ICS 83.060

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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

中华人民共和国国家标准

GB/T 7762-2014

Replace GB/T 7762-2003

Rubber, vulcanized or thermoplastic – Resistance to ozone cracking – Static strain testing

硫化橡胶或热塑性橡胶 耐臭氧龟裂静态拉伸试验

(ISO 1431-1 2004, Rubber vulcanized or thermoplastic – Resistance to ozone cracking – Part 1: Static and dynamic strain testing, NEQ)

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Issued by General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China

Standardization Administration of the People's Republic of China

Contents

Foreword

This standard is drafted based on the rules given in GB/T 1.1 – 2009.

This standard replaces GB/T 7762 - 2003 “Rubber, vulcanized or thermoplastic – Resistance to ozone cracking – Static strain testing”. Compared with GB/T 7762 - 2003, the main technical differences are shown as follows:

--- Delete the stipulations on the use of oxygen when silent discharge tube is used to produce ozone (see 5.2 in 2003 edition);

--- Replace GB/T 9865.1 with GB/T 2941 (see 6.1, 6.1 in 2003 edition);

--- Revise the dimensions of narrow test piece and add dumb-bell test piece complying with GB/T 528 (see 6.3, 6.3 in 2003 edition);

--- For the product used in wet climate, revise the requirements on relative humidity during test, “test shall be carried out at the relative humidity from 80% to 90%” is revised to “if applicable, test shall be carried out at the relative humidity from 80% to 90%” (see 8.3, 8.3 in 2003 edition);

--- Add an optional elongation (25±2)% (see 8.4);

--- Add an optional method to describe crack; follow the relevant stipulations in GB/T 11206 – 2009 (see 10.1).

This standard is re-drafted by referencing ISO 1431-1: 2004 “Rubber, vulcanized or thermoplastic – Resistance to ozone cracking – Part 1: Static and dynamic strain testing”.

This standard is not equivalent to ISO 1431-1: 2004 in the aspect of consistency.

This standard is proposed by China Petroleum and Chemical Industry Federation.

This standard is under the jurisdiction of National Technical Committee 35 on Rubber & Products of Standardization Administration of China TC36 (SAC/TC 35/SC 2).

Drafting units of this standard: Guangzhou Research Institute of Synthetic Materials, Guangzhou South China Tire & Rubber Co., Ltd., AEOLUS Tyre Co., Ltd., Jiangsu Mingzhu Testing Machinery Co., Ltd., Guizhou Tyre Co., Ltd., Beijing Research & Design Institute of Rubber Industry, Hangzhou Zhongce Rubber Co., Ltd., and Guangzhou Rubber Products Research Institute Co., Ltd.

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The previous editions that this standard replaces are as follows:

GB/T 7762 – 1987, GB/T 7762 -2003

Rubber, vulcanized or thermoplastic – Resistance to ozone cracking – Static strain testing

Warning 1: Persons using this standard should be familiar with normal laboratory practice. This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

Warning 2: Attention is drawn to the highly toxic nature of ozone. Efforts should be made to minimize the exposure of workers at all times. Generally, the maximum ozone concentration in which human can bear is 0.1 X 10^{-6}, so it is recommended that the maximum average ozone concentration for human shall be lower than the maximum allowable concentration. Unless a totally enclosed system is being used, an exhaust vent to remove ozone-laden air is advised.

1 scope

This standard specifies procedures intended for use in estimating the resistance of vulcanized or thermoplastic rubbers to cracking when exposed, under static or dynamic tensile strain, to air containing a definite concentration of ozone and at a definite temperature in circumstances that exclude the effects of direct light.

This standard is applicable to vulcanized or thermoplastic rubber.

Note: Great caution is necessary in attempting to relate standard test results to service performance since the relative ozone resistance of different rubbers can vary markedly depending on the conditions, especially ozone concentration and temperature. In addition, tests are carried out on thin test pieces deformed in tension and the significance of attack for articles in service can be quite different owing to the effects of size and of the type and magnitude of the deformation, explanatory notes on the nature of ozone cracking are given in annex A.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 528 – 2009 “Rubber, vulcanized or thermoplastic – Determination of tensile stress – strain properties”

GB/T 2941 – 2006 “Rubber – General procedures for preparing and conditioning test

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