
International Standard



8530

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Manganese and chromium ores — Experimental methods for checking the precision of sample division

Minerais de manganèse et de chrome — Méthode expérimentale de contrôle de la fidélité de la division des échantillons

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8530 was prepared by Technical Committee ISO/TC 65, *Manganese and chromium ores*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Manganese and chromium ores — Experimental methods for checking the precision of sample division

1 Scope and field of application

This International Standard specifies experimental methods for checking the precision of sample division of manganese and chromium ores, whether natural or processed, being carried out in accordance with the methods specified in the relevant International Standards.

2 Reference

ISO 4296/2, *Manganese ores — Sampling — Part 2: Preparation of samples*.

3 General conditions

3.1 The division of experimental samples shall be carried out in accordance with the methods specified in the relevant International Standards.

3.2 The quality characteristics to be selected for the purposes of experiment shall be manganese content (% Mn) for manganese ores and chromium oxide content (% Cr₂O₃) for chromium ores.

NOTE — It should be recognized that other chemical elements under question and particle size distribution may have to be taken into account.

3.3 It should be recognized that the precision of division is liable to worsen in the following circumstances:

- a) when a sample having a large particle size is divided excessively at one time into a divided sample of small mass;
- b) when the division is carried out in a large number of stages;
- c) when apparatus for sample division with insufficiently checked precision is employed;
- d) when the established operational instructions for sample preparation are not implemented adequately;
- e) when a gross sample of a very large mass is divided.

3.4 The experiment shall be carried out at least 10 times for each type of an ore either on gross samples or subsamples.

3.5 The samples taken for routine determinations may be used for obtaining the samples for chemical analysis, by splitting the samples.

4 Experimental methods

The experiment shall be conducted by one of the following two methods:

- a) method to obtain the final sample for chemical analysis in three or more stages of crushing and division;
- b) method in one or two stages of crushing and division.

4.1 Method of division in three or more stages

4.1.1 This method is normally applied to coarse ores.

4.1.2 The mass of divided sample in relation to the whole-through sieve size at each stage of division shall be in accordance with the rules for sample division specified in the relevant International Standards.

4.1.3 A flow diagram for preparation of final samples for chemical analysis is given in figure 1, as an example.

The number of stages in the crushing and division of the gross sample (or subsample) shall be the same in order to obtain paired final samples.

4.1.4 A final sample shall be prepared from each of the paired samples.

4.1.5 A single chemical determination shall be made on one of the final samples and duplicate determinations on the other.

The duplicate determinations shall be carried out on two test portions taken from a final sample.

4.1.6 The sequence of chemical determinations of the experimental samples shall be randomized, or experimental samples and routine samples may be kept in one sequence and the determinations may be carried out in a random order.

4.1.7 It is recommended that the experimental data be recorded on a data sheet, such as that given in the table.