

HELI™ HL-200 Foaming Regulator

■ Description

HL-200 developed by our company is actually acrylic processing aid and has all characteristics of acrylic processing aids. The only difference between them is that the molecular weight of foaming regulators is much more higher than that of processing aids.

■ product benefits

- Super melt strength
- Lower density for PVC foaming products
- Excellent sheet uniformity
- Faster fusion promotion
- Excellent surface-glossness

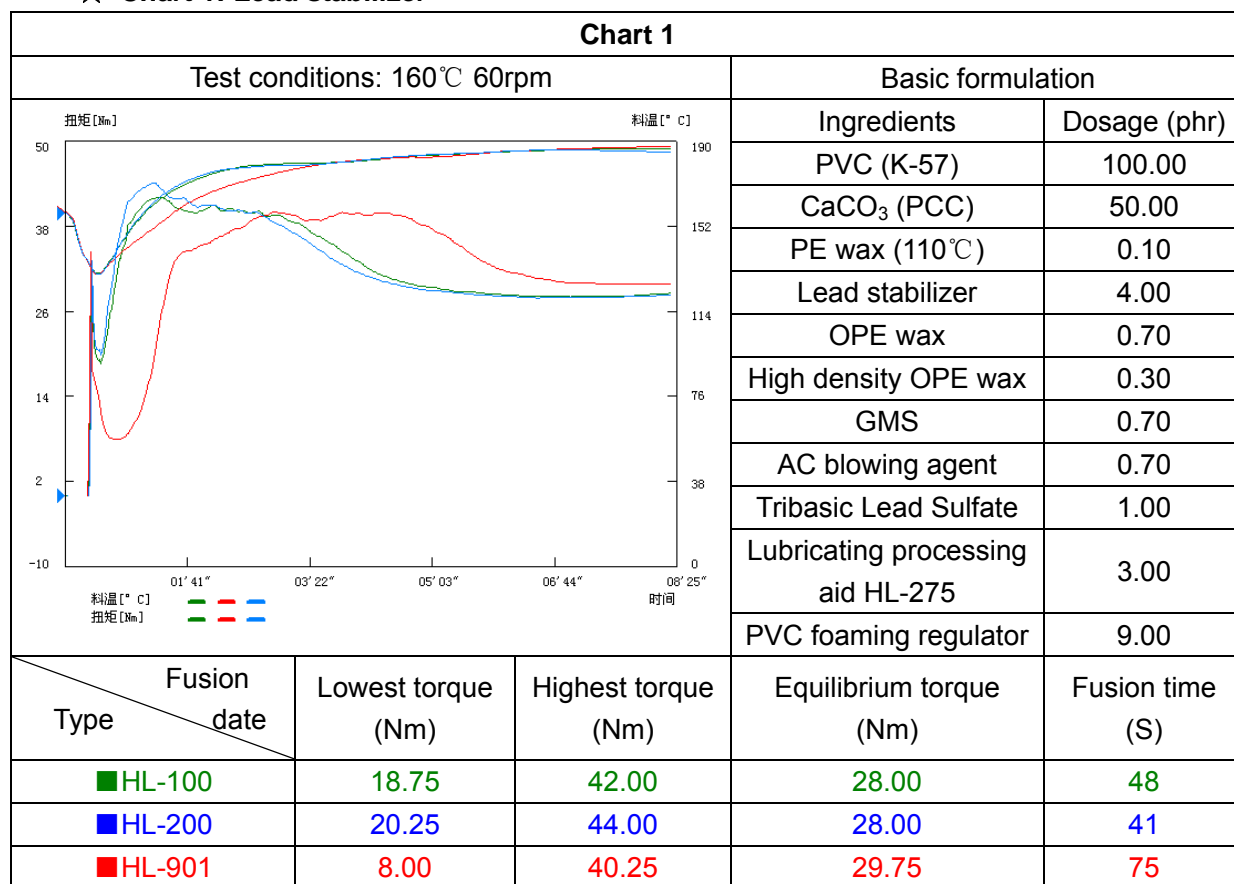
■ Technical specifications

Specification	Unit	Test standard	HL-200
Appearance	--	--	White powder
Bulk density	g/cm ³	GB/T 1636-2008	0.45±0.10
Sieve residue (30 mesh)	%	GB/T 2916	≤2.0
Volatile content	%	ASTM D5668	≤1.50
Intrinsic viscosity (η)	--	GB/T 16321.1-2008	11.00-13.00

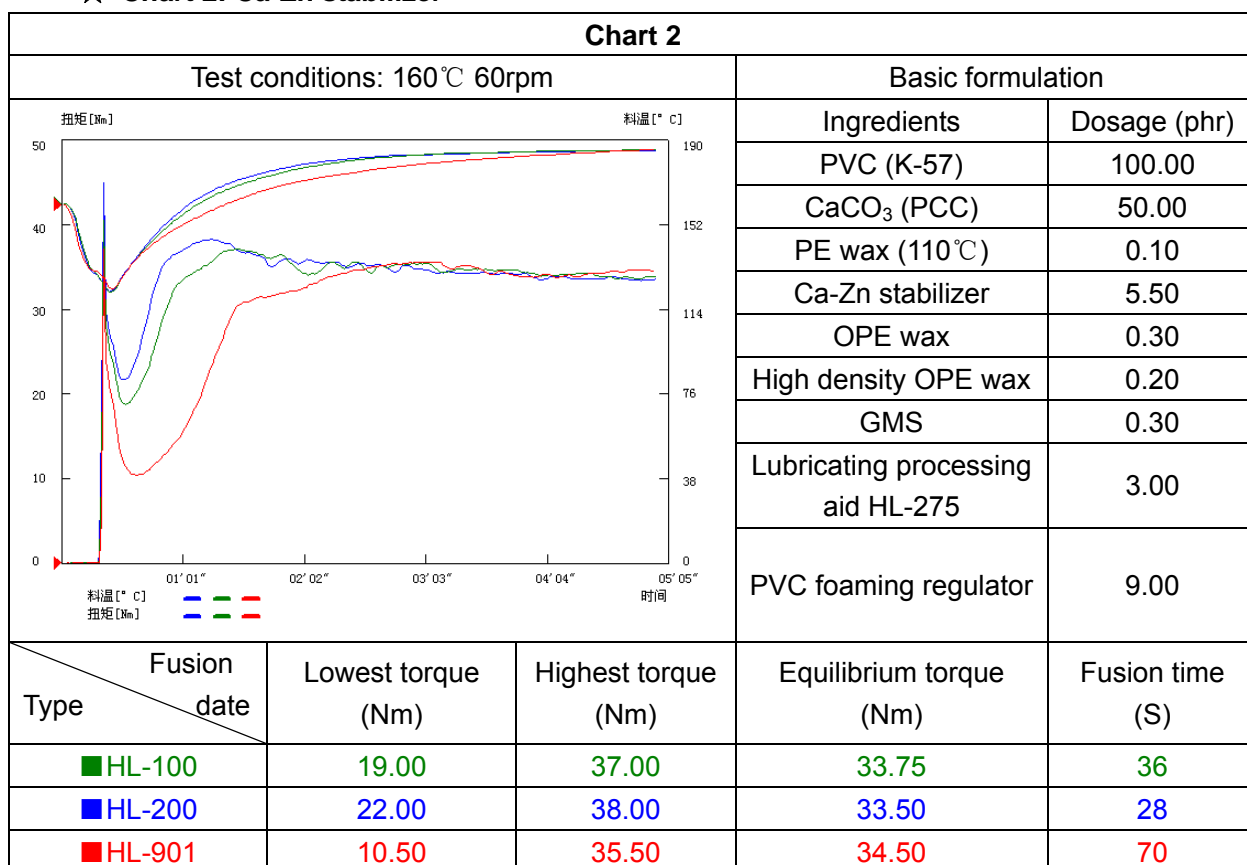
■ Properties comparison

● Fusion properties comparison

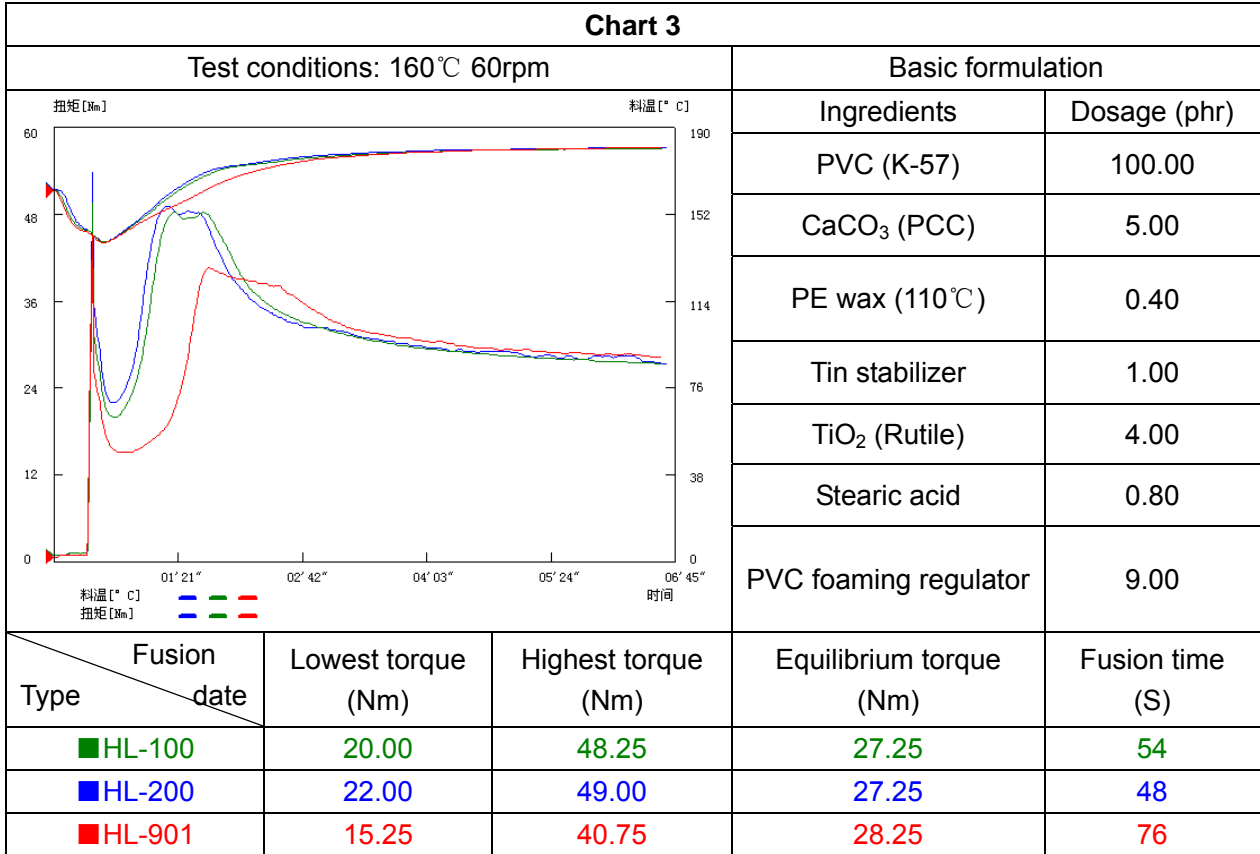
★ Chart 1: Lead stabilizer



★ Chart 2: Ca-Zn stabilizer



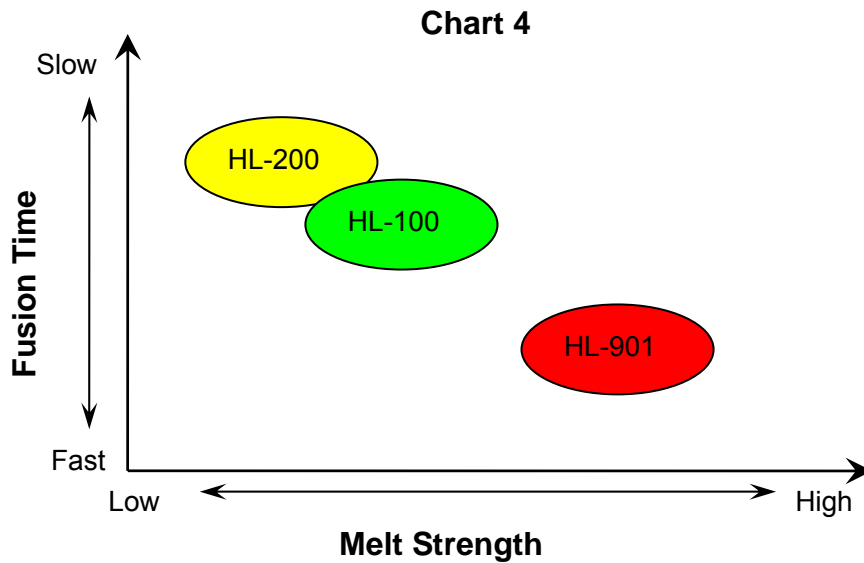
★ Chart 3: Tin stabilizer



● Table 1: Processing properties comparison

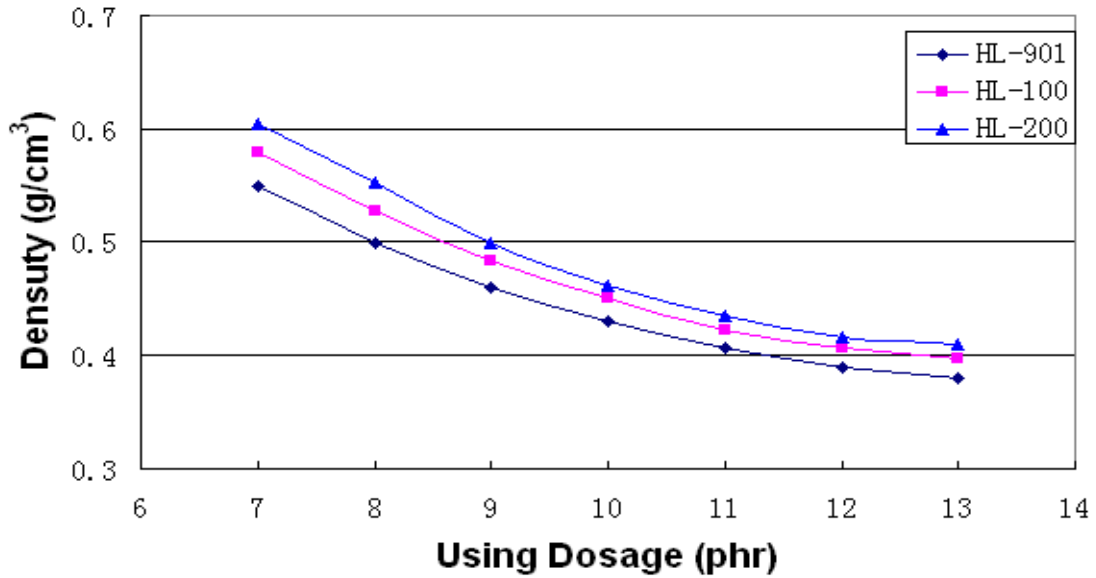
Specification	Promote fusion	Melt strength	Dispersion	Die swell
HL-200	☆☆☆☆☆	☆☆☆	☆☆☆☆	☆☆☆
HL-100	☆☆☆☆	☆☆☆☆	☆☆☆☆	☆☆☆☆
HL-901	☆☆	☆☆☆☆☆	☆☆☆☆	☆☆☆☆☆

● Chart 4: Relationship between melt strength and molecular weight



● Chart 5: Relationship between density and using dosage

Chart 5

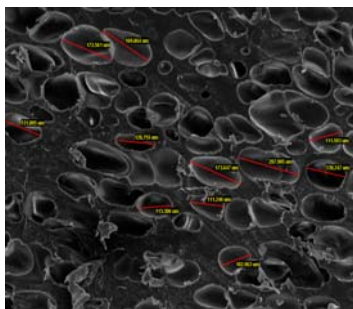


Basic formulation for Chart 5

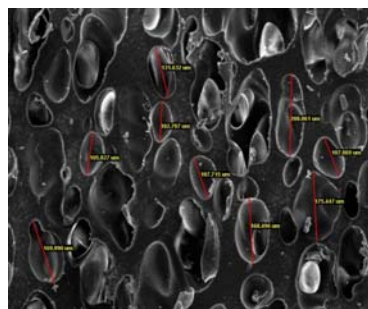
Ingredients	Dosage (phr)
PVC (K-57)	100.00
CaCO ₃ (PCC)	50.00
PE wax (110°C)	0.10
Ca-Zn stabilizer	5.50
OPE wax	0.30
High density OPE wax	0.20
GMS	0.30
Lubricating processing aid HL-275	3.00
PVC foaming regulator	7.00-13.00

● Chart 6: Cell structure comparison for PVC foaming sheets

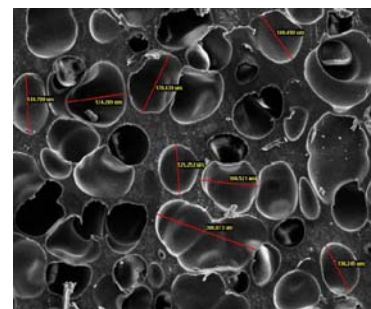
Chart 6



HL-901



HL-100



HL-200

■ Product application

HL-200 is mainly used to produce PVC foaming products, such as PVC profile, pipes and panel etc.

Recommended formulation:

● **Foaming board formulation**

Lead stabilizer

Ingredients	Dosage (phr)
PVC (K-57)	100.00
Lead stabilizer	4.20
CaCO ₃ (PCC)	50.00
High density OPE wax	0.48
PE wax (110°C)	0.36
High-melting PE wax	0.28
Int.lubricant HG-60	0.90
AC blowing agent	0.60
NaHCO ₃	1.20
Lubricating processing aid HL-275	2.00
HL-200	12.00

Ca-Zn stabilizer

Ingredients	Dosage (phr)
PVC (K-57)	100.00
Ca-Zn stabilizer	5.50
CaCO ₃ (PCC)	50.00
High density OPE wax	0.40
PE wax (110°C)	0.30
High-melting PE wax	0.24
Int.lubricant HG-60	0.80
AC blowing agent	0.60
NaHCO ₃	1.20
Lubricating processing aid HL-275	2.00
HL-200	12.00

● **Wood plastic product foaming profile formulation**

Lead stabilizer

Ingredients	Dosage (phr)
PVC (K-57)	100.00
CaCO ₃ (PCC)	25.00-40.00
Wood powder	25.00-40.00
Lead stabilizer (15%-35%Pb)	4.00-5.00
PE wax (110°C)	0.40-1.00
Stearic acid	0.40-1.00
AC blowing agent	0.60-1.00
NaHCO ₃	0.80-1.50
Acrylic impact modifier HL-708A	6.00-8.00
Processing aid HL-225	1.00-2.00
HL-200	5.00-8.00

Ca-Zn stabilizer

Ingredients	Dosage (phr)
PVC (K-57)	100.00
CaCO ₃ (PCC)	25.00-40.00
Wood powder	25.00-40.00
Ca-Zn stabilizer	4.00-5.00
PE wax (110°C)	0.20-0.80
Stearic acid	0.30-0.80
AC blowing agent	0.60-1.00
NaHCO ₃	0.80-1.50
Acrylic impact modifier HL-708A	6.00-8.00
Processing aid HL-225	1.00-2.00
HL-200	5.00-8.00

Tin stabilizer

Ingredients	Dosage (phr)
PVC (K-57)	100.00
CaCO ₃ (PCC)	25.00-40.00
Wood meal	25.00-40.00
Tin stabilizer	1.00-1.50
PE wax (110°C)	0.40-1.00
Stearic acid	0.40-1.00
AC blowing agent	0.60-1.00
NaHCO ₃	0.80-1.50
Acrylic impact modifier HL-708A	6.00-8.00
Processing aid HL-225	1.00-2.00
HL-200	5.00-8.00

■ Packaging and storage

20kg/bag: PP valve bag with PE liner

500kg/sack: PP bag with PE liner

It should be stored in cool and dry surroundings, with shelf life of two years, it can be still used if qualified by inspection after shelf life.