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

GB/T 24148.7-2014

**Plastics -- Unsaturated polyester resins -- Part 7: Measurement
of gel time at ambient temperature**

塑料 不饱和聚酯树脂(UP-R) 第7部分: 室温条件下凝胶时间的测定

(English Translation)

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Foreword

GB/T 24148 "plastic unsaturated polyester resins (UP-R)" is divided into the following nine sections.

- Part 1. Designation system;
- Part 2. Sample preparation and performance measurement;
- Part 3. Technical requirements;
- Part 4. Determination of viscosity;
- Part 5. Determination of solid content;
- Part 6. 130 °C reactivity was measured;
- Part 7. Determination of gel time at room temperature;
- Part 8. platinum - cobalt colorimetric determination of color;
- Part 9. Total volume shrinkage rate determination.

This section GB/T 24148 Part 7.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section uses redrafted law, modify the use of ISO 2535:2001 "under plastic gel time of unsaturated polyester resins at room temperature Determination "(in English).

This part of ISO 2535:2001 technical differences exist compared to the terms of these differences has been involved through its outer margin bits Opposing vertical single line (|) were marked.

This part of ISO 2535:2001 Main technical differences and the reasons are as follows.

- Terms and definitions added at room temperature gel time two states described (see 3.1); Because this part of the increase of pole climbing method, the manual method Two test methods;

- Principle adds climbing pole method, manually and French gel time detector (see Chapter 4); because these two test methods in our industry Inner also commonly used;
- Procedure to do a more detailed description (see Chapter 7);
- The "Normative references" listed international standards with the corresponding national standards equivalent to a chapter of the document in place;
- The ISO precision to this section in Appendix C;
- Added Appendix D of this standard reg number and ISO 2535:2001 Number of control clauses.

For ease of use, this section made the following editorial changes.

- To the "international standards" be replaced by "this part" to "ISO 2535 this standard" to "GB/T 24148 this part" or "This part of the";
- Remove the ISO 2535:2001 Foreword;
- Increase the national standard foreword.

This part is proposed by the China Petroleum and Chemical Industry Association.

This part of the National Standardization Technical Committee of plastic thermosetting plastics Club (SAC/TC15/SC11) centralized.

This section is responsible for drafting. Zhejiang days and resin Limited.

Participated in the drafting of this section. Resin Co., Ltd. Tianjin All materials, synthetic resins State Quality Supervision and Inspection Center, Jiangsu Yabang Paint shares Parts Limited, East China University of Technology Huachang Polymer Co., Ltd., Jiangsu Fu Ling Chemical Co., Ltd., Changzhou Tianma Group Co., Ltd.

1 Scope

This section GB/T 24148 specifies the method for the determination of unsaturated polyester resin gel time at room temperature, the measured temperature range Wai is 18 °C ~ 30 °C. Recommended temperature is 25 °C.

This section applies to liquid unsaturated polyester resins.

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 2035-2008 Plastics terms and definitions (ISO 472:1999, IDT) ISO 4619:1998 Paints and varnishes desiccant (Driersforpaintsandvarnishes) ISO 15038. Determination of

organic polyester crosslinking agent active oxygen content of 1999 unsaturated polyester thermosetting plastic material
(Plastics-Organic-perester crosslinking agents for unsaturated polyester thermosetting materials-Determination of active-oxygen content)

3 Terms and Definitions

GB/T 2035-2008 and as defined in the following terms and definitions apply to this document.

Room temperature gel time gel time at ambient temperature After the initiator agent added to the resin viscosity reaches $50 \text{ Pa} \cdot \text{s}$, after the initiator may be added to the resin sample begins to rise along the glass rod (pole climbing), cited Time after drawing state when the initiator is added to the resin.

Principle 4

Measurement time is the room temperature ($18^\circ\text{C} \sim 30^\circ\text{C}$), unsaturated polyester resin (containing accelerator, initiator) viscosity reaches $50 \text{ Pa} \cdot \text{s}$ (as Gel time); after the initiator was added to the resin sample begins to rise along the glass rod (pole-climbing) time; initiator agent added to the resin sample after appearing to pull Time silk state.

Test methods are as follows.

Method A1. using an automatic release mechanism (see Appendix A), a glass rod is rotated in a test tube containing resin mixture, when the viscosity of the resin Reaches $50 \text{ Pa} \cdot \text{s}$, the glass rod will automatically stop rotating.

Method A2. automatic release means is also used, except that the resin mixture was placed in a beaker.

Method B1. continuous measuring device (see Appendix B), equipped with a glass rod tube resin mixture back and forth oscillation level, the viscosity will it is continuously measured viscosity corresponding period of continuous segment.

Method B2. continuous measurement apparatus is also used, except that the resin mixture was placed in a beaker.

Method C. Determination Using a blender, rotary glass rod in a beaker containing a mixture of the resin, the specimen started to rise along the glass rod (pole climbing)