

# 4214/4214B

## SILANE CROSS-LINKABLE PE COMPOUND FOR 10KV AND BELOW CABLE & WIRE

### Description

Grade 4214/4214B is suitable for 10kv and below medium and low voltage cable, it is composed by 95% silane crosslinkable low density polyethylene (compound A) and 5% catalyst (compound B). The main raw materials of the product are cable-use high-purity LDPE compound with mature graft technique and low impurity content, the product's major characteristics are

- The product is suitable for the extrusion method of squeezing extrusion, half-tubing extrusion and tubing extrusion.
- Cables made from the product have excellent performance in smooth cable surface, high extrusion speed and production efficiency.
- Extremely low impurity content and excellent electric performance.

### Standard

After crosslinked in the tepid water, the cable made from the product grade 4214/4214B can comply with the standard of IEC60502-2004, GB/T12706-2002.

### Main Properties & Typical Values

Test items	Test method	Unit	Standard	Typical value
Tensile strength	GB/T1040.3	MPa	≥14.0	21.5
Elongation at break	GB/T1040.3	%	≥350	480
Heat ageing properties (Test temperature 135°C, 168hr)	GB/T8815			
Maximum tensile strength change		%	±20	7.0
Maximum elongation at break change		%	±20	5.2
Heat elongation (200±3)°C x 15min x 0.2MPa)	GB/T2951			
Maximum elongation change under load		%	≤80	46
Maximum permanent elongation change after cooled		%	≤5	-4
Impact brittle temp. (-76°C)	GB/T5470	---	≤15/30*	Pass*
Dielectric Strength	GB/T1408.1	MV/m	≥35*	39*
Dielectric loss factor 50Hz, 20°C	GB/T1409	---	≤1×10 <sup>-3</sup> *	7×10 <sup>-4</sup> *
Dielectric constant 50Hz, 20°C	GB/T1409	---	≤2.35*	2.25*
Volume resistance (20°C)	GB/T1410	Ω.m	≥1.0×10 <sup>14</sup> *	5×10 <sup>14</sup> *

Typical values were tested on the 1mm sample strip by squeezing film extrusion after mixing compound of A & B (at percentage of 95:5) and be boiled in 90°C water for four hours.

\*Especially, these typical values were tested by press moulding sample under the condition of 180±2 °C, 15min, and pressure over 15MPa, then boiled in 90°C water for four hours.

## Recommended Processing Technique

### 1. Extrusion Equipment

Most extruders for PVC and PE suit for 4214/4214B.

The recommended equipment and processing technique is as following.

Ratio of length and diameter	18—25:1
Diameter	45—120mm
Ratio of compressing	1.5—3.5
Ratio of elongation	1:1.0—1:1.5
Filtering mesh	40/60/40

### 2. Extruder processing temperature and other related settings

**Temperature Setting:** Specific processing temperature should be based on different equipment and pressing conditions, reference settings are as following:

Feeding section (°C)	Compression Section (°C)	Measurement Section (°C)	Die head and Mould (°C)
150~165	165~175	175~190	190~200

**Die head setting:** Squeezing extrusion style, half-tubing extrusion style and tubing extrusion style

**Cooling water temperature:** Should not be less than 25°C, gradual cooling water tank is recommended.

### 3. Crosslink

After extrusion and cooling, the cable can be cross linked by immersed in hot water (90°C) or exposed in low pressure vapour. The time required for crosslink is based on the thickness of the insulation and the coil size, the thicker the insulation and the greater the coil size, the longer the crosslink time required. The crosslink time can be calculated according to the equation of 4hr/mm for 90°C.

Please contact our customer service for more technical service.