



Acrylic Processing Aid

Transparent processing aid: AIP 5510

Revision date: 1st July, 2017

Part 1: Introduction

AIP 5510 is mainly to promote fusion of PVC compound with no influence on transparent PVC products. It can maintain good mechanical properties of PVC transparent products. It's widely used in the PVC products especially for transparent products, such as PVC transparent film, sheet, bottle and so on.

Part 2: Advantages

- Promote the fusion
- Excellent transparency for PVC finished products
- Excellent surface gloss of PVC products
- Good particle size

Part 3: Application

AIP 5510 can be widely used in the PVC products especially for transparent products, such as PVC transparent film, sheet, bottle and so on.

Part 4: Composition

4.1 Technical specifications

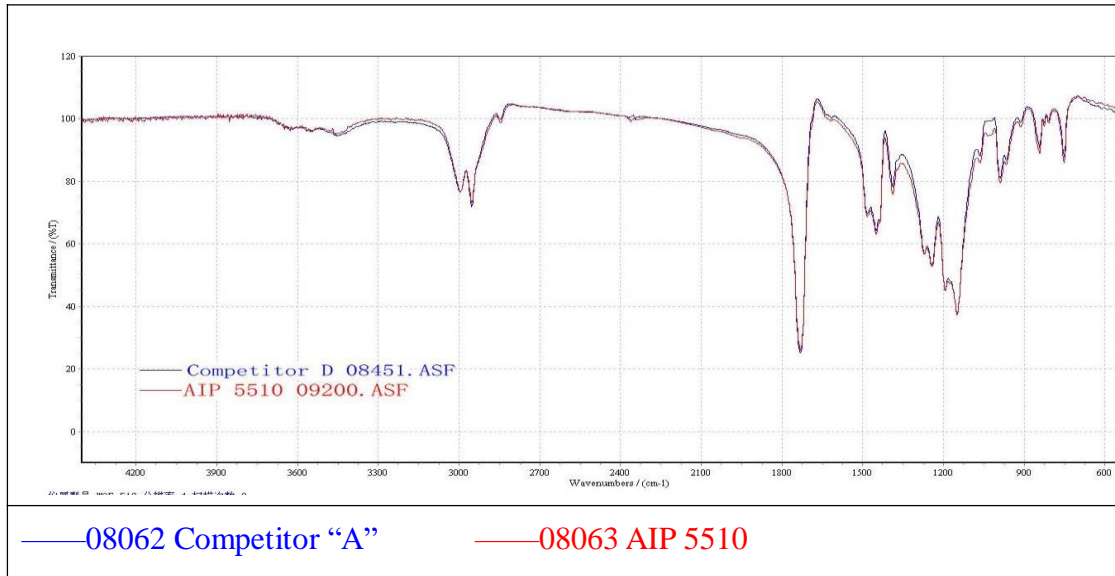
Specification	Unit	Test standard	AIP 5510
Appearance	--	--	White powder
Bulk density	g/cm ³	GB/T 1636-2008	0.45±0.10
Sieve residue (30 mesh)	%	GB/T 2916	≤2.0
Volatile content	%	ASTM D5668	≤1.50
Intrinsic viscosity (η)	--	GB/T 16321.1-2008	2.3-3.9

Glass transition temperature (T _g)	°C	GB/T 19466	110.54
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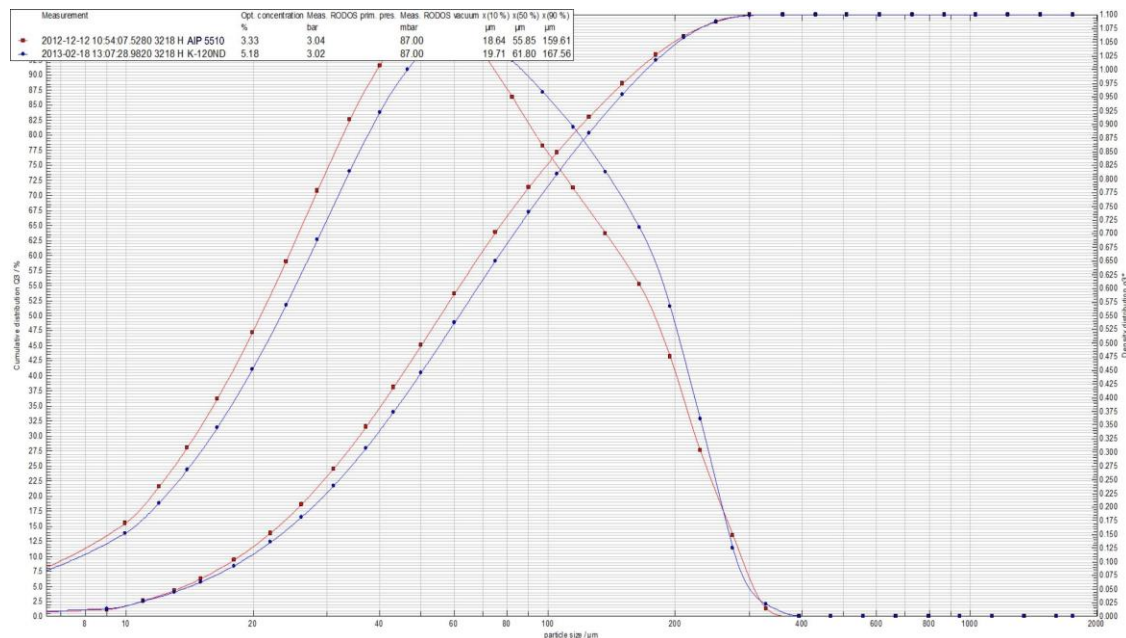
4.2 Molecular weight

Type	MW	Mn	MW/ Mn
Competitor D	1663090	330823	5.03
AIP 5510	2150000	498691	4.31

4.3 FTIR analysis



4.4 Particle size distribution



Type	X _{10%} (μm)	X _{50%} (μm)	X _{90%} (μm)
Competitor D	19.7	61.8	167.6
AIP 5510	18.6	55.9	159.6

Part 5: Performance Comparison

5.1 Basic formulation for fusion test

Mixing equipment type: SHR-5A from Zhang Jiagang Beier Machinery Co., Ltd

Mixing condition: 120°C

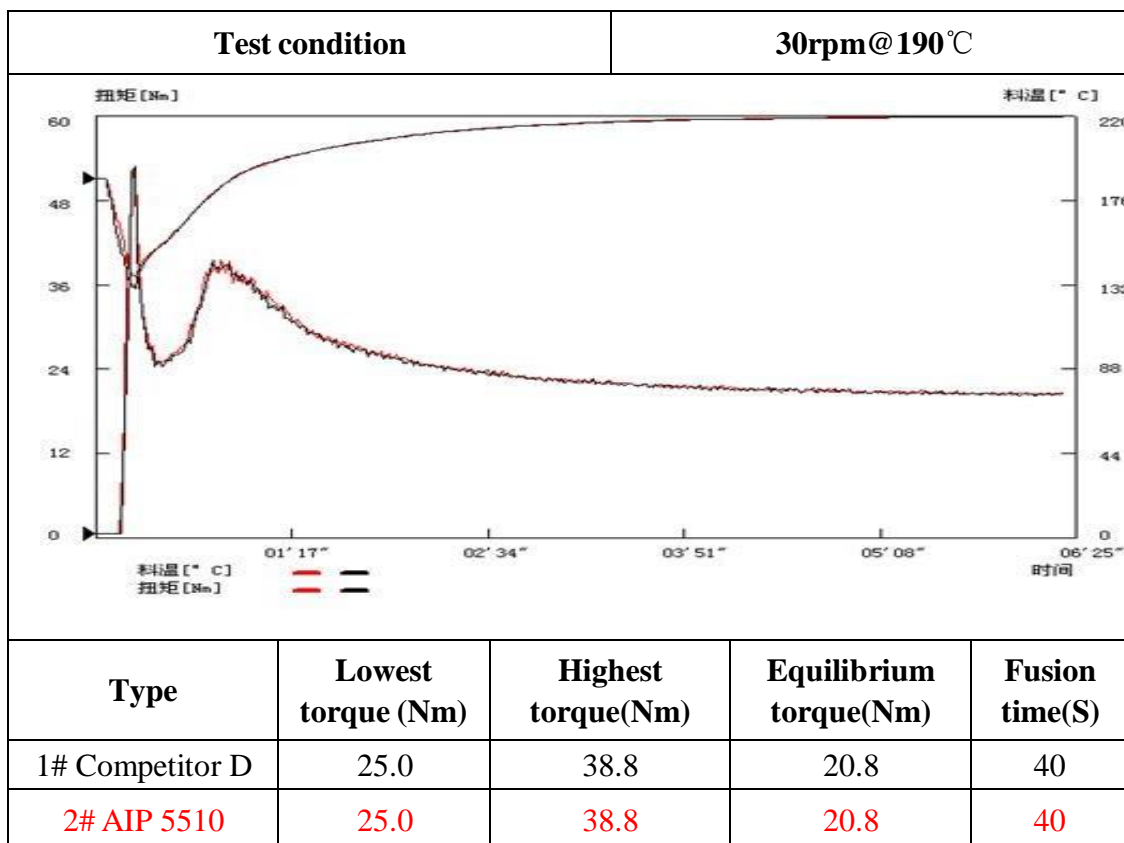
Volume: 5L

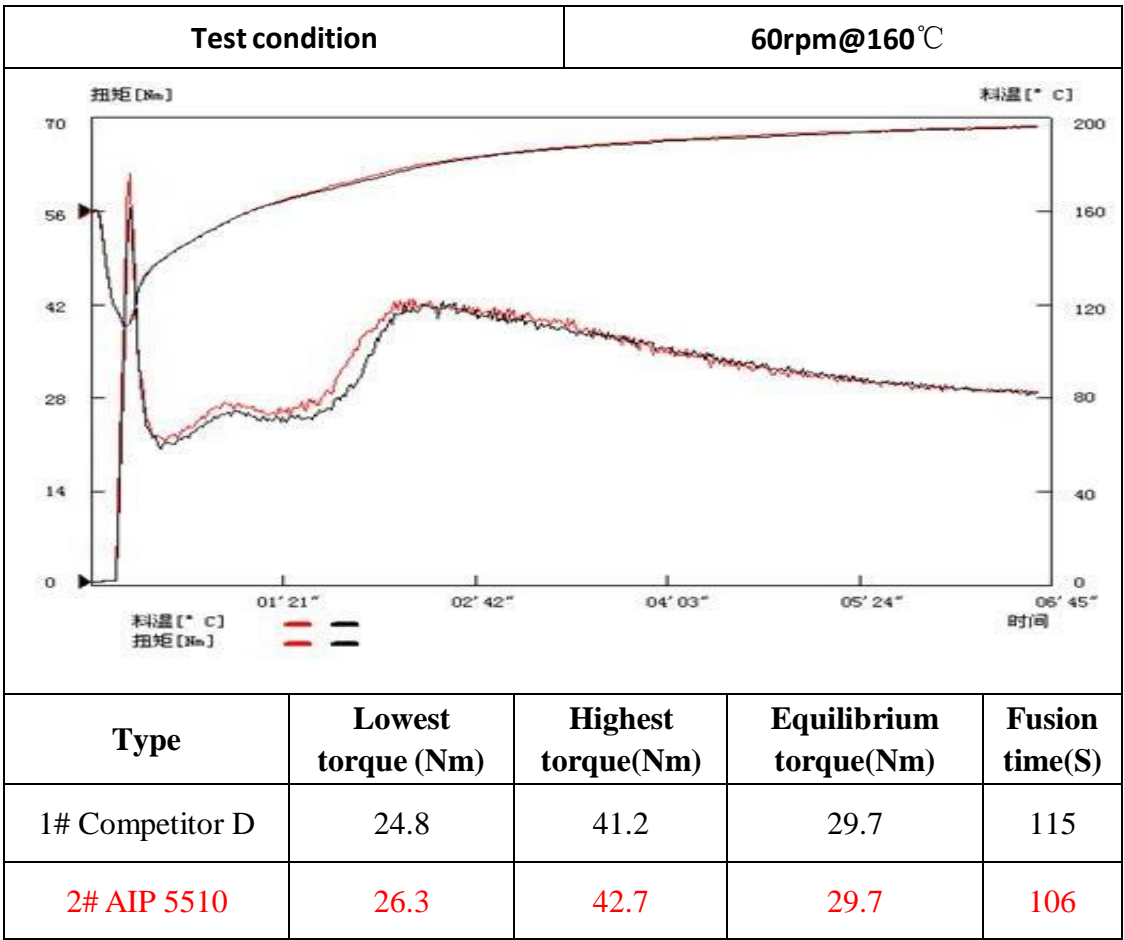
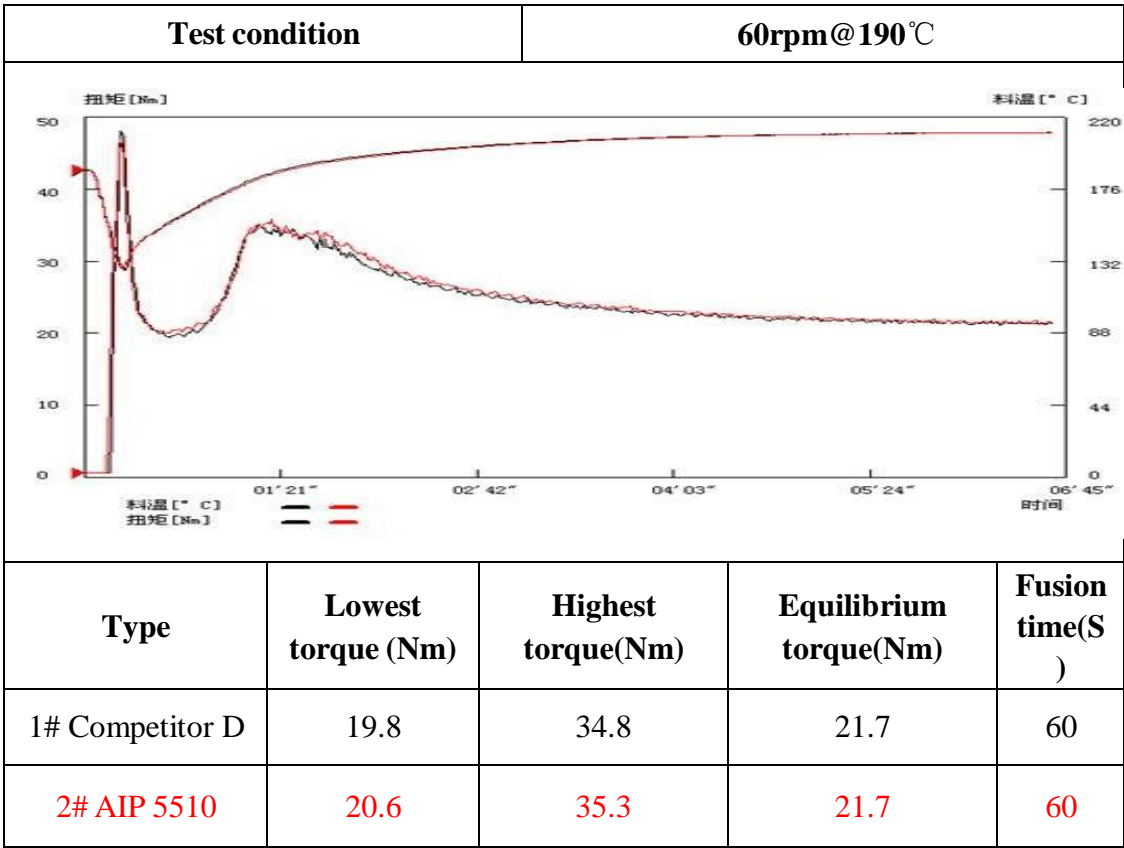
Ingredients	1#	2#
	Competitor D	AIP 5510
PVC(K-65)	100.00	100.00
Tin stabilizer(16-19% Tin)	1.00	1.00
CaCO ₃ (PCC)	5.00	5.00
TiO ₂ (Rutile)	4.00	4.00
Stearic acid	0.80	0.80
PE wax	0.40	0.40
Competitor D	1.00	--
AIP 5510	--	1.00

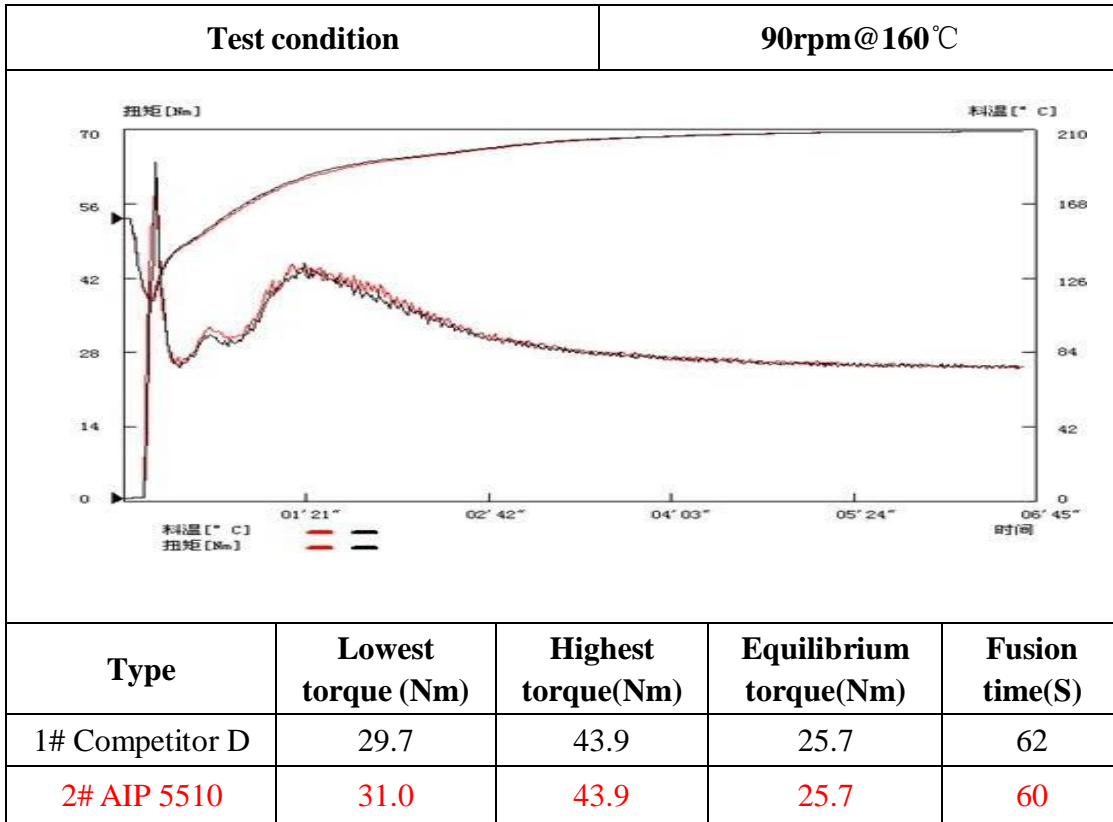
5.2 Fusion property comparison

Test equipment type: RM-200C torque rheometer from Harbin Hapro Electrical technology Co., Ltd

Volume: 60ml







5.3 Transparent property comparison

Type	Transmittance(%)	Haze(%)
Competitor D	90.2±0.4	3.70±0.03
AIP 5510	90.5±0.4	3.43±0.04

Test condition: double-roller mill temperature 196℃ 3min

Test standard: GB/T 2410-2008

Basic formulation for transparent property tests: (unit: PHR)

PVC(K-57) 100 , Tin stabilizer 1.20 , Lubricant G-60 1.00 ,
Lubricant W-165 0.50 , Processing aid 1.00 .

5.4 Gloss comparison

Test condition: 45°

Type	Gloss of PVC extruded sheet
1# Control	11.3±0.3
2#AIP 5510	34.5±0.4
3# Competitor “D”	34.7±0.3

5.5 Optical property

Transparency comparison (Test standard: ASTM-D1003-00)

Specification Type	Transmittance (%)	Haze (%)
1# Control	90.2±0.4	3.24±0.03
2# AIP 5510	89.1±0.3	5.95±0.02
3# Competitor "D"	89.3±0.3	5.80±0.03

Part 6: Packing, transportation and storage

20kg/25 kg bag, 250kg/500 kg super sack

This material is non-dangerous goods for land, air and marine transportation.

Material should be kept from flames, hot pipes, heaters or other sources of heat. Adequate precautions should be taken to keep all dust levels below values that are hazardous to health and safety. The recommended maximum storage temperature for this material is 45 °C.

Part 7: Safe Handling

Please consult the MSDS before handling for additional information concerning personal protective equipment, Safety, Health and Environmental information, and always exercise the utmost care in handling.