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National Standards of the People's Republic of China

GB 9743 - 200X

Replaces GB 9743 -1997

Passenger car tyres

(Draft for approval)

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Foreword

The 4.1~4.6, 4.7.1 and Chapters 6 of this standard are mandatory while the rest are voluntary.

This standard will replace *Passenger car tyres GB 9743-1997*.

The main differences between GB9743-1997 and this standard are as follows:

- This standard provides the list of specifications and dimensions in the form of referenced documents instead of listing them directly (4.1 of Version 1997; 4.1 of this edition);
- Breaking energy indicator of a passenger car bias tyre under minimum strength is integrated into a sheet (4.3.1 of Version 1997; 4.5.1 of this edition);
- Performance requirements for T tyres are added (Tables 1 and 2 of this edition);
- Inspection rules are revoked (Chapter 6 of Version 1997);
- List of maximum tyre speeds is cancelled (Table 13 of Version 1997);
- Requirements for tyre markings are revised (Chapter 7 of Version 1997 and Chapter 6 of this edition);

The appendices A and B of this standard are normative.

This standard was proposed by the China Petroleum and Chemical Industry Association.

This standard is under the jurisdiction of the National Technical Committee for Standardisation of Tyres and Rims.

This standard has entrusted the National Technical Committee for Standardisation of Tyres and Trims for interpretation.

The organisations involved in drafting this standard include the Beijing Research & Design Institute of Rubber Industry and the Triangle Tyres Co., Ltd.

The main drafters of this standard include Wang Kexian, Shan Guoling and Wu Jiangtao.

The issuing conditions of all previous versions of the standards replaced by this standard:

- GB1191-1965, GB1191-1974, GB1191-1982, GB1191-1989, GB9743-1988 and GB9743-1997

Passenger car tyres

1. Scope

This standard specifies the terms and definitions, requirements, test methods and marking of passenger car tyres. This standard is applicable to new pneumatic passenger car tyres.

2. Normative reference

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. For dated references, subsequent amendments (corrigenda excluded) to, or revisions of, any of these publications do not apply. However, parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. For undated references, the latest edition of the normative document referred to applies.

GB/T521	Method of measuring tyre peripheral dimensions
GB/T2978	Specification, size, pneumatic pressure and load of passenger car tyres
GB/T4502	Endurance test for passenger car tyres (Drum method) (GB/T4502 –1998, eqv ISO10191: 1993)
GB/T4503	Strength test method for passenger car tyres (GB/T4503-200X, ISO10191:1995, MOD)
GB/T4504	Bead unseating resistance test for tubeless passenger car tyres (GB/T4504-1998, eqv ISO10191: 1993)
GB/T6326	Tyres- Terms and definitions (GB/T 6326-200X, ISO4223-1:2003 NEQ)
GB/T7034	High speed test for passenger car tyres (Drum method) (GB/T7034-200X, ISO10191: 1995, MOD)
GB7036.1	Pneumatic tyre tubes Part 1: Automobile tyre tubes
HG/T2177	Appearance quality of tyres
TCTRSC	CSBS yearbook of tyres, rims and bleed valves

3. Terms and definitions

The terms and definitions, specified in GB/T6326, shall be applicable to this standard.

4. Requirements

4.1 Tyre specification, load index or level, measuring rim, sectional width and external diameter of the tyre after charging, load capacity, pneumatic pressure and rim allowed to be used shall comply with GB/T 2978. The tyres uncovered in GB/T 2978 shall have their specifications, load indices or levels, measuring rims, sectional width and external diameters of the tyre after charging, load capacities, pneumatic pressures and rims allowed in compliance with TCTRSC.

4.2 The coincidence relation of tyre running speed with air pressure and load shall comply with GB/T 2978 or TCTRSC.

4.3 The coincidence relation of tyre speed symbol with maximum running speed shall comply with the regulations of Appendix A.

4.4 The coincidence relation of the tyre load index with load capacity shall comply with the regulations of Appendix B.

4.5 Safety performance

4.5.1 Strength performance of tyres

For passenger car tyre strength tests, breaking energy at each test point in the strength test shall be not lower than that which is regulated in Table 1.

Table 1 Minimum breaking energy of passenger car tyres

Nominal sectional width of tyre	Radial tyre		Bias tyre			
	Standard	Enhanced	Nylon or polyester		Rayon	
			4PR, 6PR	8PR	4PR, 6PR	8PR
Below 160mm	220	439	220	439	132	263
160mm and above	295	585	295	585	177	351

For T-type temporary passenger car spare tyres, the minimum breaking energy is 220J when their load indices are less than 76; and that will be 295J when their load indices are no less than 295J.

4.5.2 Unseating resistance of tubeless tyres

Unseating resistance at any testing point of a tubeless tyre shall not be lower than that which is regulated in Table 2.

Table 2 Minimum unseating resistance of passenger car tubeless tyres

Nominal sectional width of tyre (S) /mm	S < 160	160 ≤ S < 205	S ≥ 205
Minimum unseating resistance /N	6670	8890	11120

For T-type temporary passenger car spare tubeless tyres, the minimum unseating resistance is 6670N when their load indices are less than 76; that will be 8890N when their load indices are no less than 76 but less than 93; and that will be 11120N when their load indices are no less than 93.

4.5.3 Durability performance of tyres

After tyres are subject to the durability tests, their air pressures shall not be lower than the initial air pressures as stipulated; upon completion of the test, such defects as delaminating (tyre tread, tyre side, cord fabric, inner liner, tread bracing layer or buffer layer, tyre bead), cord fabric fissuring, cord stripping, cord breaking, tread block tearout, joint splitting, chapping and abnormal deformation of tread shall not be found in the appearance check thereafter.

4.5.4 High speed performance of tyres

After tyres are subject to high speed performance tests, their air pressures shall not be lower than the initial air pressures as stipulated; upon completion of test, such defects as delaminating (tyre tread, tyre side, cord fabric, inner liner, tread bracing layer or buffer layer, tyre bead), cord fabric fissuring, cord stripping, cord breaking, tread block tearout, joint splitting and chapping shall not be found in the appearance check thereafter.

4.6 Signs of wear on tyre tread

4.6.1 External tyre of each tyre shall have at least high four regularly visible signs of wear no less than 1.6mm high on its tread with equal distance radiating from the hub.

4.6.2 The shoulders at both sides of the tyre concerned shall be cast with marks indicating positions of signs of wear.

4.7 Appearance quality

4.7.1 Appearance quality of a tyre requires that such appearance defects of laminating between components, sponginess, bead assembly broken, draw-up of bead assembly, rupturing of many cords, pleating of tyre liner cords, extruder surging of tyre crown with cords. If rim bands are used, their shapes shall be free of deformity and band rupture.

4.7.2 It is preferable for other appearance quality requirements of cover tyres and rim bands to comply with HG/T2177.

4.8 If tubes and rim bands are applied, the tubes shall comply with GB7036.1, and the rim bands shall accord with requirements for coordination with cover tyres.

5. Test methods

5.1 Sectional width, external diameter and positional height of signs of wear on its tyre tread of a new tyre after charging shall be determined in accordance with GB/T521.

5.2 Tyre strength shall be inspected in accordance with GB/T 4503.

5.3 Tubeless tyre unseating resistance shall be inspected in accordance with B/T 4504.

5.4 Tyre durability shall be inspected in accordance with GB/T 4502.

5.5 High speed performance of tyres shall be inspected in accordance with GB/T 7034.

5.6 Appearance quality of tyres shall be inspected in accordance with HG/2177.

6. Marking

6.1 Each cover tyre shall have the symbols from items a) to h) below marked at its side. Amongst, items from a) to f) are casting symbols, item g) is a permanent symbol and item h) is an indelible symbol

a) Specification;

b) Trademark, factory name or place name;

c) Load index or level, maximum load capacity and pneumatic pressure;

d) Speed symbol;

e) Names and lays of framework materials used for tyre crown and at tyre side of a radial tyre; names of framework materials used for a bias tyre;

f) Positional marking of signs of wear on tyre tread;

g) Production number;

h) Marking of delivery inspection;

6.2 Radial tyres shall be cast with the symbol of "RADIAL" (or "子午线"). Tubeless tyre shall be cast with the symbol of "TUBELESS"(or "无内胎");

6.3 The tyres, tread patterns of which indicate running speed, shall be cast with the symbol of running speed.

6.4 Adhesion tyre shall be cast with symbol of ice patterns;

6.5 Enhanced tyre shall be cast with symbol of enhancement.

6.6 Temporary spare tyre shall be cast with symbol for temporary use.

Appendix A
(Normative appendix)

List of coincidence relations of tyre speed symbols with maximum running speeds

A.1 Coincidence relations of tyre speed symbols with maximum running speeds shall comply with Table A.1.

Table A.1

Speed symbol	Maximum running speed/ km/h	Speed symbol	Maximum running speed/ km/h
C	60	P	150
D	65	Q	160
E	70	R	170
F	80	S	180
G	90	T	190
J	100	U	200
K	110	H	210
L	120	V	240
M	130	W	270
N	140	Y	300

