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

GB/T 1842-2008

Replacing GB/T 1842-1999

**Plastics -- Test method for environmental stress-cracking of
polyethylene**

塑料 聚乙烯环境应力开裂试验方法

(English Translation)

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Foreword

This revised standard adopts ASTM D1693:2008 "environmental stress cracking vinyl Standard Test Method." This standard ASTM D1693:2008 technical content are basically the same, the main difference is.

- Specimen holder of the groove width to $12.00\text{mm} \pm 0.05\text{mm}$ (Chapter 6);
- Reagent using nonylphenol ether (TX-10), and increased reagent preparation requirements (Chapter 7);
- This standard specifies the specific conditions in the preparation of compression molded test using the test piece (8.1);
- Increased in vitro reagent be preheated to a predetermined temperature and then placed in the sample holder of the claim (10.4);
- Increased 6h, 7h, 12h, 20h observation point (10.5) in the observation time;
- Precision by GB/T 6379 is calculated (Chapter 11).

This standard replacement GB/T 1842-1999 "Test Method for Polyethylene stress cracking environment." This standard and GB/T 1842-1999 The main differences are as follows.

- Name changed to "plastic polyethylene environmental stress cracking Test Methods."
- The Chapter 8, "Sample Preparation" and "number of samples" in Chapter 11 into the "sample" (Chapter 8).
- The sample conditioning relative humidity by the " $50\% \pm 5\%$ " to " $50\% \pm 10\%$ " (Chapter 9).
- Thickness of the specimen test conditions B and C was changed to " $1.84\text{mm} \sim 1.97\text{mm}$ " (10.2).
- Increasing the test results presentation method (10.6).

Appendix A of this standard is a normative appendix, Appendix B is an informative annex.

The standard proposed by China Petroleum and Chemical Corporation.

This standard by the National Standardization Technical Committee plastic resins and petrochemical products Club (SAC/TC15/SC1) centralized.

This standard was drafted. China Petroleum & Chemical Corporation Beijing Research Institute of Chemical.

1 Scope

1.1

standard specifies the test method for polyethylene environmental stress cracking.

1.2

This standard applies to the determination of non-polyethylene homopolymers and other 1-olefin monomer content of less than 50% (mass fraction) and with functional groups Ability to environmental stress cracking olefin monomer content of not more than 3% (by mass) copolymer resistance under specified conditions.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 1845.2-2006 plastic polyethylene (PE) molding and extrusion materials - Part 2. Sample preparation and determination of properties (ISO 1872-2:1997, MOD) GB/T 2035-2008 Plastics terms and definitions (ISO 472:1999, IDT) GB/T 2918-1998 standard plastic sample conditioning and environment testing (ISO 291:1997, IDT) (Trueness and precision) - Part 2 Accuracy GB/T 6379.2-2004 measurement methods and results. the standard measurement to determine the party Method repeatability and reproducibility of the basic method (ISO 5725-2:1994, IDT) GB/T 9352-2008 plastic thermoplastic material compression molded sample (ISO 293:2004, IDT)

3 Terms and Definitions

GB/T 2035-2008 specified in the terms and the following definitions apply to this standard.

Lower than the short-term mechanical strength of the various plastic stress-induced cracking of a plastic internal or external.

Such cracks are often influenced by the environment in which plastic and accelerate

development. Stress or both present in the external or internal stress of the joint work Use can cause cracking. Cracking small cracks formed by the network-like structure, also known as crack.

Where this test can be observed in the eyes of the crack can be considered stress cracking damage, referred to as sample damage. Depending on the score should not be extended Damage to the specimen.

Cracks usually begins with the score and scored a near 90 ° angle to the peripheral direction of development. Sometimes cracks formed in the internal development of the sample surface collapse trap. If the collapse and eventually developed into a surface crack, it should record the time of the collapse of specimen breakdown time.

F50

Specimen breakdown in a medium probability of fifty percent of the time.

4 Method summary

The curved surface of the sample with a notch and placed into the surfactant medium observation time of sample cracking occurred and calculate damage probability.