

# Hanwha

## Wire & Cable Compound

# CLNA TR-8142EC

Tree Retardant Cable Insulation

Density

0.921

### Description

CLNA TR-8142EC is a water tree retardant, crosslinkable, low density polyethylene compound designed for medium voltage power cable insulation. Its permanent tree-retardant additive provides improved performance in medium voltage power cable in service involving exposure to water. It has an extremely low level of contamination and proper balance of non-staining antioxidant and peroxide to ensure thermal stability and optimum cure levels

### Applications

CLNA TR-8142EC can be used for the insulation of medium voltage power cables, i.e. up to 69kV or for corresponding stresses.

### Specifications

CLNA TR-8142EC meets the applicable requirements as below when processed using sound extrusion practice and testing procedure:

ANSI/ICEA S-94-649, S-66-524  
 AEIC CS5-92/AEIC CS7-92  
 IEC 60502, 60840

CENELEC HD 620 S1, 632 S1  
 BS 6622  
 DIN VDE0207,2X11

Physical Properties	Unit	Test Method	Typical Value
Density (Base Resin)	g/cm <sup>3</sup>	ASTM D1505	0.921
Tensile Strength	kg/cm <sup>2</sup>	ASTM D638	200
Elongation	%	ASTM D638	550
Oven Aging @ 135°C, 7 days			
Retention of Tensile Strength	%	ASTM D638	>90
Retention of Elongation	%	ASTM D638	>90
Hot/Set @ 200°C, 20N/cm <sup>2</sup>		IEC 60811-2-1	
Hot Elongation	%		<100
Permanent Set	%		<5
Cure Behavior @ 180°C (MDR)		HCY-I-24196	
Ts1	minute		>1
Tc90	minute		<5
Mh-MI	lb-in		>4.5
Moisture	ppm	HCY-I-24205	<200



Electrical Properties	Unit	Test Method	Typical Value
Dielectric Constant @ 1 MHz	-	ASTM D150	<2.3
Dissipation Factor @ 1 MHz	-	ASTM D150	<0.0005
Dielectric Strength (E <sub>0</sub> )	kV/mm	ASTM D149	>20
DC Volume Resistivity	ohm cm	ASTM D257	>10 <sup>16</sup>

Tree Resistance	Unit	Test Method	Typical Value
Relative Bow-tie Tree Size	%	Internal	<15
Resistance to Water Tree Growth @25 °C, 30days	%	Internal	<0.1

1) These are typical properties and are not to be regarded as specifications.

2) Compression molded sample cured at 175 °C for 15 min.

### Cleanliness

Cleanliness levels are ensured through inspection of extruded tapes using different camera and illumination constellations.

### Processing Guidelines

CLNA TR-8142EC provides excellent surface finish and higher output rates over a broad range of conditions. A range of extrusion temperature in processing condition is 115~130 °C. Optimum results are normally achieved at a melt resin temperature of approximately 130 °C.

### Packaging

The packaging (0.55 MT octabins with bottom and top unloading) are equipped with polyethylene inner-liners and are especially designed for clean handling of the product. The packaging are containerable and suitable for overseas transport.

### Storage

The material should be stored indoors (15~25 °C) in closed original packages in clean and dry environment. It is recommended that the using of the product on a first-in, first-out basis be established. Then recommended storage time at customer should not exceed 1 year.

### Quality Systems

Hanwha maintains a quality management system according to ISO 9001. This system provides traceability of individual batches and their production. If process is changed in a way that suspected to change the properties of the product, Hanwha will provide adequate information to the customer.



### **Certificate**

Based on quality inspection data at production, Hanwha supplies an inspection certificate for each batch. The certificate contains:

Product name  
Batch number  
Production date  
Number of contaminants  
Methanol wash  
etc.

### **Data Sheet and Safety**

Most data sheet and safety data sheets are available on Hanwha web site, <http://hcc.hanwha.co.kr>  
Please contact your Hanwha representative for more details on various aspects of safety, recovery and disposal of the product.

