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GB/T 46830.1-2026

**Plastics - Liquid crystal polymer (LCP) moulding and extrusion
materials - Part 1: Designation system and basis for
specifications**

塑料 液晶聚合物（LCP）模塑和挤出材料 第1部分：命名系统和分类基础

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Table of Contents

- 1 Scope
- 4 Naming System
- 4.2 Character Group
- 4.3 Character Group
- 4.4 Character Group
- 4.6 Character Group

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document is Part 1 of GB/T 46830 "Plastic Liquid Crystal Polymers (LCP) Molding and Extrusion Materials". GB/T 46830 has been... The following sections were published.

1. Naming Systems and Classification Basics;

2. Sample preparation and performance determination. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the China Petroleum and Chemical Industry Federation. This document is under the jurisdiction of the National Technical Committee on Plastics Standardization (SAC/TC15). This document was drafted by: Kingfa Science & Technology Co., Ltd., Shanghai Pulite Composite Materials Co., Ltd., and Xiamen Tengshengxing Electronics Co., Ltd. Technology Co., Ltd., Zhonglan Chenguang Chemical Research and Design Institute Co., Ltd., Quzhou Interpolymer Materials Co., Ltd., Guangzhou Quality Supervision and Inspection Research Institute, National High-Tech Materials Polymer Materials Industry Innovation Center Co., Ltd. The main drafters of this document are: Xiao Zhongpeng, Xu Bin, Liu Yao, Chen Chaofeng, Zheng Wen, Wei Wei, Wang Jiandong, Liu Lirong, Zhong Yixiong, He Guoshan, and Wu Bo. Zhang Li, Wang Wanjuan, Hu Xiuxue, Qin Xiufang.

GB/T 46830, "Plastic Liquid Crystal Polymers (LCP) Molding and Extrusion Materials," is the fundamental standard for liquid crystal polymers, providing a framework for their application. Product standards provide support. GB/T 46830 is proposed to consist of two parts.

1. Naming System and Classification Basis. The aim is to establish a standard model for naming liquid crystal polymer materials. Naming methods and classification principles.

2. Sample Preparation and Performance Determination. The aim is to establish suitable sample preparation methods and properties for liquid crystal polymer materials. It can determine the items, methods, and conditions. This document describes the characteristics of liquid crystal polymer (LCP) molding and extrusion materials, using specified characteristic performance values and recommended applications and/or specifications. Processing methods, key properties, additives, colorants, fillers, and reinforcing materials, etc., are used to evaluate different types of liquid crystal polymer molding and extrusion materials. The distinction was made. Plastic liquid crystal polymer (LCP) molding and extrusion materials Part

1 Scope

GB/T 46830.1-2026 is the Chinese national standard covering how an LCP grade is designated - the polymer whose molecules line up as it flows, giving the dimensional stability, the thin-wall flow and the dielectric behaviour that connectors and 5G antenna substrates need. Part 1 of the series, first edition, in force from 1 December 2026, with Part 2 on specimen preparation. It was issued on 25 May 2026 and takes effect on 1 December 2026, as a first edition. The document is under the responsibility of the China Petroleum and Chemical Industry Federation. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

1. Scope This document defines a naming system for liquid crystal polymer (LCP) thermoplastic materials, which serves as the basis for classification. Different types of liquid crystal polymer (LCP) thermoplastic materials are recommended based on the following specified characteristic property values and composition information. A classification system based on uses and/or processing methods, important properties, additives, colorants, fillers, and reinforcing materials. distinguish.

- a) Tensile strength;
- b) Flexural modulus;
- c) Notched impact strength of the cantilever beam;
- d) Melting temperature;
- e) Load deformation temperature. This document applies to liquid crystal polymer (LCP) materials used in injection molding and extrusion, including unmodified, modified, and recycled liquid crystal polymers. This document does not imply that materials with the same name necessarily have the same properties. This document does not provide information for describing the special uses of materials. (or) the engineering data, performance data, or processing condition data required for the processing method. If necessary, the test methods specified in GB/T 46830.2 shall be used. The method determines these additional

properties. To illustrate the specific use of a particular thermoplastic material, additional requirements may be given in character group 5 (see 4.1).

4 Naming System

4.1 Overview The naming and classification system for liquid crystal polymers is based on the following standard model.

4.2 Character Group

1 Within character group 1, the hyphen is followed by the liquid crystal polymer code "LCP" as specified in GB/T 1844.1 and two digits as specified in Table 1. The code indicates the polymer composition information, separated by a hyphen.

4.3 Character Group

2 Within character group 2, position 1 uses a single letter code to indicate the type of filler and/or modifying material, and position 2 uses a single letter code to represent... The physical form is shown, and the character code conforms to the specifications in Table

2. Positions 3 and 4 use two-digit numeric codes to indicate the mass content. There are no spaces between them.

4.4 Character Group

3 Within character group 3, position 1 provides a description of recommended uses and/or processing methods, while positions 2 through 8 provide information on additives and accessories. Additional information and other performance details are provided. The letter codes used conform to the specifications in Table 3. If there is an explanation in positions 2 to 8, but it is not clear in position 1, then the letter X should be inserted in position 1.

4.5.5 Melting temperature The determination of melting temperature shall be carried out in accordance with the provisions of GB/T 19466.3. The melting temperature is divided into 9 ranges according to Table 7, and each range is represented by a 1-digit code.

4.5.6 Load Deformation Temperature The determination of the load deformation temperature shall be carried out in accordance with the provisions of GB/T 1634.1 and GB/T 1634.2, using a bending temperature of

1.80 MPa. stress.

4.6 Character Group

5 This character group is optional and may contain any additional information or requirements important for a particular purpose, or relevant standards or specific documents. Information that identifies specific applications. To illustrate the specific

application of a particular LCP thermoplastic material or to ensure processing reproducibility, additional information can be provided in character group 5. Require.

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