Specification About ECDP Chip

Description:

ECDP chip is one modified and eco-friendly cationic polyester chip with high performance. It can be dyed at the temperature below 100℃ in open dye vat and its dye-uptake rate can reach 98% or more. The yarn made from ECDP chips has an excellent color fastness and beautiful luster. Also it can be blended and interwoven with any synthetic fiber, man-made fiber and natural yarn.

Application:

ECDP chips can be used for the spinning of POY (20d/36f-300d/288f), FDY (20d/36f-300d/288f) and short staple fiber.

Parameters:

ITEM		UNIT	STANDARD
INTRINSIC VISCOSITY		dl/g	0.60±0.012
CONTENT OF THREE MONOMER (SIPM)		wt%	3.5%
Melting Point		℃	242℃
DEG CONTENT		%	1.7±0.15
-COOH ENDGROUP		mol/t	≤25
COLOUR VALUE	L	/	≥48
	b	/	≤5.5
	a	/	≤-0.5
WATER CONTENT		%	≤0.3
TiO_2 CONTENT		%	M±0.012
Remark: M is the central value of TiO_2. For bright chips, M=0 and for semi-dull chips, M=0.3			

Spinning Production Process: (taking FDY 75D/36F for example):

1. Crystallization and drying process of ECDP chips

There are two different ways: Vacuum Drum Drying Or Continuous Filling Drying

1.1 Vacuum Drum Drying

Vacuum degree is less than 2 KPA, and last 2 hours under temperature from 60℃ to 80℃, and then dry the chips under below condition:

Drying Temperature (℃)	100	110	125
Drying Duration (hour)	20	17	14

Remark: The better drying result comes along with better vacuum condition. If the vacuum condition can not be reached, then last the drying duration. Generally speaking, do not increase the drying temperature, and the final water content should be less than 30PPm.

1.2 Continuous filling drying

1.2.1 Crystallization: using fluidized bed, 115℃-125℃, 20mins

1.2.2 Drying: air dew point ＜-68, water content ＜30ppm

Drying Temperature (℃)	90	100	110	120	125	130
Drying Duration (hour)	30	24	15	15	14	–

Remark: long drying at low temperature is recommended. Drying temperature is no more than 135℃. The above table is just for your reference and small adjustments are required according to the water content and spinning conditions.

2. Temperature Zone Setting of Spinning Screw

Screw Zone	I	II	III	IV	V	Box Temp.
Temp. Setting (℃)	260	265	270	275	280	280

3. Spinning Process Setting

Cross-air temp.	Relative Humidity	Air Speed
25±1℃	75%±5%	0.25-0.35m/s

4. Winding Process Setting

first drawing roller temp.	second drawing roller temp.	winding tension	winding speed
85-90℃	120-130℃	0.23-0.28cN/dtex	3800-4400m/min

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