

Minerals

Application notes

APP-047

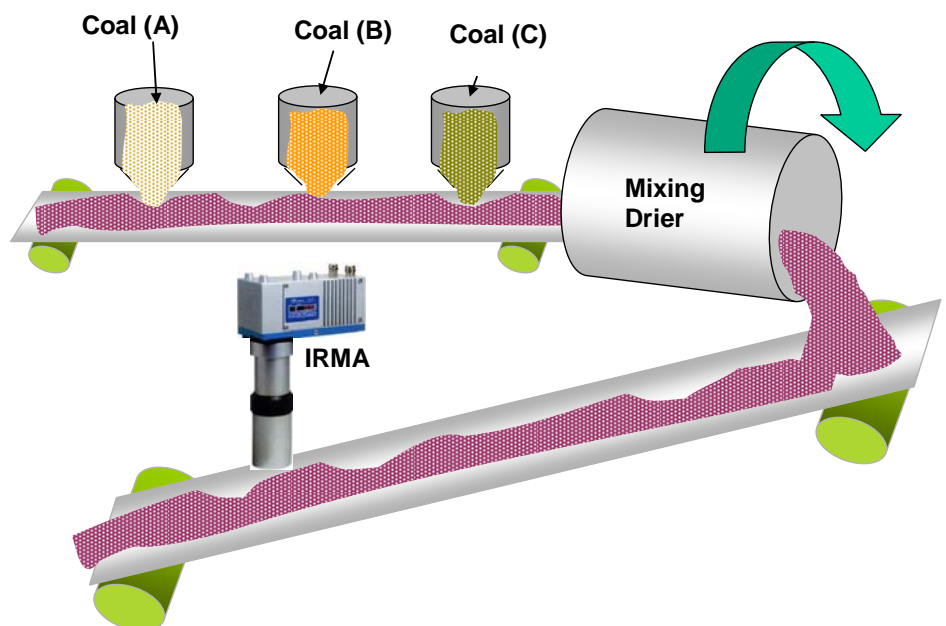
Moisture in raw material for sintering application

The CHINO IM series is an on-line multi wavelength analyzer utilizing infrared absorption technology to measure percent water in raw material such as clay, iron ore, lime stone or coal.

The standard moisture range of the unit is 0.0% to 15.0% with a 0.3% resolution or 0.0% to 30.0% with a 0.8% resolution. Such raw materials may be stored in an open atmosphere condition. Therefore water content in this raw material varies depending on weather conditions (Rain or Dry season, etc.).

Signal processing capabilities are built into the compact designed detector unit for easy installation and operation. A maximum of 99 calibration curves can be stored into the detector memory for numerous measurement applications.

The detector can be used by itself or connected to a PC or DCS plant control system. Both analog (4 to 20mA DC) and digital (RS-485 or LAN Ethernet) outputs are provided. A remote setting display unit, which connects up to 9 detector units, can be used to set various detector functions and also displays measured values.



Products / Location	Parameter	Range
Sintered iron	Moisture	4 to 15%

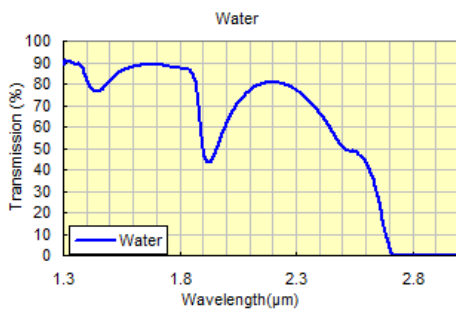
Recommended model / Item

- * General moisture unit
Model : IRMA1100S Qty : 1
- * Air purge hood
Model : IR-WEA Qty : 1
- * Calibration checker plate
Model : IR-WEB Qty : 1

Installation

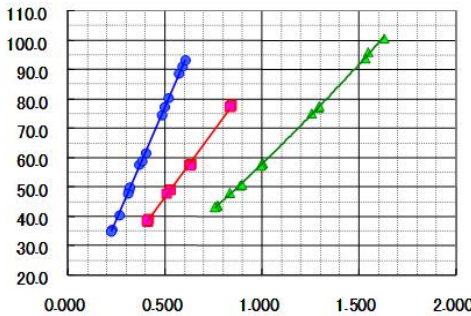
In order to obtain better mixing of those raw materials, water may need to be added, or before sintering the mixed raw material needs to be dried out down to certain moisture level. Installation can be done before mixing for monitoring proper water content for the best mixing, or the unit can be installed after the mixing to get ready for sintering.

Absorption characteristic



Moisture(water) has a unique infrared absorption spectrum regions. Water absorbs at wavelength of 1.43, 1.94, and 3 micrometers.

Calibration curve



Calibration curve is a correlation between moisture determined by customer's reference instrument and IR absorption measured by IRMA.

[Basic sample test for moisture]

1. Prepare samples with various moisture content
 2. Show each sample to IRMA and record absorption level
 3. As conducting step-2, determine moisture level with your reference instrument
 4. Put all data points on a X/Y graph and see if there's a correlation
- Note: Reference instrument may vary depending on the method (by volume or weight).



Mirror type



Fiber type



Liquid cell type



Setting & Display unit



Contact