ALS Minerals

SPECIALTY ASSAY PROCEDURE

OA- GRA08

SPECIFIC GRAVITY

ANALYTICAL METHOD

Gravimetric (XRF)

Two methods of analysis can be used, depending on the nature of the sample.

1. BULK SAMPLES (OA- GRA08 & OA- GRA08A)

The rock or core section (up to 6 kg) is weighed dry for method OA-GRA08 or is covered in a paraffin wax coat in the case of OA-GRA08a and weighed. The sample is then weighed while it is suspended in water. The specific gravity is calculated from either of the following equations.

OA- GRA08 Specific Gravity = $\frac{\text{Weight of sample (g)}}{\text{Weight in air (g) - Weight in water (g)}}$

OA- GRA08 Specific Gravity = $\frac{\Delta}{B - C - [(B - A) / Dwax]}$

A = weight of sample in air **B** = weight of waxed sample in air
C = weight of waxed sample suspended in water **D** = density of wax

2. PULVERIZED MATERIAL (OA- GRA08B & OA- GRA08D)

A prepared sample (3.0 g) is weighed into an empty pycnometer. The pyncometer is filled with a solvent (either methanol or acetone) and then weighed. From the weight of the sample and the weight of the solvent displaced by the sample, the specific gravity is calculated according to the equation below.

Specific Gravity = $\frac{\text{Weight of Sample (g)}}{\text{Weight of solvent displaced (g)}}$ X Specific Gravity of Solvent

METHOD CODE	UNITS	LOWER LIMIT	UPPER LIMIT	DESCRIPTION
OA- GRA08	Unity	0.01	20	Specific Gravity – without paraffin coat
OA- GRA08a	Unity	0.01	20	Specific Gravity – with paraffin coat
OA- GRA08b	Unity	0.01	20	Specific Gravity – pyncometer with Methanol
OA- GRA08d	Unity	0.01	20	Specific Gravity – pyncometer with Acetone

OA- GRA08

CONVERSION OF SPECIFIC GRAVITY TO DENSITY

Density = Specific gravity x Density of water (at temperature (t°C))

Factors for converting specific gravity to density are tabulated below:

TEMP (° C)	DENSITY (G/CM³)	TEMP (° C)	DENSITY (G/CM³)
19	0.9984	23	0.9975
20	0.9982	24	0.9973
21	0.998	25	0.997
22	0.9978	26	0.9968