CCRMP
Canadian Certified Reference Materials Project

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PCMRC
Projet canadien de matériaux de référence certifiés

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Certificate of Analysis

First issued: 1990 Version: November 2008

INM-1

Pyrometallurgical Material for Sulphur

INM-1 Certified Values

Constituent	Unit	Mean	Within-Lab Standard Deviation	Between-Lab Standard Deviation	95% confidence limit
S	%	22.17	0.051	0.24	± 0.20

INM-1 Informational Values

Constituent	Unit	Mean
Cu	%	25.5
Fe	%	0.51
Ni	%	48.0
SiO_2	%	0.1

DESCRIPTION

INM-1 is nickel-copper sulphide matte donated by International Nickel Company Limited in Copper Cliff, Ontario, Canada. The raw material was passed through a Denver roller, sieved, and blended to obtain 40 kg of a minus 106 micron (150 mesh) product. The yield was 93%. The material comes in glass bottles containing 50g each. This is the only size available. Each bottle was sealed under nitrogen in a laminated aluminum foil-mylar pouch to prevent oxidation.

INTENDED USE

INM-1 is suitable for the analysis of sulphur in pyrometallurgical feed materials using a barium sulphate precipitation method. Examples of intended use are for quality control in the analysis of samples of a similar type, method development, arbitration and the calibration of equipment.

INSTRUCTIONS FOR USE

The assigned values pertain to the date when issued. CANMET-MMSL is not responsible for changes occurring after receipt by the user. INM-1 should be used “as is”, without drying. The contents of the bottle should be thoroughly mixed before taking samples. The contents of the bottle should be exposed to air for the shortest possible time. After opening the sealed pouch, the bottle should be kept in a

dessicator, or preferably, resealed under nitrogen in a new heat-sealed laminated foil pouch to prevent oxidation.

HANDLING INSTRUCTIONS
Normal safety precautions for handling fine particulate matter are suggested, such as the use of safety glasses, breathing protection, gloves and a laboratory coat.

HOMOGENEITY
A formal assessment of homogeneity was not performed on INM-1. The assumption that the material is homogeneous is supported by the fact that the within-laboratory standard deviation obtained in the interlaboratory measurement program for INM-1 is smaller than that obtained with similar materials. The participants in the interlaboratory measurement program for INM-1 used sample sizes ranging from 0.15 to 1-g. Use of a smaller sub-sample will invalidate the use of the certified value and associated parameters.

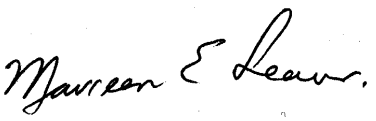
CERTIFIED VALUES
Ten laboratories from the smelting industry and government participated in the interlaboratory certification program. Sulphur was analyzed using a barium sulphate precipitation method. A one-way analysis of variance was used to estimate the consensus value and associated statistical parameters. Sulfur was given certified value and a further four constituents had informational values assigned.

CERTIFICATION HISTORY
INM-1 was released in 1990. The 2008 version of the certificate is being released because of the expiry of the previous one. This new certificate corrects two transcriptional errors in informational values that appeared in the previous certificate.

PERIOD OF VALIDITY
These certified values are valid until December 31, 2030. The stability of the material will be monitored every two years. Updates will be published on the CCRMP web site.

LEGAL NOTICE
CANMET-MMSL has prepared this reference material and statistically evaluated the analytical data of the interlaboratory certification program to the best of its ability. The purchaser, by receipt hereof, releases and indemnifies the CANMET-MMSL from and against all liability and costs arising out of the use of this material and information.

CERTIFYING OFFICERS



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REFERENCE
The certification report is available free of charge on request to:

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