



## RUIFENGPOLY™ LS-61

### Acrylic Impact Modifier

#### **Product Description**

**AIM LS-61** is a new high performance acrylic impact modifier. This new generation weather-resistant impact modifier, which has a structure of butyl acrylate core and methyl methacrylate shell, is the graft copolymer of the two monomers. With the strictly controlled particle size, Tg of the core, and the coordination of a third component in the shell, LS-61 is produced to effectively improve the impact resistance and weatherability of PVC.

#### **Technical specifications**

Index/Product Name	LS-61
Appearance	White fluid powder
Particle size 40 mesh (%)	≥ 99
Volatile contents (%)	≤ 1.0
Bulk density (g/cm <sup>3</sup> )	0.40-0.55

#### **Product Benefits**

- ◆ Excellent Weatherability. LS-61 has been extensively tested for long-term weather resistance and impact and color retention.
- ◆ Superior "Satin" Surface Finish. The wide processing window of LS-61 assures a consistently flawless "satin" surface finish.
- ◆ Good Low-Temperature Impact. The unique chemical composition of LS-61 imparts excellent low-temperature impact resistance.
- ◆ Improved Processability. Because of the Low melt viscosity of LS-61, extrusion temperatures are lower, resulting in enhanced compound stability and output.
- ◆ High Output. The low melt viscosity of LS-61 allows higher output without increasing extruder amps.

#### **Material Safety Data Sheets**

MSDS are available outlining hazards and safe handling methods. consult Ruifeng for MSDS of LS-61 before handling for additional information concerning personal protective equipment, Safety, Health and Environmental.

#### **Storage, Packing & Transportation**

LS-61 Packed in 25kg woven bag or 500kg bulk bag. Avoid insolation, drench. Stored in cool and draughty place, shelf life: one year.

#### **Countertypes**

KM-355/KM-342 FM-40 D-320 IM808



## Powder Characteristics

Item \ Class		<b>Kaneka FM50</b>	<b>Atofina D320</b>	<b>Ruifeng LS-61</b>
Bulk Density g/cm <sup>2</sup>		0.49	0.37	0.50
Particle Size Distribution	≥60 Mesh	15.2	3.6	16.2
	60-80 Mesh	29.5	10.7	26.9
	80-100 Mesh	23.8	17.9	26.3
	100-120 Mesh	12.0	17.8	18.3
	120-180 Mesh	14.3	25.7	9.8
	≤180 Mesh	5.2	24.3	2.5

## Processing Properties

Item \ Class		<b>Kaneka FM50</b>	<b>Atofina D320</b>	<b>Ruifeng LS-61</b>
Max. Torque N		33.8	32.6	30.5
Min. Torque N		16.6	20.9	15.0
Balance Torque N		26.5	26.5	26.5
Fusion Time S		48	48	66
Plastication Temp.		160°C		

## Other Properties

Item \ Class		<b>Kaneka FM50</b>	<b>Atofina D320</b>	<b>Ruifeng LS-61</b>
Powder Chroma--tic Difference	L	95.27	92.62	93.65
	a	-0.11	0.01	0.43
	b	-0.18	-1.08	2.02
	W	86.43	86.68	80.13
Thermal Coloring Time in 200°C Oven(min)		16	22	16
Whiteness Change Ratio after 50h UV Exposure		3.13	5.06	2.89

- L: brightness。 L ≥ 82 according to GB8814  
 a: From red(-) to white(+) -2.5 ≤ a ≤ 5 according to GB8814  
 b: From yellow(-) to blue(+) -5 ≤ b ≤ 15 according to GB8814

## Mechanical Properties

Item \ Class		<b>Kaneka FM50</b>	<b>Atofina D320</b>	<b>Ruifeng LS-61</b>
Tensile Strength		40.24	40.30	40.89
Notch Impact Strength		14.51	12.08	12.14

Formulation



Components	Content(PHR)
PVC S-1000	100
Calcium Stearate	1.0
Lead Stearate	1.8
Dibasic Lead Phosphite	3.5
Calcium Carbonate	20
Titanium Dioxide	4.0
Stearic Acid	0.2
PE Wax	0.1
Processing Aid LP-20	1.0
Impact Modifier	6.0

#### Laboratory Equipment

Device
RM-200 Torque Rheometer
XLB-D Curing Press
5L Homomixer
Universal Sampling Machine
Color Difference Meter
XSK-160B Two Roller Mill
Electronic Universal Sampling Machine
Impact Testing Machine with Simple Beam

#### Test Method

PVC compounds of the formulation ratio were dry-blended in a homomixer and were discharged for cooling when the blending temperature reached 120°C. The resulting composite was further dry-blended with given amounts of processing aids to afford a series of blends, of which the processing rheologic property and mechanical property were tested.

All the composites and blends were respectively melt-blended in a two-roller mill at 180°C for 3 minutes to give sheets, which were compression-molded at 180°C and 15Mpa for 3 minutes on a curing press to form test pieces. The tensile strength of the test pieces were evaluated according to GB/T1040. The notched-bar impact testing was performed on impact testing machine with simple beam at 15°C and stretch test was performed on electronic universal stretch tester at 15°C.