

RDC-141

Name CO₂ REACTIVITY COKE

Material type
**GRANULAR
PITCH
ELECTRODES
LINING**

Utilization
**R&D
IN-PLANT
LAB**

General description
To minimize the net anode consumption in the electrolysis cells, it is important to use anodes with low reactivity to CO₂ gas, which can be measured by the RDC-146 apparatus. This allows increasing the quantity of carbon available for the production of aluminium and decreasing the excess carbon consumption, which reduces the aluminium production cost. As the CO₂ reactivity of the baked anodes is strongly impacted by the reactivity of the calcined cokes, it is worthwhile to measure it on a routine basis to predict and anticipate any anode quality variations.

The measurement is conducted with the RDC-141 apparatus, where a calcined coke sample is heated at 1000 °C during a given period of time while it is exposed to a saturated CO₂ atmosphere. At the end of the heating cycle, the sample is weighed and the mass loss, in percent, is used to express the CO₂ reactivity of the sample.

Technical information	Standard Method:	ISO 12981-1
	Property:	CO ₂ Reactivity Coke [%]
	Sample:	5 g of coke (1.4-1 mm)
	Process Time:	~ 3 hours
	Installation:	Workbench under fume hood
	Dimensions (LxWxH):	60 x 40 x 68 cm
	Weight:	53 kg
	Electrical Property:	230V 1/N/PE, 50 Hz 0.90 kW, 4 A
	Fluid Property:	CO ₂ , 50 l/h, 3-7 bar
	Certified Reference Standard:	RDC-1141
	Database Connection:	Yes

Additional Recommended Equipment:

Oil content (RDC-176 or RDC-208)
Drying oven (min. temperature 110 °C)
Weighing scale with an accuracy of 0.001 g
Crusher (<1.5 mm)
Sieving machine (1.4 mm and 1 mm sieves)



RDC 1141

Technical information	Weight per unit:	180 g
	Number of tests:	36

