FINAL DRAFT
International Standard

ISO/FDIS 15192

Soil and waste — Determination of chromium(VI) in solid material by alkaline digestion and ion chromatography with spectrophotometric detection

ISO/TC **190**/SC **3**

Secretariat: **DIN**

Voting begins on:
2025-06-17

Voting terminates on:
2025-08-12

ISO/CEN PARALLEL PROCESSING

Reference number
ISO/FDIS 15192:2025(en)

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Published in Switzerland

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Foreword

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This document was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 3, *Chemical and physical characterization*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 444, *Environmental characterization of solid matrices*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 15192:2021), which has been technically revised.

The main changes are as follows:

— integration of the determination of the total chromium in the alkaline digestion solution;

— addition of barium chromate as an alternative to lead chromate for the verification of the method in 10.5.3;

— the text has been editorially revised, including updating of references.

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Introduction

Under environmental conditions chromium in compounds exists in the trivalent, Cr(III), or the hexavalent, Cr(VI) state. Chromium is an essential trace element for mammals, including man, whereas it is presumed that Cr(VI) compounds are genotoxic and potentially carcinogenic in humans. Interconversion of trivalent and hexavalent chromium species can occur during sample preparation and analysis, but these processes are minimised, to the extent possible, by the sample preparation methods prescribed by this document.