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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 30309-2013

Polysulfide silane coupling agent

多硫化物硅烷偶联剂

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**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of the PRC**

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules. The standard proposed by China Petroleum and Chemical Industry Association. This standard by the National Standardization Technical Committee rubber chemical additives Rubber and Technical Committee (SAC/TC35/SC12) Centralized. This standard is drafted by: Nanjing Shuguang Silane Chemical Co., Ltd. Participated in the drafting of this standard. Jingzhou Jiangnan Fine Chemical Co., Ltd. The main drafters of this standard. Tao mountain again, Menin, Xu Juan, Li Chunhua, Ganshu Guan. Polysulfide silane coupling agent

1 Scope

China's national product standard for polysulfide silane coupling agents. It specifies the classification, the type designations and the marking, the requirements, the test methods, the inspection rules and the marking, packaging, transport and storage of these products, and it applies to the liquid coupling agent made by reacting 3-chloropropyltriethoxysilane with sodium polysulfide, and to the solid form made by supporting that liquid on a carrier - either N330 carbon black or precipitated hydrated silica. This is the chemical on which the modern silica-reinforced tyre tread depends. Carbon black bonds to rubber readily; precipitated silica, which gives markedly lower rolling resistance and better wet grip, does not, because its surface is covered in silanol groups that are polar, hydrophilic and chemically indifferent to a hydrocarbon polymer. Without a coupling agent, silica filler agglomerates, disperses badly and gives a compound that is worse in every respect than the carbon black it replaced. The polysulfide silane bridges the gap at both ends: the ethoxysilane end reacts with the silanol groups on the silica surface, and the polysulfide end takes part in the sulfur vulcanisation of the rubber, so filler and polymer end up covalently linked. The commercially important variable is the sulfur rank of the polysulfide bridge, which is why the standard classifies products by disulfide content rather than by name alone - a higher-sulfur product couples more readily but can cause premature crosslinking during mixing, and a lower-sulfur one is safer to process but needs more aggressive conditions. Issued on 31 December 2013 and in force since 1 September 2014.

This standard specifies the classification polysulfide silane coupling agent, model, marking,

requirements, test methods, inspection rules, marking, packaging, transportation And storage. This standard applies to gamma- chloropropyl triethoxysilane and sodium polysulfide as the main raw material made by reacting liquid polysulfide silane A coupling agent in liquid polysulfide silane coupling agent with the carrier (N330 carbon black or precipitated hydrated silica) formulated into solid polysulfide A silane coupling agent.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 191-2008 Packaging - Pictorial signs Preparation of

GB/T 601-2002 Chemical Reagent standard titration solution

GB/T 603-2002 Chemical Reagent Test Methods - Preparations with

GB/T 1671-2008 plasticizer Determination of flash point - Cleveland open cup method

GB/T 3051-2000 Inorganic chemical products for the general method of determination of chloride content of mercury Method Determination of

GB/T 4472-2011 Chemical density, relative density

GB/T 5561-2012 surfactant method for determining the viscosity and flow properties of a rotary viscometer

GB/T 6488-2008 Determination of the refractive index of the liquid chemical products (20 °C)

GB/T 6679-2003 General rules for sampling solid chemical products

GB/T 6680-2003 General rules for sampling liquid chemical products Laboratory use specifications and test methods GB/T 6682-2008 Analysis

GB/T 8170-2008 revised value represents about rules and limit values \u200b\u200band judgment

GB/T 9722-2006 General chemical reagent gas chromatography

GB/T 11409-2008 rubber antioxidant, vulcanization accelerator Test Method 3 classification, type and marking

3.2 Model

3.2.1 liquid product type Disulfide liquid products according to different content into the following four models.

a) 17 bis type represents - (propyl triethoxysilane) polysulfide content of the disulfide (17.0

± 3.0)%;

b) 56 bis type represents - (propyl triethoxysilane) polysulfide content of the disulfide (56.0 ± 5.0)%;

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