Group Name

Engine Type	Code
Piston	P
Rotary	R
Electric	E
Hybrid Electric	H

Fuel code for Durability Group Name

Fuel Used	Code
Gasoline	G
Diesel	D
Methanol	M
Ethanol	E
CNG	C
LNG	L
LPG	P
Electric	V
N/A (for second or third fuel)	N
Hybrid Electric	Use code for the other fuel

2. Test Group Information

System number does not apply to a Test Group, but the value of 1 will be assigned to it due to the data base requirements regardless of what is entered in the input data record.

Field Name	Record Type	Position	
System Number	E1	18-19	'1' or leave it blank
Ignition Type	E1	52-52	A new code 'N' has been added S - Spark C - Compression N - Not applicable
DF Type	E2	47-47	A new code 'A' is added and the existing code 'Z' will be removed. 'A' - aged components installed on the emission data vehicle.
EERC	EE	all	Not applicable for Full CAP2000 application - New 'VE' record provided in VI instead.

3. VI (Vehicle Information)

Field Name	Record Type	Position	
Turbocharger/Supercharger	V1	80	New field (required) 'T' - Turbocharger 'S' - Supercharger 'N' - None
Catalyst	V1	82-83	New field (required) 1 - Oxygen Catalyst Only 2 - Reduction Catalyst 3 - 3-Way Catalyst 4 - 3-Way + Oxygen Catalyst 5 - 3-Way + Oxygen Catalyst (Light-Off / Close Coupled) 6 - Heated Catalyst 7 - Heated Catalyst (Light-Off / Close Coupled) 8 - No Catalyst 99 - Other (Contact EPA Prior to Use)
Input Record Type	VE	1-2	VE (new record)
EERC Process Code	VE	3	For Add: 'A' or blank For Delete: 'D'

EERC	VE	5-6	01 - Combustion Chamber / Non - Conventional Valve Train 02 - Engine Modification (Diesel Only) 05 - Thermal Reactor 10 - Air Pump 11 - Pulsating Air System (Pulsating Air Injection) 14 - Closed Loop (Heated O ² Sensor) 15 - 3-Way + CL (Heated O ² sensor + Feedback) 16 - Oxidation Catalyst 17 - Reduction Catalyst 18 - Three-way Catalyst 19 - Closed Loop (Non-Heated O ² sensor) 20 - Three-way Catalyst plus Closed Loop (Non-heated Oxygen sensor and feedback loop) 21 - Closed-Loop Air Injection 31 - Ported EAR 32 - Back Pressure EAR 33 - Venture Vacuum Amplified EAR 34 - Direct Throttle Activated EAR 35 - Other Activated EAR 41 - Multiple Point Fuel Injection 42 - Throttle Body Fuel Injection 50 - Turbocharger 52 - Supercharger 60 - Detonation Sensor 61 - Electronic Controls - Analog 62 - Electronic Controls - Digital 91 - HC Absorber 92 - NOX Absorber 93 - Electrically Heated Catalyst 94 - Fuel Heated Catalyst 95 - Energy Storage Device (e.g.: Hybrid Vehicle) 96 - Regenerative Brakes 99 - Other
Fuel System	VF	36-37	New field (required) 0 - Multiple Carburetors 1 - 1 BBL 2 - 2 BBL 3 - 3 BBL 4 - 4 BBL 5 - TABI 6 - Mechanical MCI 7 - Elec. MCI - Simultaneous 8 - Elec. MCI - Sequential 9 - Central Port Injection 10 - Elec. CPI - Simultaneous 11 - Elec. CPI - Sequential 14 - C.G. Mixer Unit 98 - None (Electric) 99 - Other (Contact EPA Prior to Use)

Carry over of non-CAP2000 or interim CAP2000 (CAP2000 code of 1) vehicle configuration to a full CAP2000 test group.

Existing carry-over procedure still applies but the new data applicable to full CAP2000 must be entered at the time of carry-over., i.e., Turbo/Super charge, Catalyst, VE records and Fuel System.

4.MTDS

Field Name	Record Type	Position	
Aged emission components usage	T1	75-77	(This field will be an optional field now but may become a required field when the EPA’s software is updated in the future.) Enter the age of the emission control system components (in thousands of miles) or ‘NA’ as in the following examples: NA - Normal 4k emission or fuel economy data vehicle was used 50 - 50k aged components used on test vehicle 100 - 100k aged components used on test vehicle 120 - 120k aged components used on test vehicle 150 - 150k aged components used on test vehicle

The above new field will become a required field when EPA’s software is updated in the near future.

5. Summary Sheet

Field Name	Record Type	Position	Valid Range/Comments
Process Code	X1	3	‘C’ is added to allow updating the CAP2000 conditional certificate code to ‘2’ without reprocessing or replacing Summary Sheet data.
CAP2000 conditional certificate	X1	58	1 - EPA confirmatory testing is pending(valid for process code of ‘A’ , blank or ‘R’) 2 - confirmatory test complete and entered

Once the conditional certificate has been issued for a Summary Sheet index and EPA tests that had been pending have been completed:

- a. Contact your cert team member to unlock summary sheet.
- b. Update CFEIS summary sheet with EPA test data.
- c. Make sure that the summary sheet is processed correctly.
- c. Change the “CAP2000 Conditional Certificate” code to ‘2’ by submitting Summary Sheet X1 and ZZ records with the process code ‘C’ and other key fields, i.e., mfr code, Test Group name, Summary Sheet index number.