



BIO-DEHCH



INTRODUCTION



- ✓ **BIO-DEHCH** is a bio-based benzene-free, environmental friendly main plasticizer, quite compatible with PVC resin.
- ✓ Compared with DOTP, **BIO-DEHCH** with higher plasticizing efficiency (softness and hardness), can shorten plasticizing time, and bring the end-products better transparency. In certain application, it can completely replace DOTP at lower dosage as well.
- ✓ Mechanical properties: **BIO-DEHCH** is at the same level of DOTP, so it can completely replace DOTP in specific recipe, and it is more cost-effective than DOTP.
- ✓ Application fields: **BIO-DEHCH** can be used in various PVC products such as PVC elastic flooring, calendered film and light box cloth.



SPECIFICATIONS



ITEMS	STANDARD	RESULT
COLOR(pt-co rimetric)	50MAX	13
DENSITY(20g/cm ³)	1.014-1.054	1.0407
ACID VALUE(mgKOH/100g)	0.3MAX	0.09
MOISTURE	0.2%MAX	0.07
PHTHALATES	0.01MAX	ND
Rotational Viscosity, 25°C, mPa.s	65-95	78.6
FLASH POINT(°C)	200MIN	204

PVC Sample Making



Test Formula

Recipe	PHR	PHR	PHR	PHR	PHR	PHR
PVC (SG65)	100	100	100	100	100	100
Plasticizer	80	60	50	40	30	60
Stabilizer	1	1	1	1	1	1
Lubricant	/	/	/	/	/	1
CaCO ₃	/	/	/	/	/	50

Sample preparation process



混料

Blending



混炼

Milling



硫化

Vulcanization



裁片

Cutting

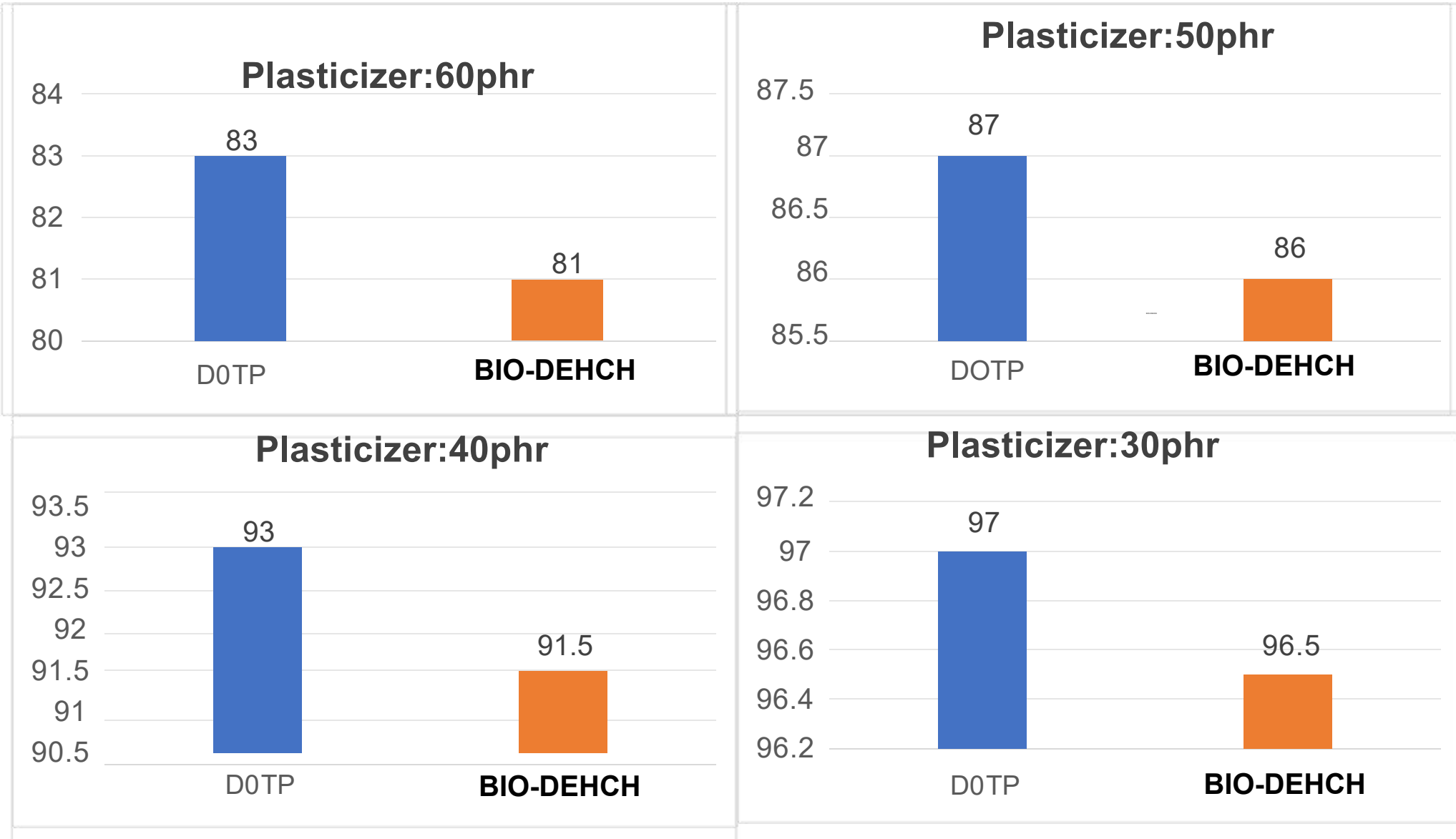


性能测试

Performance Testing



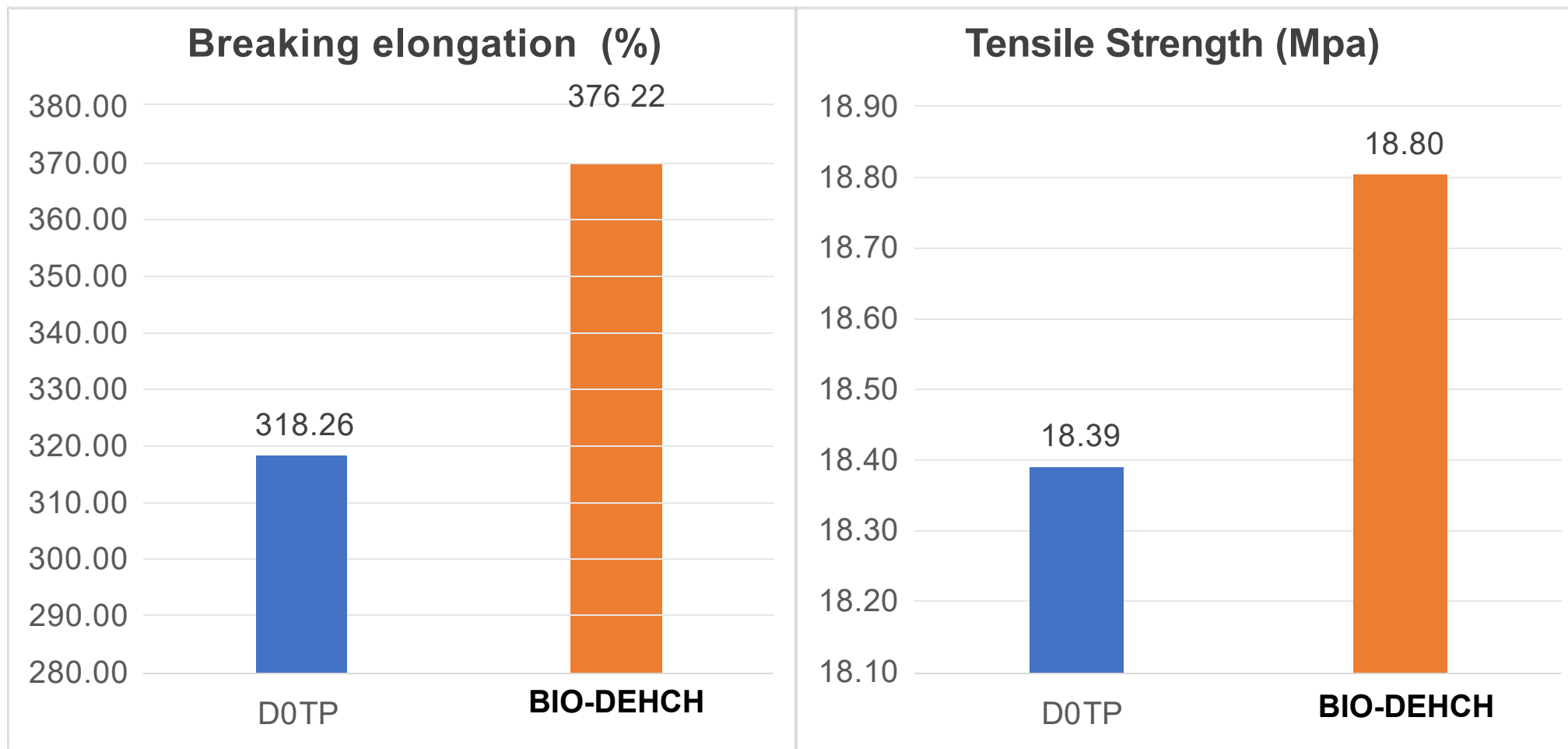
Plasticizing Evaluation (Shore hardness)



General Formula: PVC 100, Plasticizer 60/50/40/30 phr, Stabilizer 1 phr, The test temperature is 23°C, the data is for reference only.



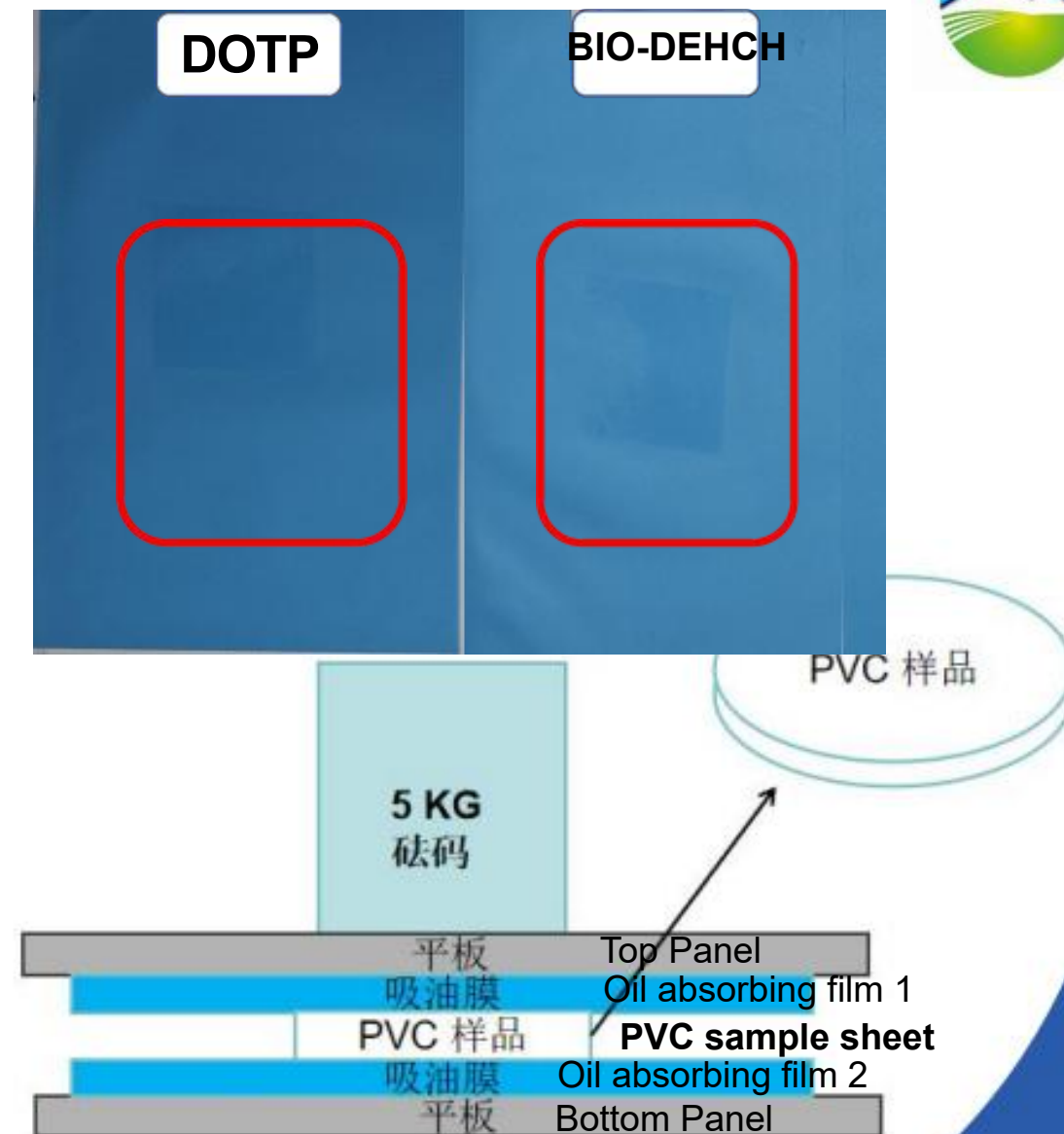
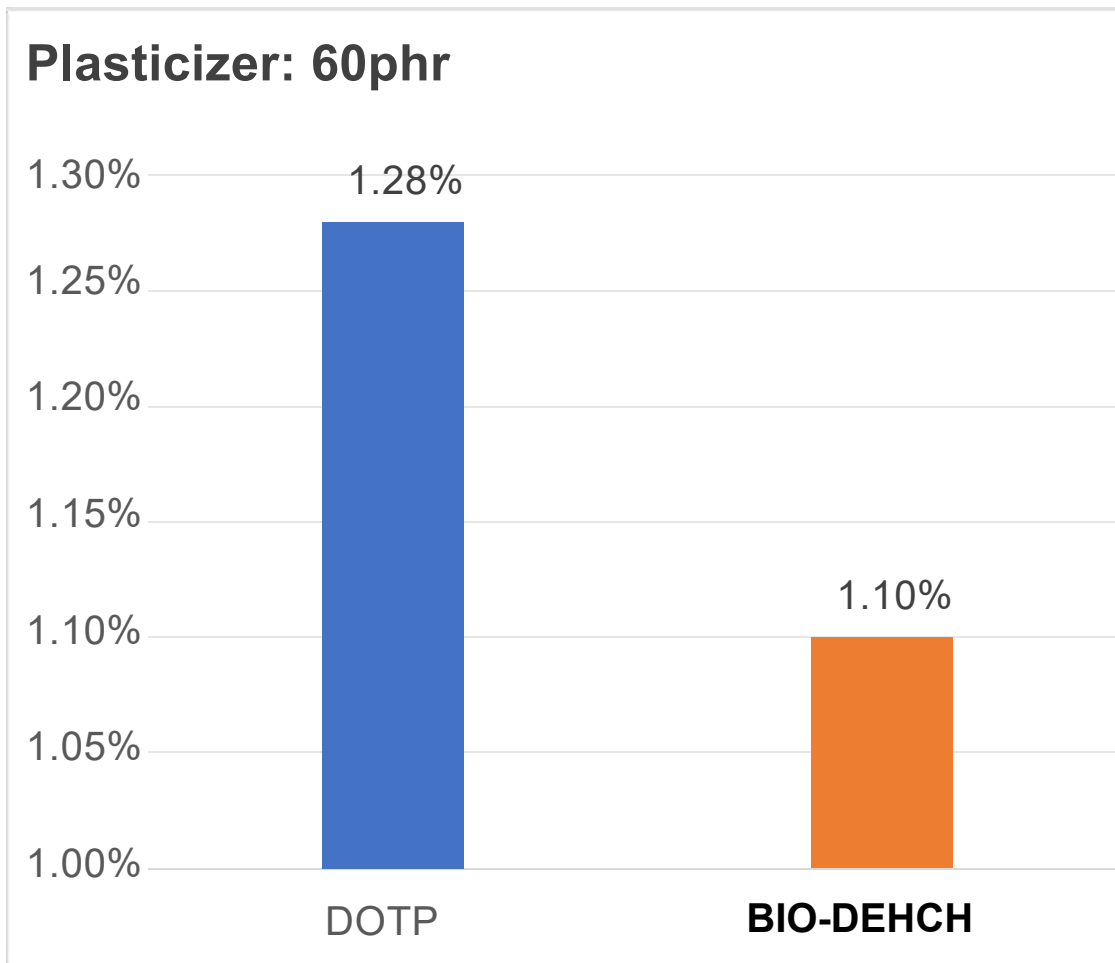
Mechanical Evaluation (tensile at break)



General Formula: PVC 100, Plasticizer 60phr, Stabilizer 1, Test Temperature 23°C, the data is for reference only.



Compatibility Evaluation (precipitation rate)



Compare the weight difference before and after test

5kg Weight, Temperature 80 °C, 24h, Hot pressure precipitation test. Data is for reference only.



Thermal aging evaluation (Static thermal aging)



0 min

15min

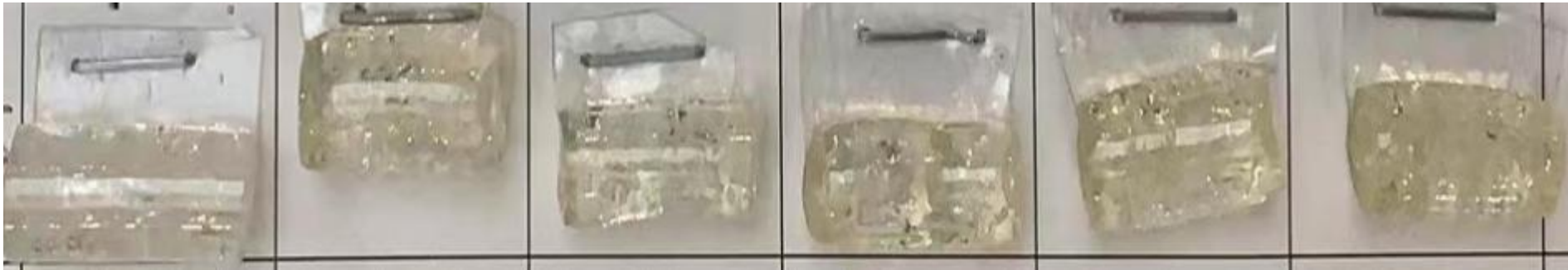
20min

25min

30min

35 min

DOTP



0 min

15min

20min

25min

30min

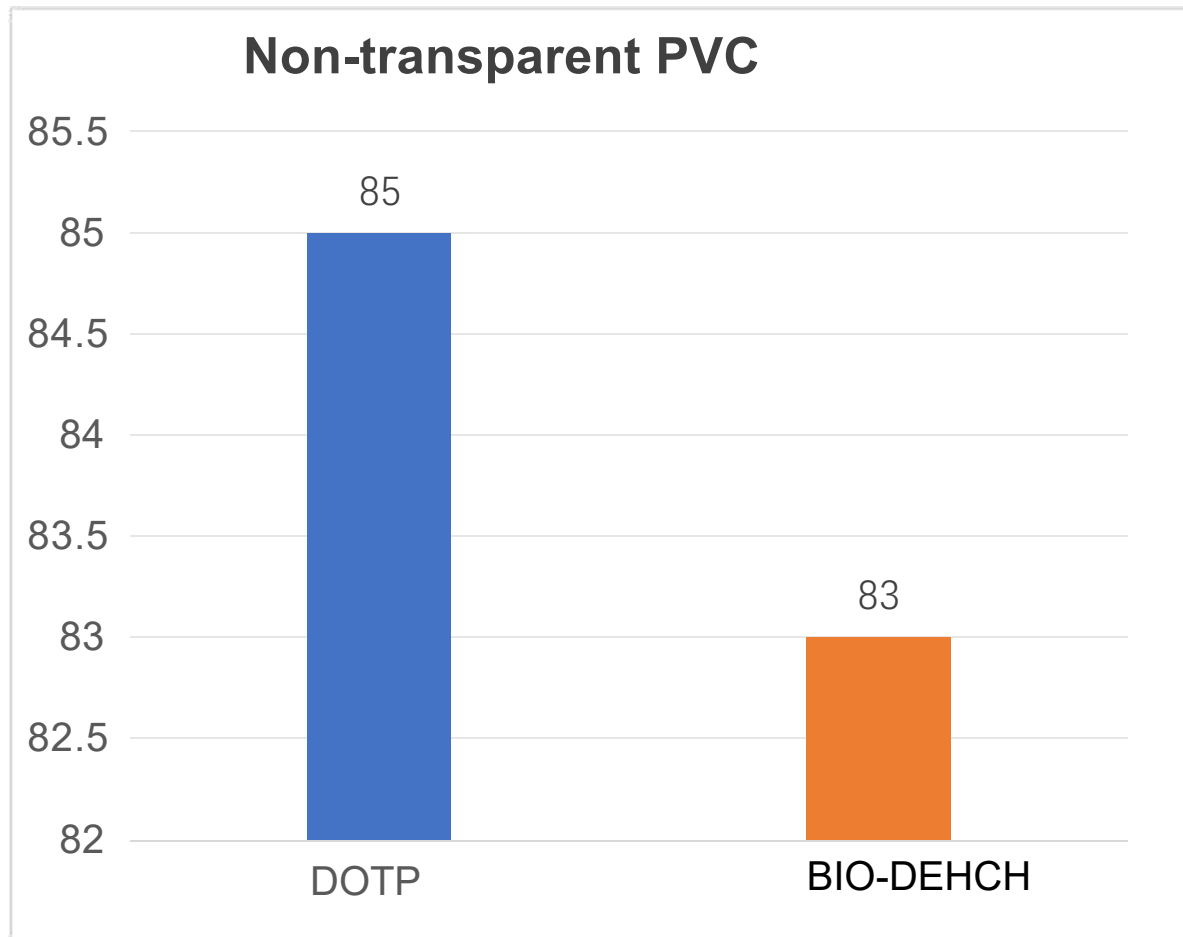
35 min

BIO-DEHCH

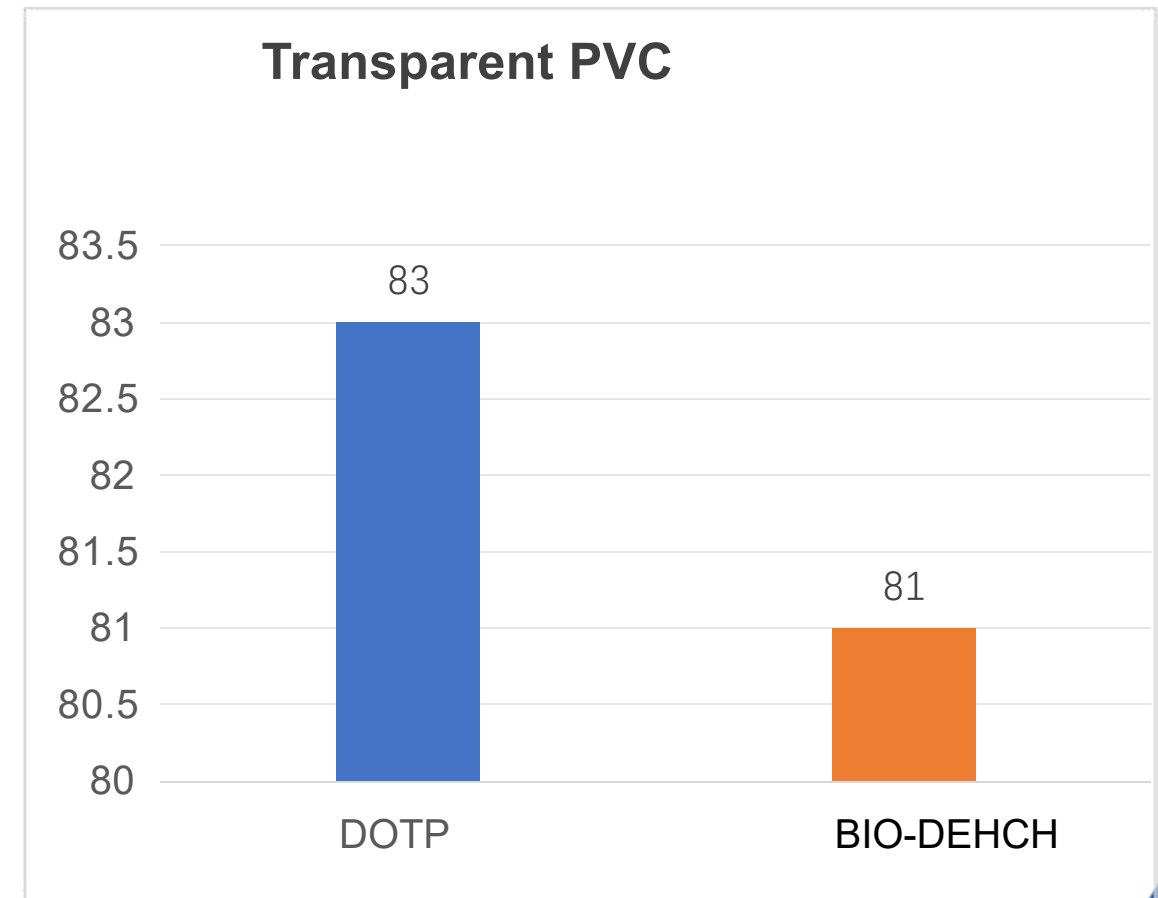


Static thermal aging test (Temperature: 180 °C) .
General Formula: PVC 100, Plasticizer 60 phr , Stabilizer 1 phr.
Data is for reference only.

Plasticizing Performance in **Non-transparent** and **Transparent** PVC products (Shore hardness)



General Formula 1: PVC 100, Plasticizer - 60phr, Stabilizer -1phr, lubricant – 1phr, CaCO₃ - 50 phr.

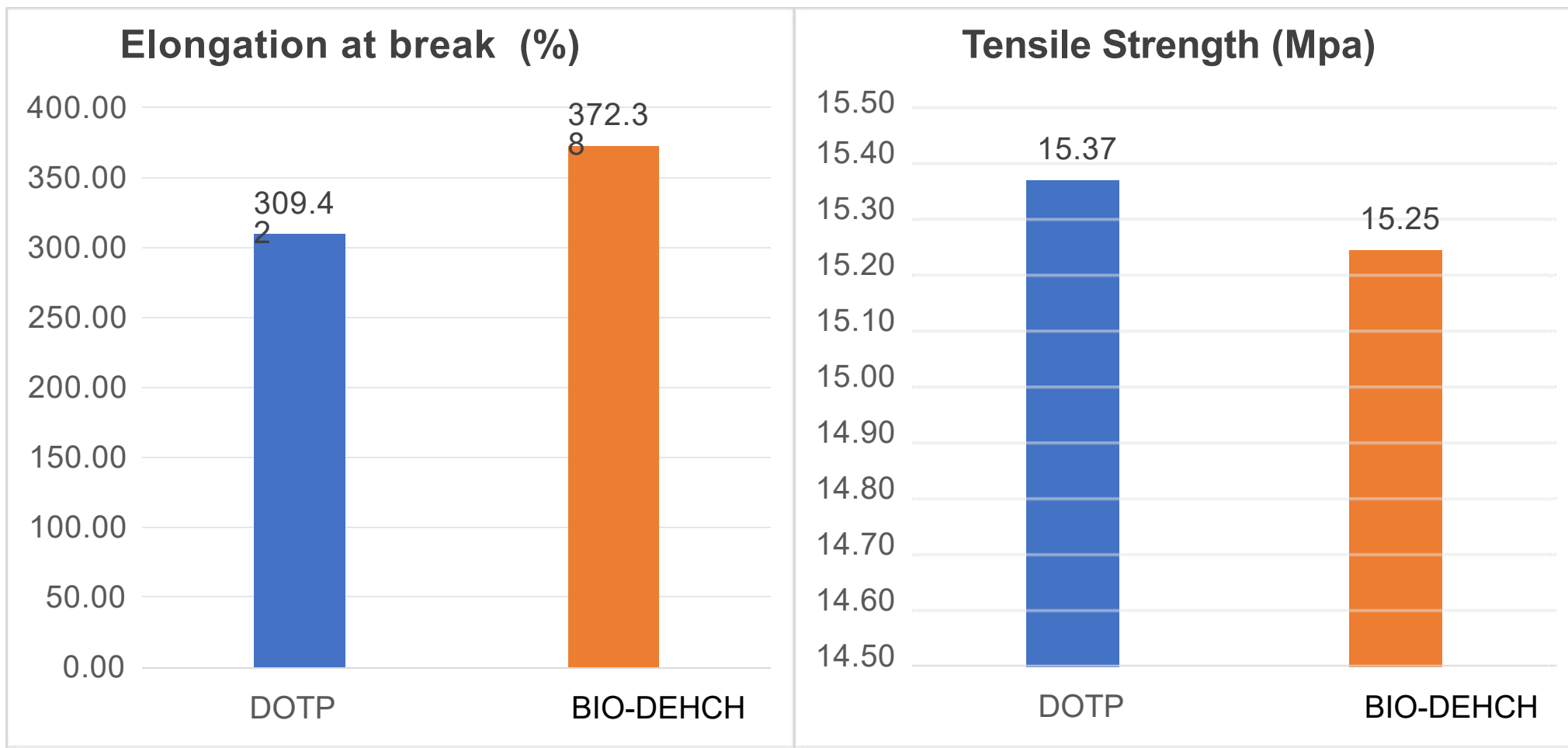


General Formula 2: PVC 100, Plasticizer - 60phr, Stabilizer -1phr, lubricant – 1phr.

Test temperature 23°C, the data is for reference only.



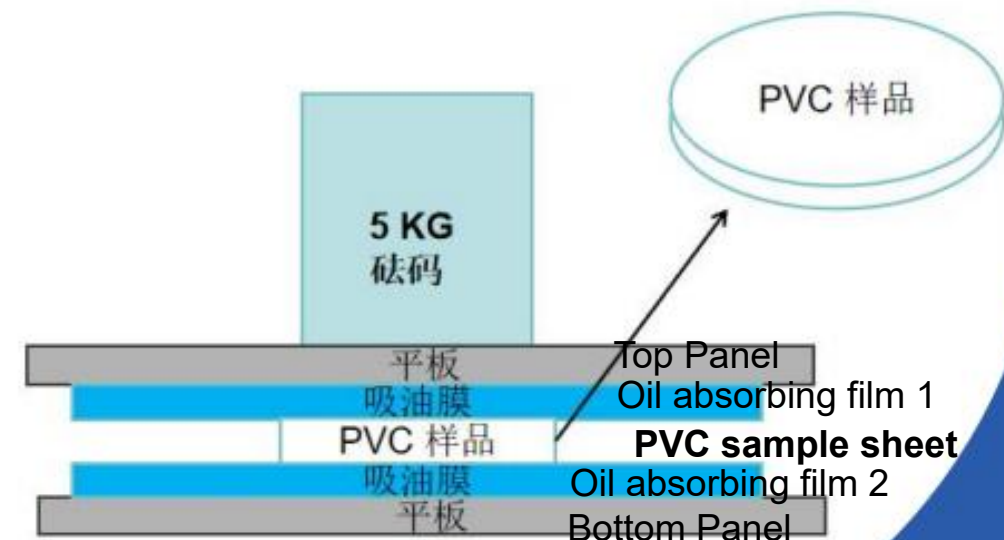
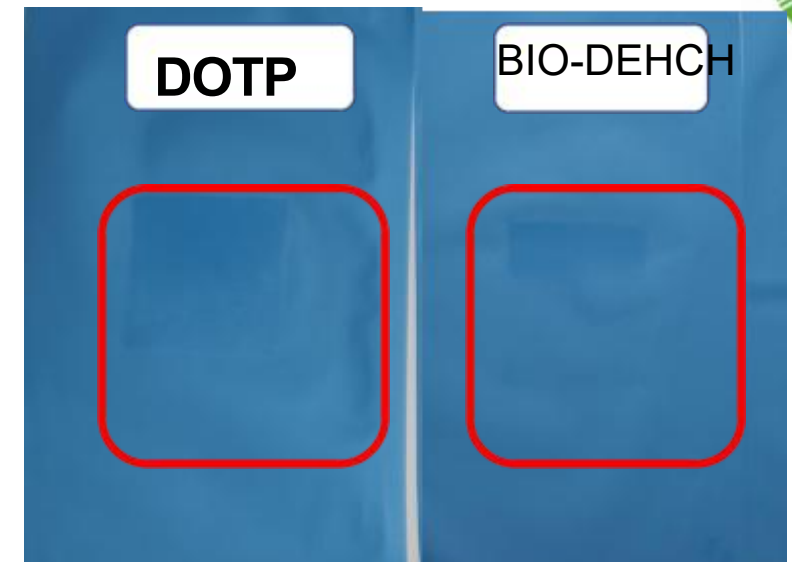
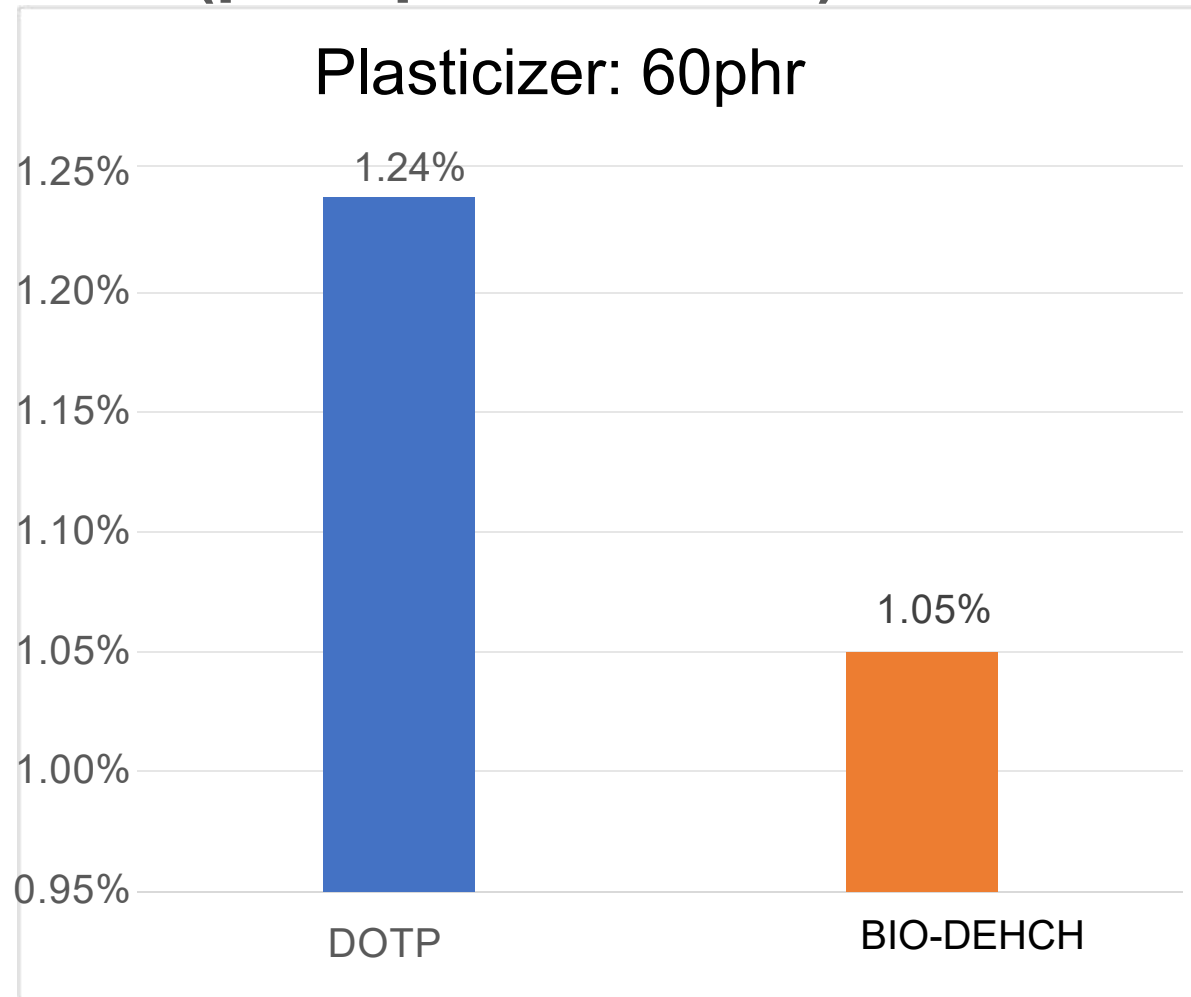
Mechanical evaluation in Non-transparent PVC (tensile at break)



General Formula 1: PVC 100, Plasticizer - 60phr , Stabilizer -1phr, lubricant – 1phr, CaCO₃ - 50 phr.

Test temperature 23°C, the data is for reference only.

Compatibility evaluation in non-transparent PVC (precipitation rate)



Compare the weight difference before and after test

5kg Weight, Temperature 80 °C, 24h, Hot pressure precipitation test. Data is for reference only.



Thermal aging evaluation in Non-transparent PVC (static thermal aging)



DOTP

0 min

15min

20min

25min

30min

35 min

40 min



0 min

15min

20min

25min

30min

35 min

40 min

BIO-DEHCH



Static thermal aging test at 180 °C

General formula: PVC 100, Plasticizer - 60phr , Stabilizer -1phr, lubricant – 1phr, CaCO₃ - 50 phr.



BIO-DEHCH(J388) V.S. DOTP



Properties	BIO-DEHCH	DOTP
Biobased content	60	0
Plasticizing Efficiency	1.02	1.05
Mechanical properties※	5	4.5
Eco-friendly level※	5	4
Precipitation resistance※	4.2	4.5
Overall cost-effectiveness※	5	4

※(Excellent) 5 > 4 > 3 > 2 > 1 (Weak)