Technical Data Sheet

HiCAL 30 Mineralising Carbon

Product Name

HiCAL 30 Mineralising Carbon – 10 mm

Product Description

Carbon material rich in alumina, silica, sodium and fluorine. Designed for use in cement manufacture. The presence of sodium and fluorides may result in a beneficial fluxing and/or mineralisation effect that reduces firing temperature and promotes desired phase formation in manufacture of cement.

Chemical Composition

Description		Unit		Test Method
Carbon		%	28 to 35	Liebig technique to Australian Standard AS2434.6
Calorific Value		GJ/t	8 to 11	Calorimeter to Australian Standard AS1038.5
Silicon	as SiO_2	%	10 to 25	Inductively Coupled Plasma Spectroscopy (ICP/OES)
Aluminium	as Al_2O_3	%	10 to 27	
Iron	as Fe_2O_3	%	2 to 7	
Calcium	as CaO	%	1 to 3	
Magnesium	as MgO	%	0 to 1	
Potassium	as K_2O	%	0 to 1	
Sodium	as Na_2O	%	13 to 20	
Sulphur	as SO_3	%	0 to 2	
Fluoride	total as F	%	10 to 14	Ion Selective Electrode (ISE)

See following page for trace element analysis.

Typical Sizing

90% passing 10mm sieve

Bulk Density (Loose dry)

1.3 tonne/cubic metre

Transport, Handling and Storage

HiCAL30 is not regulated for transport as dangerous goods.

HiCAL 30:

- Can be stored against typical steel, concrete and aluminium surfaces
- Contains soluble fluoride, any water that comes in contact must be contained with the HiCAL material
- Must not be mixed with acid as noxious gas may be produced.

See HiCAL 30 Safety Data Sheet for further transport, handling and storage information.

HiCAL 30 Mineralising Carbon

Typical Analysis of Trace Elements

Description		Unit	Amount	Test Method
Mercury	Hg	mg/kg	<0.2	Atomic Absorption Spectrometry (AAS) cold vapour generation
Antimony	Sb	mg/kg	<10	Inductively Coupled Plasma Spectroscopy (ICP-OES)
Arsenic	As	mg/kg	<50	
Barium	Ba	mg/kg	<10	
Beryllium	Be	mg/kg	<10	
Cadmium	Cd	mg/kg	<10	
Cobalt	Co	mg/kg	<50	
Chromium	Cr	mg/kg	<150	
Copper	Cu	mg/kg	<350	
Manganese	Mn	mg/kg	<1000	
Nickel	Ni	mg/kg	<500	
Lead	Pb	mg/kg	<100	
Selenium	Se	mg/kg	<5	
Tin	Sn	mg/kg	<20	
Thallium	Tl	mg/kg	<5	
Vanadium	V	mg/kg	<200	
Zinc	Zn	mg/kg	<100	

Mineralogical Composition

Main minerals that may be found in HiCAl 30 are Cryolite (Na_3AlF_6), Villiaumite (NaF) and Graphite (C). Minor minerals may include Nepheline ($Na_3(Na,K)Al_4Si_4O_{16}$), Fluorite (CaF_2), Corundum (Al_2O_3), Diaoyudaoite ($NaAl_{11}O_{17}$), Mullite ($3Al_2O_3{\cdot}2SiO_2$) and other crystalline and amorphous phases.

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