



V.V. MINERAL - INDIA



CENTRAL LABORATORY

Quality Certificate

P.O.No : OGG/PO/003/2012 Certificate. No. : 8785/12-13
 Customer Name : ORIENT GROUP Dated : 24-04-2012
 Product Name : GARNET Invoice. No. : 089/12-13
 Grade&Size : C(0.600-0.250 mm) Sample Qty : 100 gms
 Qty for this Lot : 280 M.Tons. Marking : **Grade -#30-60**
 Date of shipment : 24-04-2012 Packing : 1ton bulk bags.
 Material Batch No : 308 to 317/12-13

We hereby Certify that the Garnet shipped for the P.O.No: OGG/PO/003/2012 is having the following results from our Lab Analysis. It was determined by X-ray Fluorescence.

Chemical Analysis :

Elements	%
SiO ₂	35.47
Al ₂ O ₃	21.72
Fe ₂ O ₃	30.54
MgO	7.44
CaO	1.12
TiO ₂	2.11

Sieve Analysis Report :

M.M	ASTM	Standard%	Actual%	Cum%
0.600	30	-	0.36	0.36
0.425	40	-	18.88	19.24
0.300	50	-	58.28	77.52
0.250	60	-	14.04	91.56
0.180	80	-	8.44	100

Mineral Composition: % by Weight

Garnet : 99.40 %
 Imenite : 00.50 %
 Others : 00.10 %

Physical Characteristics:

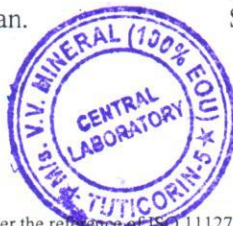
Specific Gravity : 4.1
 Conductivity : 9.52 mS/m at 23.7⁰C
 Chloride : 14.88 ppm
 Hardness : > 7 moh scale
 Acid Solubility(Hcl) : < 1.0 %
 Colour : red - pink
 Grain Shape : Subangular
 Toxic substances : None
 Moisture : 0.17 %
 Bulk Density : 2.55 g/cm³

Sample Taken by: A. Kannan.

Sieve Analysis conducted by : T.Ravikumar

Signature

A. kann



Signature

T. R. V.

* "Sample taken and Sieve Analysis under the reference of ISO 11127-2"
 * "Chemical Analysis have been determined by Lab XRF"

* "Conductivity and Moisture Analyzed by Metler"
 * "Chloride Content Analyze by Spectra Photometer"