



## 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: 1983

Last revision: September 1996

## MP-2

### Tungsten-Molybdenum Ore Reference Material

#### Certified Values and 95% Confidence Intervals

Constituent		
W	0.65 %	± 0.02 %
Mo	0.281 %	± 0.010 %
Bi	0.245 %	± 0.007 %
Sn	0.043 %	± 0.002 %
Ag	4.9 µg/g	± 0.3 µg/g

#### Source

MP-2 is a sample of tungsten-molybdenum ore representative of the wolframite-molybdenite-bismuth mineralization deposits at Mount Pleasant, New Brunswick. The raw material was obtained from the Billiton Exploration Company Limited.

#### Description

The product is a powdered compositional reference material having primarily a siliceous matrix.

#### Method of Preparation

The material was hand-picked at the mine site by CANMET geologists. It was crushed and dry-ground to -200 mesh. The powdered ore, weighing 170 kg, was blended in a 570-L conical blender for 8h and bottled in 200-g units.

#### Intended Use

MP-2 is intended for quality control in chemical analysis.

#### Instructions for Use

MP-2 should be used "as is" without drying. The contents of the bottle should be thoroughly mixed before taking samples.

#### State of Homogeneity

The homogeneity of the stock with respect to its bismuth and silver contents was tested and confirmed by a commercial laboratory using bottles chosen according to a stratified random sampling scheme. Multi-acid decomposition with atomic absorption finish was used for both elements. A second silver determination used fire assay preconcentration and atomic absorption finish.



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### Mineralogical Composition

Mineral	wt %	Mineral	wt %
Quartz	70.0	Molybdenite	0.4
Chlorite	10.0	Bismuth	0.25
Topaz	5.0	Chalcopyrite	0.23
Lepidocrocite	5.0	Rutile	0.2
Fluorite	2.0	Bismuthinite	0.2
Calcite	1.0	Pyrite	0.1
Wolframite	1.0	Monazite	0.1
Loellingite	1.0	Zircon	0.1
Sphalerite	0.7	Galena	0.05

### Approximate Chemical Composition

Constituent	wt %	Constituent	wt %
SiO <sub>2</sub>	76.1	As	0.2
Al	5.4	Cu	0.09
F	4.1	Sn	0.043
Fe	3.7	Mg	0.04
Ca	2.7	Pb	0.04
S	0.7	C (total)	0.02
Zn	0.4	H <sub>2</sub> O (105°C)	<0.1

#### Method of Certification

MP-2 was certified by an interlaboratory analysis program. Nineteen laboratories participated in the interlaboratory program to provide analytical results for five elements in MP-2.

#### Legal Notice

The Canadian Certified Reference Materials Project 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 Canadian Certified Reference Materials Project from and against all liability and costs arising out of the use of this material and information.

#### Reference

The preparation and certification procedures used for MP-2, including values obtained by individual laboratories, are given in CANMET reports 83-14E, "MP-2: A certified tungsten-molybdenum reference ore", and 84-10E, "Reference materials CZN-1, CPB-1, CCU-1, MP-1a and MP-2: Additional recommended values". These reports are available free of charge on application to:

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