
**Coal — Determination of plastic
properties — Constant-torque
Gieseler plastometer method**

*Charbon — Détermination des propriétés plastiques — Méthode du
plastomètre Gieseler à couple constant*

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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

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This second edition cancels and replaces the first edition (ISO 10329:2009), which has been technically revised.

Coal — Determination of plastic properties — Constant-torque Gieseler plastometer method

1 Scope

This document specifies a method for obtaining a relative measure of the plastic behaviour of coal when heated under prescribed conditions. The method is used to obtain values of the plastic properties of coals and blends used in carbonization and in other situations where determination of plastic behaviour of coals is of practical importance.

NOTE The empirical nature of this test requires proper equipment calibration to produce fluidity readings which are a true indication of the relative plastic behaviour of the coal.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 18283, *Hard coal and coke — Manual sampling*

ISO 13909-1, *Hard coal and coke — Mechanical sampling — Part 1: General introduction*

ISO 13909-2, *Hard coal and coke — Mechanical sampling — Part 2: Coal — Sampling from moving streams*

ISO 13909-3, *Hard coal and coke — Mechanical sampling — Part 3: Coal — Sampling from stationary lots*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at <http://www.electropedia.org/>

— ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

dial division per minute

measure of stirrer rotation rate, as used in the constant-torque Gieseler plastometer method

Note 1 to entry: There are 100 dial divisions for each full 360° rotation of the stirrer. The fluidity result is expressed as total dial divisions turned by the stirrer in a 1 min time period, i.e. dd/min.

3.2

initial softening temperature

temperature at which dial movement or electronic readout indicates a stirring shaft movement of one *dial division per minute* (3.1), with continued indication of movement of at least 1 dd/min thereafter

3.3

maximum fluidity temperature

temperature at which stirring shaft rotation reaches the maximum rate

3.4

plastic range

difference between the initial softening temperature and the solidification temperature