

TEST REPORT

Project Name: XSNano fuel additive Road tests

Entrustment company: Xunsn International Group Co.,Ltd.

Test category: entrustment inspection

Send date: 2015—11—30

Ministry of transport industry energy monitoring center

Attention

1. The inspection reports are only responsible for the test sample provided;
2. The inspection report is invalid without the seal of inspection units;
3. The inspection report without the main inspection, audit and approve the person's signature is not valid;
4. Inspection report altered invalid;
5. Copy the invalid part of the inspection report, inspection reports replication is not re-test unit seal stamped invalid;
6. If objections to inspection reports should be received within fifteen days from the date of the inspection reports written complaint to the inspection unit, late inadmissible;
7. The test sample is perishable (volatile, water, etc.), or no sample left the Centre saved detected, or non-repeatable inspection center inspection report quality complaints inadmissible.

Entrustment company: Xunsn Intenational Group Co.,Ltd.

Inspection Unit: Ministry of motor transport industry energy use monitoring center

Address:, West Tucheng Road 8, Haidian District ,Beijing

Post Code: 100088

Test Result

Sample Name	XSNANO Fuel Additive	Model	50ML/Bottle
		Brand	XSNANO
Entrustment company	Xunsn International Group	Test category	entrustment inspection
manufacturer	Xunsn International Group	Samples Grade	Up to grade
Sample sender	XinJia Zhang	Sample Date	September 25, 2015
Number of samples	3 Bottles	Original number or production date	August 22, 2015
examination foundation	1.GB/T14951-2007 《Automobile fuel economy technology assessment method》 2.GB/T25348-2010 《Automobile fuel economy products use Technical conditions》	Test items	1. Automotive constant collation with fuel consumption; 2. Automotive most upscale (or sub-grade) Full throttle acceleration performance comparison test; 3. car free acceleration smoke (opacity method) collation.
Test results or conclusions	<p>Upon examination, Volkswagen SANTANA 3000 based on delegate units to provide added fuel vehicles in use compared with no add "XSNANO fuel additive", according to GB / T 14951-2007 "automobile fuel economy technology assessment method" Calculation:</p> <ol style="list-style-type: none"> 1. Urban running mode saving rate as is: + 10.72% 2. Suburbs running mode saving rate ac is: + 12.41% 3. High speed running mode Saving rate aq is: + 12.54% 4.The acceleration time contrast coefficient Kt is: 0.973 5. The vehicle exhaust emissions were significantly reduced. <p>After adding "XSNANO fuel additive" saving rate of the car, the acceleration time contrast coefficient and car exhaust emission limits even reached the GB / T 25438-2010 "automobile fuel economy products use technology" requirements.</p> <p style="text-align: right;">November 30, 2015</p>		
Remark	<ol style="list-style-type: none"> 1. The test is the "second five" focus on the promotion of the second batch of national highway and waterway transportation of energy-saving products (technology) elect product inspection. 2. The sample sampling by the China Enterprise Management Association of Transportation Energy Regulatory Commission. 3. The test prototypes for the Shanghai Volkswagen Automotive Co., Ltd. production at Volkswagen SANTANA 3000 type car, provided by the requester, the technical condition of compliance with the inspection requirements. 4. Sample package is white plastic bottle, added by the requester, add a ratio of 1: 10000 (volume ratio), were added after the pre-collation run 200km. 		

1. Task source and destination

By XUNSN INTERNATIONAL GROUP commission, Ministry of motor transport industry energy use monitoring center for its "XSNANO fuel additive" sample provided by the automobile road performance comparison test.

Volkswagen SANTANA 3000 type by the delegate units to provide added fuel vehicles in use and do not add "XSNANO fuel additives" in car road performance comparison test, assess the impact of the product on vehicle fuel economy, vehicle exhaust emissions.

2. Examination Foundation

2.1 GB/T14951—2007 《Automobile fuel economy technology assessment methods》

2.2 GB/T25348—2010 《Automobile fuel economy products use Technical conditions》

2.3 GB/T 17691-2005 《Vehicle compression ignition and gas fueled positive ignition engine and vehicle exhaust emission limits and measurement methods》

3. Sample

3.1 Sample Name: XSNANO FUEL ADDITIVE

3.2 Manufacturer: XUNSN INTERNATIONAL GROUP CO.,LTD.

3.3 Number of samples: 50ML 3 Bottle

3.4 Sample Grade: UP TO GRADE

3.5 Samples status: Normal

3.6 Description of the Sample and USE Method::

3.6.1 Description of the Sample: Samples of red-brown transparent liquid, packed in white plastic bottles and printed cartons.

3.6.2 Method: Samples provided by the requester. After the survey is completed the original car, 1: 10000 (volume ratio) mixed with 93 # GB (IV) petrol; original car inspection and testing of additives were using 93 # GB (IV) of gasoline.

4. TEST ITEMS

4.1 Cars constant speed fuel consumption collation

4.2 Compare car full throttle acceleration performance checks

4.3 Car free acceleration smoke (opacity method) collation.

5. Test conditions

5.1 Inspection location

Department of Transportation Highway Traffic Proving Ground (long straight road performance testing, engine testing room) and urban transport channel.

5.3 Test sample vehicle and major equipment

5.3.1 Test sample vehicle

Volkswagen SANTANA 3000 type in-use vehicles;

Fuel: 93 # GB (IV) petrol

5.3.2 Main equipment

Table 1 Main Equipment

No.	Name	Item No	Model	Remark
1	Speed Analyzer	PB.7.91.55	FLOWTRONIC 206/207	All In the test cycle
2	Flow meter	PB.7.91.56	FLOWTRONIC 210	
3	smoke opacimeter	PB.7.8.45	DiSmoke4000	
4	Comprehensive weather instrument	PB.7.8.260	DZM2-1	
5	Electronic truck scale	PB.7.91.24	ZCS-15A	
6	Engine tachometer	PB.7.8.290	RPM5300	
7	Engine exhaust analysis	MEXA 7100	Japan HORIBA	

6. TEST RESULT

6.1 Compare car constant speed fuel consumption data See Appendix Tables 2 and 3, the curve in Appendix 3

6.2 Cars full throttle acceleration performance comparison test data See Appendix Table 4, the curve Appendix Figures 4 and 5;

6.3 Car free acceleration smoke (opacity method) collation of data See Appendix Table 5;

6.4 Automobile exhaust emissions data collation See Appendix Table 6;

6.5 Volkswagen SANTANA 3000-type units in the delegate added fuel vehicles in use compared with no add "XSNANO" gasoline additive, according to GB / T 14951-2007 "petrol saving technology assessment method" Calculation;

6.5.1 According to the data of table 2 and Table 3,

Car's constant speed for 30km/h,45km/h,60km/h,75km/h and 90km/h,,

Saving rates were: 9.49%, 9.70%, 12.97%, 11.85% and 12.54%

Urban running mode saving rate as as follows: + 10.72%

Suburbs running mode saving rate ac is: + 12.41%

High speed running mode Saving rate aq fast operation mode as follows: + 12.54%

6.5.2 Table 4, muzzle velocity car from 30km / h acceleration to 80km / h, acceleration time contrast coefficient Kt is: 0.973;

7. Appendix

Table2 Cars constant fuel consumption test data on the experimental road

Speed (km/h)	30	45	60	75	90
Test 1 without XSNano	6.64	7.73	8.17	9.79	11.80
Test 2 with XSNano	6.01	6.98	7.11	8.63	10.32
The saving fuel	-0.63	-0.75	-1.06	-1.16	-1.48
The saving rate (%)	9.49	9.70	12.97	11.85	12.54

Note. 1. Test 1 is the data without XSNano , Test 2 is the data with XSNano.
2. The unit of test data is kg/100km.

Table 3 Evaluation Results

Test mode	Fuel consumption (kg/100km)	Fuel Saving rate (%)
Urban running mode	-0.81	10.72
Suburbs running mode	-1.11	12.41
High speed running mode	-1.48	12.54

Table 4 vehicle acceleration test data

Speed (km/h)	30	40	50	60	70	80
Test 1	0.0/	89.5	185.3	309.6	473.1	710.4
distance/time	0.00	/9.51	/17.25	/25.44	/34.54	/45.95
Test 2	0.0	82.8	174.9	297.4	462.7	695.9
distance/time	/0.00	/8.76	/16.21	/24.28	/33.50	/44.72
Acceleration time contrast coefficient	0.973					

Note: 1. Test 1 is without XSNano, Text 2 is with XSNano additive.
2. The unit of time is second, and distance is meter.

Table 5 car idling exhaust pollutant test data

	Rotating speed (r/min)	Free acceleration smoke (opacity method) PM (m ⁻¹)
Without XSNano	2980	0.08
With XSNano	2973	0.04
Cleaning rate (%)		50%

Table 6 vehicle emissions data collation

Date	Rotating speed (3000r/min)/(g/km)			Rotating speed (2000 r/min) /(g/km)			Idle speed (800 r/min)/(g/km)		
	CO	HC	NOx	CO	HC	NOx	CO	HC	NOx
2015/09/26 without	4.57	0.14	0.33	2.78	0.16	0.23	2.66	0.19	0.19
2015/10/15 without	4.49	0.16	0.31	2.59	0.16	0.21	2.73	0.18	0.21
2015/10/25 with	2.36	0.14	0.11	1.33	0.16	0.09	2.99	0.13	0.17
2015/11/17 with	1.04	0.09	0.13	1.37	0.11	0.10	1.69	0.11	0.09
2015/11/29 with	0.81	0.09	0.11	1.02	0.07	0.09	1.01	0.08	0.09

8. Experimental summary

The practical experiments than in the use of "XSNANO gasoline additive" after the car's saving rate, acceleration time contrast coefficient and cars free acceleration smoke (opacity method) purification rate all reached the GB / T25348-2010 "Cars section oil product use technology" requirements and environmental protection as well as certain significant effect of energy-saving vehicle stability has.