

## CERTIFICATE OF ANALYSIS



This is to certify the quality characteristics of the described cargo, at the loading port, to the best of my knowledge and belief:

**Client:** Vale Internacional S.A

**Product:** LOAU

**Shipper:** Mineração Corumbaense Reunida S.A.

**Loading Port:** Port of Gregório Curvo

**M/V:** TOTI H

**Cod:** MCR19-04-012

**S/D:** April 21, 2019

**Wet Weight (mt):** 30.838

**Batch:** 3130

### 1 - CHEMICAL ANALYSIS - Dry Basis - %

Fe	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	P	Mn	LOI
65,58	2,84	1,26	0,070	0,008	1,45

### 2 - MOISTURE (%)

4,6

### 3 - PHYSICAL TESTS

Size distribution (mm) - Natural Basis - % Cumulative Retained (%)							
+ 38	+ 31,5	+ 25	+ 19	+ 16	+ 10	+ 6,3	- 6,3
1,6	7,7	23,6	45,3	59,2	88,1	97,4	2,6

### 4 - STANDARDS AND REMARKS

Chemical assay: X-ray fluorescence spectrometric method;

Size distribution: ISO 4701

Moisture: ISO 3087

No additional remarks.