

Coarse Basalt -20mm
Blank Reference Material: Product Information Sheet
PBS-154

Table 1: PBS-154 XRF analysis values (wt%)

Analyte	Ave. Value	Analyte	Ave. Value
Fe	9.007	Cu	0.005
Si	24.462	Zn	0.013
Al	7.527	As	<0.001
Ti	1.168	Pb	0.005
Mn	0.138	Ba	0.008
P	0.091	Cl	0.018
S	0.047	Sr	0.029
Mg	3.29	Zr	0.015
CaO	6.699	Sb	<0.001
K ₂ O	0.339	Sn	0.003
Na	2.187	Cr	0.014
V	0.031	LOI371	0.28
Cr	0.014	LOI650	0.17
Co	0.006	LOI1000	-0.23
Ni	0.004		

Table 2: PBS-154 Table of 50g Fire Assay / ICP (ppm)

Analyte	Ave. Value
Au	0.0005

Introduction

This document specifies preparation, analysis, and documentation of reference material PBS-154.

Origin of Material

The source material is from a Western Australian quarry. It is described as “Bunbury Basalt”.

Method of preparation

The material was prepared to maximum homogeneity throughout the entire batch via the following methodology:

- Drying at 105°C to constant mass
- Multistage crushing and screening to minus 20mm
- Homogenisation
- Packaging into 200l drums of about 300kg, or further sample mass reduction via rotary sample division into sealed 1kg bags.

Samples were taken at intervals during the packaging stage to provide material for the analysis process.

Measurement techniques used for certification

A single laboratory was each given 6 x 1kg randomly selected samples for the following analysis:

Lithium borate fusion XRF:

Prepared sample is fused in lithium borate flux with lithium nitrate additive. The resultant glass bead is analysed by XRF. XRF is suitable for the total analysis of a range of geological ores. XRF Suites are tailored to specific ore types, using predefined inter-element and matrix corrections. Loss on Ignition (LOI) is packaged with XRF suites to achieve close to 100% characterisation. Results are reported un-normalised.

Thermal gravimetric analysis (TGA)

Loss on Ignition (LOI) was requested via Thermal gravimetric analysis (TGA) at 371°C, 650°C and 1,000°C.

50g Fire Assay Digest with ICP finish

Prepared sample is fused in a flux to digest. The melt is cooled to collect the precious metals in a lead button. The lead is removed by cupellation and the precious metal bead is digested in aqua regia. The digest solution is analysed by ICP. Fire assay fluxes are designed to optimise gold recovery for each particular sample type. Fire assay is regarded as the preferred method for quantitative gold analysis.

Method of Statistical Analysis

Values are simple mean values calculated from the analyte results. No outlier detection or classification has been undertaken. No uncertainty is quoted for uncertified Reference Material.

Preparer and supplier of reference material

The iron ore reference material PBS-154 has been prepared and certified, and is certified by:

Pilbara Standards Pty Ltd
16 Durham Rd
Bayswater, WA 6053
Australia

www.pilbarastandards.com.au

The material is supplied in 1kg sealed plastic bags, and 200l drums of about 300kg.

Intended use

PBS-154 is intended for the monitoring of laboratory sample preparation performance in the chemical analysis of geological samples. In particular it is intended to test for cross contamination of Au between ore samples.

Stability and storage instructions

PBS-154 is a fresh reference material and is stable in the sealed plastic bags under normal conditions of storage.

Instructions for the correct use of the reference material

The recommended values for PBS-154 refer to the concentration levels after removal of hygroscopic moisture by drying in air to constant mass at 105°C. If the reference material is not dried prior to analysis, the recommended value should be corrected to the moisture bearing basis.

Legal notice

Pilbara Standards Pty Ltd has prepared and statistically evaluated the property values of this reference material to the best of ability. The purchaser by receipt hereof releases and indemnifies Pilbara Standards Pty Ltd from and against all liability and costs from the use of this material and information.

Certifying officer

Bruce Armstrong, Managing Director, Pilbara Standards Pty Ltd

Certification date

2 July 2021

References

ISO Guide 35 (2006), Reference materials – General and statistical principles for certification.