
▶ **Current Status of China VIAQ
Regulations**

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- ▶ The Standard specifies the emission limits of eight kinds of volatile substances in vehicles of Category M1 including benzene, toluene, xylene, ethylbenzene, styrene, formaldehyde, acetaldehyde and acrolein as well as classification methods for emission concentrations of volatile organic compounds in vehicles.
- ▶ The Standard applies to the evaluation of emission of volatile pollutants in new vehicles of Category M1 (including fuel vehicles, pure electric vehicles, hybrid vehicles and other new energy vehicles)



Terms and definitions

- ▶ Total volatile organic compounds (TVOC)
- ▶ Volatile organic compounds sampled by use of Tenax GC or Tenax TA, analyzed by use of nonpolar column (polarity index less than 10), with retention time between n-hexane and n-hexadecane, which are measured according to " HJ/T400-2007 Sampling determination of Interior Volatile Organic Compounds and Carbonyl Compounds in Vehicles ".
- ▶ Pollution index
The ratio between the actual measured concentration of a pollutant defined by the Standard and the standard limit or reference value.



Limit of Pollutants

Emission limits of volatile organic pollutants in vehicles
Unit: mg/m³

No.	Object	Concentration Requirement
1	苯 benzene	≤0.06
2	甲苯 toluene	≤1.00
3	二甲苯 xylene	≤1.00
4	乙炔 ethylbenzene	≤1.00
5	苯乙烯 styrene	≤0.26
6	甲醛 formaldehyde	≤0.10
7	乙醛 acetaldehyde	≤0.20
8	丙烯醛 acrolein	≤0.05

Concentration Ranking

- ▶ The comprehensive pollution index I is defined as:

$$I = \sum_{i=1}^9 I_i$$

- ▶ Where, $I_i = C_i/L_i$ represents the pollution index of the No. i pollutant, C_i represents the measured concentration of this pollutant, and L_i represents the corresponding limit
- ▶ For TVOC, the calculated reference value of L_i is 8.00.

Grade	Pollution index I
A	$I < 1.0$
B	$1.0 \leq I < 6.0$
C	$I > 6.0$



Provisions on vehicle type test

- ▶ Type test vehicle is a new produced vehicle that is offline within $28 \pm$ days and whose trim has not been changed by the sellers and the users without authorization. Before test, no modifications that may affect the emission of volatile pollutants in the test vehicle shall be made by anyone, unless these measures are part of the manufacturing processes, or the transportation processes.
- ▶ Before formal experiment, the test vehicle may be subject to 24h static pretreatment at the ambient temperature of $25 \pm 2^\circ\text{C}$. During the pretreatment, all the doors and windows of the vehicle are open, the engine and all electrical equipment in the vehicle are turned off, and all of the interior protective films for the purpose of transport protection are removed.
- ▶ The offline time (28 ± 5) days of vehicles specified in the Standard refers to the time for vehicle type test and production consistency test, and the vehicles with offline time of more than 33 days all shall meet the requirements of limits in the Standard.



Information disclosure

- ▶ The vehicle manufacturing enterprises or authorized agents shall formally report to the competent department of environmental protection for record, and make public the information about emission of volatile pollutants in the vehicles of the types for batch production according to the relevant provisions of the Ministry of Environmental Protection; the information filed and made public includes the measurement results of emission of volatile pollutants in vehicles and the information about configuration of main interior parts and components affecting volatile pollutants in vehicles.



Date of Standard implementation

- ▶ **Filing and information disclosure**

From the day when the Standard is released, the filing and information disclosure of emission of volatile organic pollutants in vehicles can be carried out according to the Standard, the information disclosure content, methods and related requirements are subject to the provisions on environmental information disclosure of newly produced vehicles.

- ▶ **Sales and registration**

From December 31, 2017 (open), all sold and registered vehicles must meet the requirements of the Standard.

- ▶ **Production consistency inspection**

For the vehicles whose information about emission of volatile organic compounds in vehicles has been made public according to the Standard, their production consistency inspection is to be carried out starting from the date of information disclosure.

