

COAGULATED DISPERSION GRADE CD141E

Description

Fluon® CD141E is a white free flowing powder made by coagulating an aqueous dispersion of polytetrafluoroethylene. CD141E is a medium molecular weight homopolymer. The process to make CD141E does not use ammonium salts of perfluorooctanoic acid (PFOA).

CD141E is especially suited to the manufacture of low density threadseal tapes. It combines the ease of calendaring of CD1 with an improved stretch performance. The tapes produced are more uniform and polymer efficiency is improved compared with CD1.

End Uses

Fluon® CD141E is a medium extrusion pressure polymer which has been designed for paste extrusion at low to medium reduction ratio into tubes or into rods for subsequent calendaring into threadseal tapes.

Processing

Fluon® CD141E can be processed by paste extrusion of a lubricated mix following by drying and sintering. Further information on these techniques may be found in Technical Service Note F3/4/4, "The processing of Fluon® PTFE coagulated dispersion powders".

This information sheet contains typical property data which should not be used for specification purposes.

Typical Properties

Property	Typical Value	Units	Test Method
Bulk density	520	kg/m ³	FTM 126
Mean particle size	475	microns	FTM 125
Moisture content (Desiccant pack weight increase 3 days after packing)	<6	g	FTM 121
Moisture (weight loss)	<0.05	%	FTM 140
Extrusion pressure at reduction ratio 400:1 (1.59 mm die)	27	MPa	FTM 19
SSG	2.175	-	FTM 128
Reduction ratio range	25-700	-	-
Colour	White	-	-



TECHNICAL INFORMATION SHEET

Tape Making

The following conditions have been used to make normal density tapes from CD141E by extruding a rod and then calendering.

Rod Extrusion

Machine	20 te Havelock
Polymer	CD141E
Lubricant	20% odourless kerosene
Conditioning time/temperature	24 hr/25°C
Preform pressure	350 lb/in ²
Extrusion cylinder	1.625 in
Die diameter	0.24 in
Die angle	20°C
Die temperature	30°C
Reduction ratio	46:1
Ram speed	30 mm/min
Extrusion pressure	2.2 MPa

Tape Calendering

The rod from this extrusion was stored at 25°C in a container including a small amount of kerosene.

The rod was calendered using stainless steel bowls of 10 in diameter at 30°C. The tape made had the following dimensions and was of good quality:

	Maximum width	Minimum thickness
CD141E	50 mm	0.030 mm (0.0012 in)

Tubing

The following conditions have been used to make tubing from CD141E on a vertical ram extruder. The 12mm tubes were dried and sintered in a batch oven.

	12 mm Tube
Polymer	CD141E
Machine	150 te Havelock
Lubricant (VM&P Naphtha)	17.5%
Conditioning time/temperature	24 hr/25°C
Preform pressure	500 lb/in ²
Extrusion cylinder	2.5 in
Mandrel diameter	0.75 in
Die diameter	0.502 in
Die angle	30°
Die temperature	80 ⁰ C
Core pin diameter	0.436 in
Reduction ratio	92:1
Extrusion rate (tube speed)	0.46 m/min
Extrusion pressure	18.5 MPa
Drying:	
Drying oven temperature	90°C
Drying oven length	Batch oven
Residence time	18 hours
Sintering:	
Sintering oven temperature	380°C
Sintering oven length	Batch oven
Residence time	2 hours
Cooling	Air quench
Tube specific gravity	2.139

Tubes made under these conditions had a smooth surface finish and were white in colour.



TECHNICAL INFORMATION SHEET

Packaging

Fluon® CD141E is packed in plastic with plastic lids containing 25 kg.

Disposal

Waste polymer should be disposed of by landfill in accordance with any local regulations for the disposal of products of low toxicity or may be incinerated under approved controlled conditions.

Safety In Use

Users must refer to the relevant Material Safety Data Sheet.

Storage and Handling

Fluon® CD141E should be stored in clean dry conditions between 15°C and 18°C to ensure it does not become compacted and remains easy to sieve.

The lubricated mixes of powder should be stored at 25°C for 24 hours before use in air tight containers to ensure that the lubricant is evenly distributed and that the powder will preform and extrude uniformly.

Food Contact Approval

Information on food contact approval is available from the AGC Chemicals Europe, Ltd Sales Office.

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Fluon® grades are general industrial grades. It is the responsibility of the purchaser to check that the specification is appropriate for any individual application. Particular care is required for special applications such as pharmaceutical, medical devices or food. Not all grades are suitable for making finished materials and articles for use in contact with foodstuffs. It is advisable to contact the AGC Chemicals Europe, Ltd sales office for the latest position. Users of Fluon® are advised to consult the relevant Health and Safety literature which is available from the AGC Chemicals Europe, Ltd sales office.

Fluon® is a registered trade mark of the Asahi Glass Company.



TECHNICAL INFORMATION SHEET

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