

Crestapol 1256

High performance urethane acrylate hybrid resin for pultrusion

Introduction

Crestapol 1256 is a thixotropic urethane acrylate hybrid resin with very high-speed cure and strength build characteristics. It is ideal for improving productivity in continuous manufacturing processes such as pultrusion.

Application

Crestapol 1256 is suitable for the manufacture of fibre reinforced profiles produced using the pultrusion process.

Features and Benefits

Crestapol 1256 offers excellent reinforcement wet out, rapid cure/laminate strength build and is suitable for the manufacture of high mechanical performance composite parts.

Typical Pultrusion Formulation

Crestapol 1256 should be allowed to attain workshop temperature (18 - 20°C / 65 - 70°F) before use. Stir well by hand, or with a low shear mixer to avoid aeration, and then allow to stand before use.

There are many variables involved in optimising a pultrusion manufacturing process. A non- exclusive list of factors to consider is listed below.

- Reinforcement type
- Resin type
- Resin/reinforcement ratio
- Resin temperature
- Profile shape
- Profile thickness
- Die length
- Die heating method (oil, electric, water)
- Peroxide package
- Die temperature set points

An example start point formulation/set up is detailed below, however, for the reasons above, there will be some local optimising required to maximise productivity. Reinforcement content of 65-68% is achievable with this resin.

Start Point Formulations

Component	Parts
Crestapol 1256	100.00
Internal Release Agent	3.00
Trigonox HM (or equivalent)	1.25
Trigonox C (or equivalent)	1.25

OR

Component	Parts
Crestapol 1255	100.00
Internal Release Agent	3.00
Perkadox 16 / Norox 600 CL2	0.50
TBPEH / Norox 410	1.00
TBPB / Trigonox C	1.00

Typical Starting Set Point Temperatures (Based on a die length of 1000mm / 3ft+ die with 3 equal zone lengths.)

Die Sections	Temperature (°C)	Temperature (°F)
Zone 1	80.0	176.0
Zone 2	130.0	266.0
Zone 3	150.0	302.0

Recommended Start Up Speed = 30 cm per minute / 12 inches per minute

Typical Properties

The following tables give typical properties of Crestapol 1256.

Liquid resin properties	Units	Specification
Viscosity (cone & plate @ 25°C / 77°F)	cPs	150
Viscosity,RVF 2/10 rpm/24°C	mPa.s	1400
Specific Gravity (25°C/ 77°F)		1.07
Volatile Content	%	40 - 42
SPI Geltime(25°C – 65°C),50g+ 1g Perkadox CH50X	min	4.5
SPI Geltime(65°C – 88°C),50g+ 1g Perkadox CH50X	min	17.0
SPI Geltime(88°C – Peak),50g+ 1g Perkadox CH50X	min	6.5
SPI Peak Exo,50g+ 1g Perkadox CH50X	°C	215
Stability from date of manufacture when stored in accordance with storage recommendations	Months	9

Cast resin properties †	Units	Specification	Unit (US)	Specification
Barcol Hardness (Model GYZJ 934-1)		44		44
Deflection Temperature under load † (1.80 MPa)	°C	93	°F	199.4
Tensile Modulus	GPa	3.5	ksi	507.6
Tensile Strength	MPa	79	ksi	14
Elongation at break	%	3.3	%	3.3

† Curing schedule 24hours @ 20°C/70°F then 3 hours at 80°C / 176°F

Storage

Crestapol 1256 should be stored between 5°C and 25°C (41-77 °F) in the original, unopened container in a dry, well ventilated place. Protect from heat and direct sunlight. Avoid contact with oxidising agents. If stored outside of these recommendations, shelf life will be significantly reduced.

Packaging

Crestapol 1256 can be supplied in 25kg, 225kg & IBC containers.

Health and Safety

Please see separate Material Safety Data Sheet.

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