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

GA/T 2091.1-2023

**Forensic sciences - Reagents and consumables for capillary
electrophoresis - Part 1: Separation gel**

法庭科学 毛细管电泳试剂耗材 第1部分：分离胶

(English Translation)

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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 GA/T 2091 "Forensic Science Capillary Electrophoresis Reagents and Consumables". GA/T 2091 has been released with Lower part.

---Part 1: Separating gel;

---Part 2: Deionized formamide;

---Part 3: Buffer.

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.

Introduction

Capillary electrophoresis reagent consumables are special reagent consumables used for forensic science DNA electrophoresis detection, and are used in conjunction with special genetic analyzers.

It plays a vital role in the accurate typing of DNA fragments such as STR loci, including separation gel, formamide, buffer, etc.

products. In order to ensure that the basis used in the development, production, and testing of related products is practical, feasible, and standardized, a series of standards have been formulated.

GA/T 2091 "Forensic Science Capillary Electrophoresis Reagents and Consumables" is planned to consist of three parts.

---Part 1: Separating gel. The purpose is to clarify the technical requirements of separation gels used in capillary electrophoresis for DNA testing in forensic science.

requirements, stipulating test methods, inspection rules, labeling, packaging, transportation and storage requirements.

---Part 2: Deionized formamide. The purpose is to clarify the deionized formaldehyde used in capillary electrophoresis for DNA testing in forensic science.

Technical requirements for amides, stipulating test methods, inspection rules, labeling, packaging, transportation and storage requirements.

---Part 3: Buffer. The purpose is to clarify the technical requirements of buffers used in capillary electrophoresis for DNA testing in forensic science.

requirements, stipulating test methods, inspection rules, labeling, packaging, transportation and storage requirements.

Forensic Science Capillary Electrophoresis Reagents and Consumables Part 1: Separating gel Warning. Some reagents and some test processes used in this test method may cause dangerous situations. The operator should take appropriate safety precautions.

measure.

1 Scope

This document specifies the technical requirements, test methods, and inspection rules for separating gels used in capillary electrophoresis for forensic science DNA testing.

Labeling, packaging and transportation and storage.

This document applies to separation gels used in capillary electrophoresis for DNA testing in forensic sciences. Reference book for using "separating gel" in other fields document.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations for undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document.

GB/T 37226-2018 Basic quality requirements for human fluorescently labeled STR composite amplification detection reagents for forensic science
GA/T 382-2014 Forensic Science DNA Laboratory Construction Specifications
GA/T 383-2014 Forensic Science DNA Laboratory Testing Specifications
GA/T 1163-2014 Analysis and application of human DNA fluorescently labeled STR typing results
HG/T 3921 Chemical reagent sampling and acceptance rules

3 Terms and definitions

The following terms and definitions apply to this document.

separation gel separation gel in the forensic science DNA capillary electrophoresis examination process, as the support and separation matrix of DNA fragments, it determines the DNA fragments.

Segment mobility (3.5) and resolution (3.4). It has the function similar to molecular sieve.

electroosmotic flowelectroosmoticflow in capillary electrophoresis, under the action of an external electric field, the cations in the electric double layer on the inner wall of the capillary move toward the cathode, and at the same time drive the cations in the capillary Fluid flow formed by overall directional migration of solutes.

self coating the separation gel (3.1) itself has the function of dynamically applying to the inner wall of the capillary, which reduces the electroosmosis generated during electrophoresis.

Coating of flow (3.2).