

Filling Compound for Communication Cable

Application

HAFC-80-A filling compound for communication cable is specifically designed for filling of oil-filled communication cables.

Feature

It has excellent water resistance and electrical performance. It is a kind of hot melt complex with water resistance. It shows extremely small shrinkage and excellent stability at high temperature. It is soft and adhesion.

Main Technical Parameters

Parameter	Typical Value	Test Method
Appearance	White	Visual inspection
Color stability @ 130°C / 120hrs	<2.5	ASTM D127
Density @ 20°C (g/ml)	0.86 ± 0.01	ASTM D1475
Drop point (°C)	≥ 90	ASTM D 566-93
Flash Point COC - °C	>230	ASTM D 92
Cone penetration @ 25°C (dmm)	70 ± 20	ASTM D 217
Oil Separation %	Zero	IEC 811-5.1 clause5
OIT @ 190°C (min)	>10	ASTM D3895
Relative permittivity@ 50Hz, 25°C	≤ 2.3	GB1409
Dissipation Factor, 1MHz	$<1.0 \times 10^{-3}$	GB1409
Volume Resistivity @ 20°C (ohms.cm)	$>1.0 \times 10^{12}$	GB1410
Oxidation resistance	≥ 2000 ppm	
Kinematic Viscosity at 120°C - cst	100 ± 20	ASTM D445

Compatibility

HAFC-80-A filling compound for communication cable is well compatible with high polymer material, steel and aluminum. But we recommend that the compatibility test should be made before polymer materials are in contact with this compound.

Manufacturability

HAFC-80-A filling compound for communication cable is designed for hot filling.

About communication cable



Communication cable structure

A seemingly simple communication cable, if you look closely at the open cable, you will find that scientists and technicians have used a lot of "thinking". From a structural point of view, communication cables are generally divided into two parts: the cable core and the sheath. The protective layer can be divided into sheath and outer sheath. The core consists of a conductive conductor that is protected by insulation and the necessary shielding, filling and binding straps (wires). In terms of appearance, the cross section of the cable core is generally circular.

The cable core is the main part of the transmission of information. In order to protect the cable core from moisture and from external mechanical damage and electrical interference, a sheath is added on the outside of the cable core. If necessary, an additional protective layer is required.

At the beginning, we usually use lead as a sheath. This is because lead is soft, easy to manufacture and install, and it also has a moderate shielding effect. However, technicians eventually chose aluminum. This is because lead is too heavy. Transport is very difficult. Aluminum has better shielding than lead and is much lighter. Of course, anything is pros and cons. Aluminum is relatively difficult to manufacture with respect to lead and is susceptible to corrosion.

In a dry environment, metal-free polyethylene or PVC sheaths can also be used.

A cable sheathing outer sheath is used outside the communication cable laid on the bottom, and an anti-corrosion layer is also required on the outside of the metal sheathing layer.

The body must be covered with a shielding layer and then twisted into a cable. The shielding layer is mostly double wrapped steel strip.

Chromatography

Core Chromatography

The cable core chromatography of cables can be divided into general chromatography and full chromatography.

(1) General chromatographic communication cable

Common chromatogram twisted concentric communication cables have rarely been used.

(2) Full-color communication cable

The meaning of full-chromatography means that any pair of cores in the cable can be identified by the color of the tie at each level and the color of the pair. In other words, you can find the pair by giving the number, and then take out the pair. You can say the line number.

(1) Full-chromatographic twisted concentric core (rarely used)

(2) Full-chromatogram twisted unit core

1 Full Chromatography Strand unit core chromatography is most used in all-plastic local cables. It consists of white (codename W), red (R), black (B), yellow (Y), purple (V) as the pilot colors (representing a line), blue (Bl), orange (O), and green (G), Brown (Br), and Ash (S) as the loop color (representing b line) Ten colors are composed of 25 pairs of full chromatogram pairs, and 25 pairs of basic U units are called.

Industry outlook

The wire and cable industry is China's second largest industry after the automotive industry, with product variety satisfaction rates and domestic market share exceeding 90%. In the world, China's total output value of wire and cable has surpassed that of the United States and has become the world's largest wire and cable producer. With the rapid development of China's wire and cable industry, the number of newly added companies has continued to rise, and the industry's overall technological level has been greatly improved.

The sustained and rapid growth of China's economy provides a huge market space for cable products. The strong attraction of the Chinese market has led the world to focus on the Chinese market. In the short period of reform and opening up, China's cable manufacturing industry has become the world's largest. The huge production capacity created makes the world impressive. With the continuous expansion of China's power industry, data communication industry, urban rail transit industry, automobile industry and shipbuilding industry, the demand for wire and cable will also grow rapidly. The wire and cable industry in the future will have enormous potential for development.

Manufacturing method

Although there are certain differences in the manufacturing process of different cables, their general processing methods have their common features. In order to ensure the structural dimension of the cable is stable and have good electrical properties, the production order of the cable is taken from inside to outside according to its structure. The entire manufacturing process is divided into the manufacture of insulated wire cores, the twisting of wire groups, the manufacture of coaxial pairs, the cabling process, the drying of cores, and the manufacture of metal sheaths and sheaths for cables.