

Afera Technical Seminar

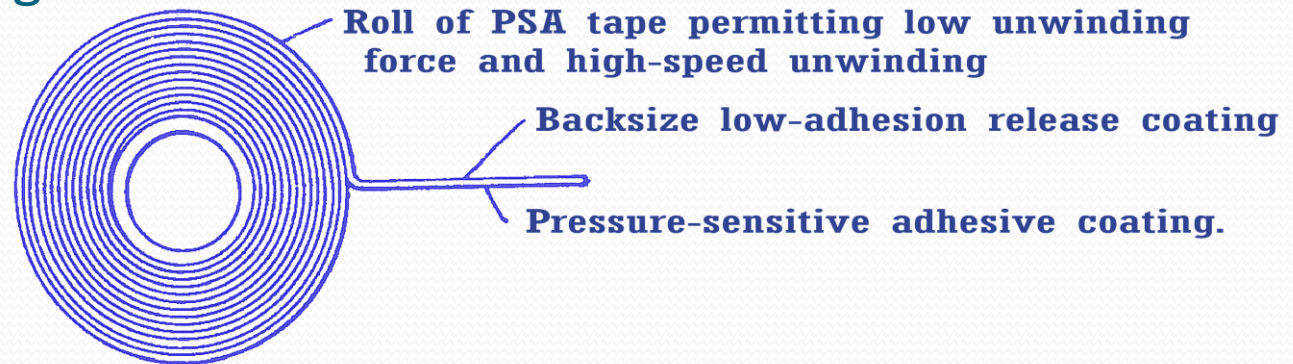
13 - 15 April 2015

Ichemco Release KB100 A: The Clear Solution

WHY NON-SILICONE RELEASE?

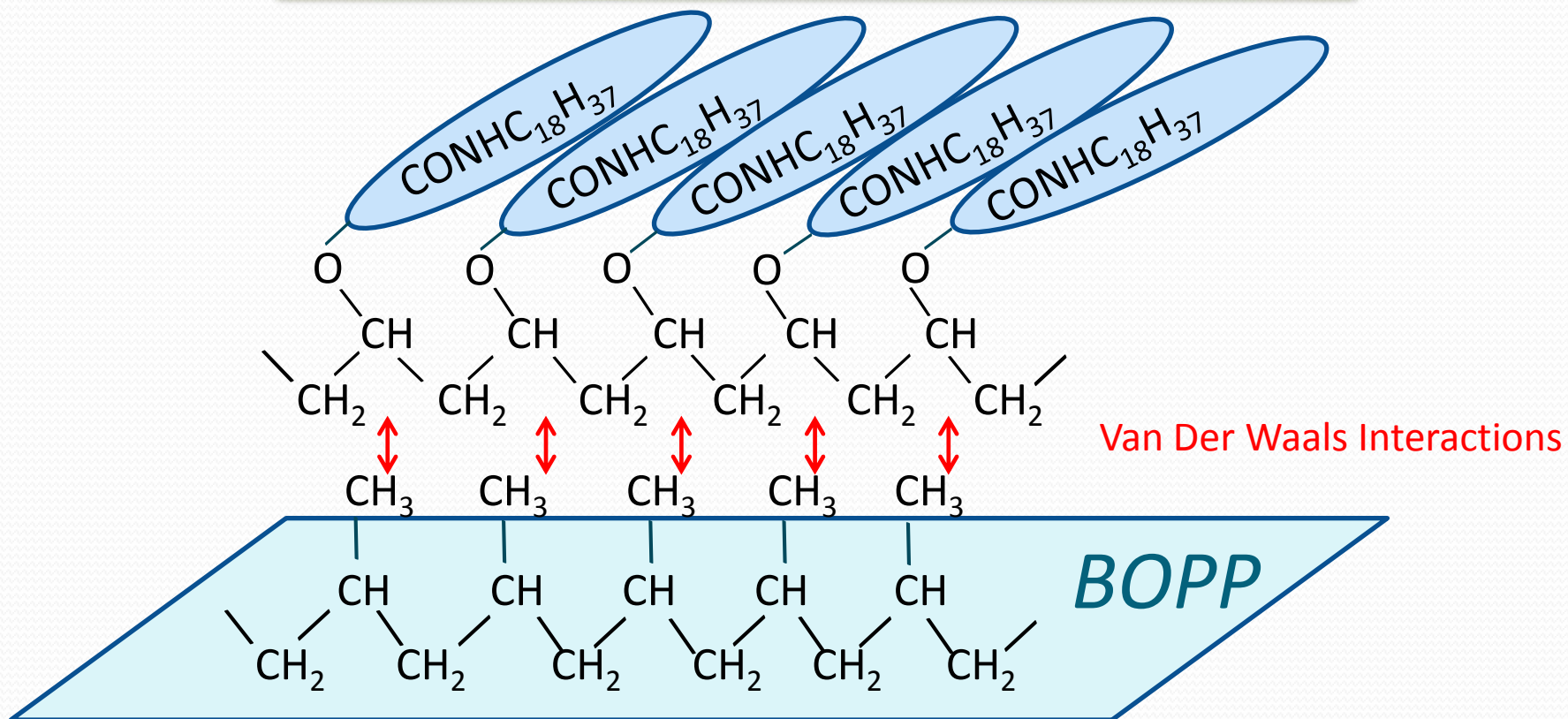
Non-silicone release systems are a cost effective alternative to classical silicone release systems

- High efficiency at extremely low gsm
- No risk of silicon pollution in the adhesive
- Easy handling
- Non-toxic



PVODC: THE IDEAL MATE OF BOPP

ADHESIVE LAYER



CARBAMATE MAIN APPLICATIONS



Packaging Tapes in BOPP

- With Hot Melt, Acrylic and Natural Rubber solvent-borne PSA's



Polyethylene Protective Films

- With natural rubber and acrylic solvent-borne PSA's (when the back side has been Corona treated for printing)



Medical Tapes



Printable Release Coats

- For direct printing on release coated materials. Formulations based on Carbamate and film-forming resins can be used to manufacture easy printable rolls.

THE ROUTE TO GREEN CARBAMATE

1st GENERATION - LEAD CATALYSIS

- Solutions in toluene or xylene – Out of Production

2nd GENERATION – LEAD FREE CATALYSIS

- Powders or solutions in toluene or xylene – PP100, PP25 S

3rd GENERATION

- Powders or solutions in aliphatic solvents – K100 D, K100 ES, KB100 A ...

4th GENERATION

Water Dispersions

- Water – Future Developments

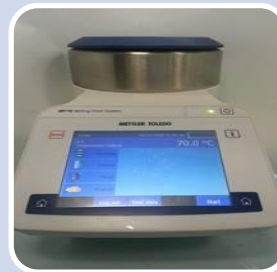
HOW TO ASSESS NEW RELEASE AGENTS?

Release Power

Melting Point

Solubility

Key
performance
tests for
Release Agents



Smoothness
of release
force is the
main feature
of any
Release Agent

Critical
property for
Hot Melt
tapes

Carbamate are
cumbersome
molecules.
They usually
need higher
temperatures
to be dissolved



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First part

Release Power

Coating trials performed on a pilot coater meeting industrial criteria



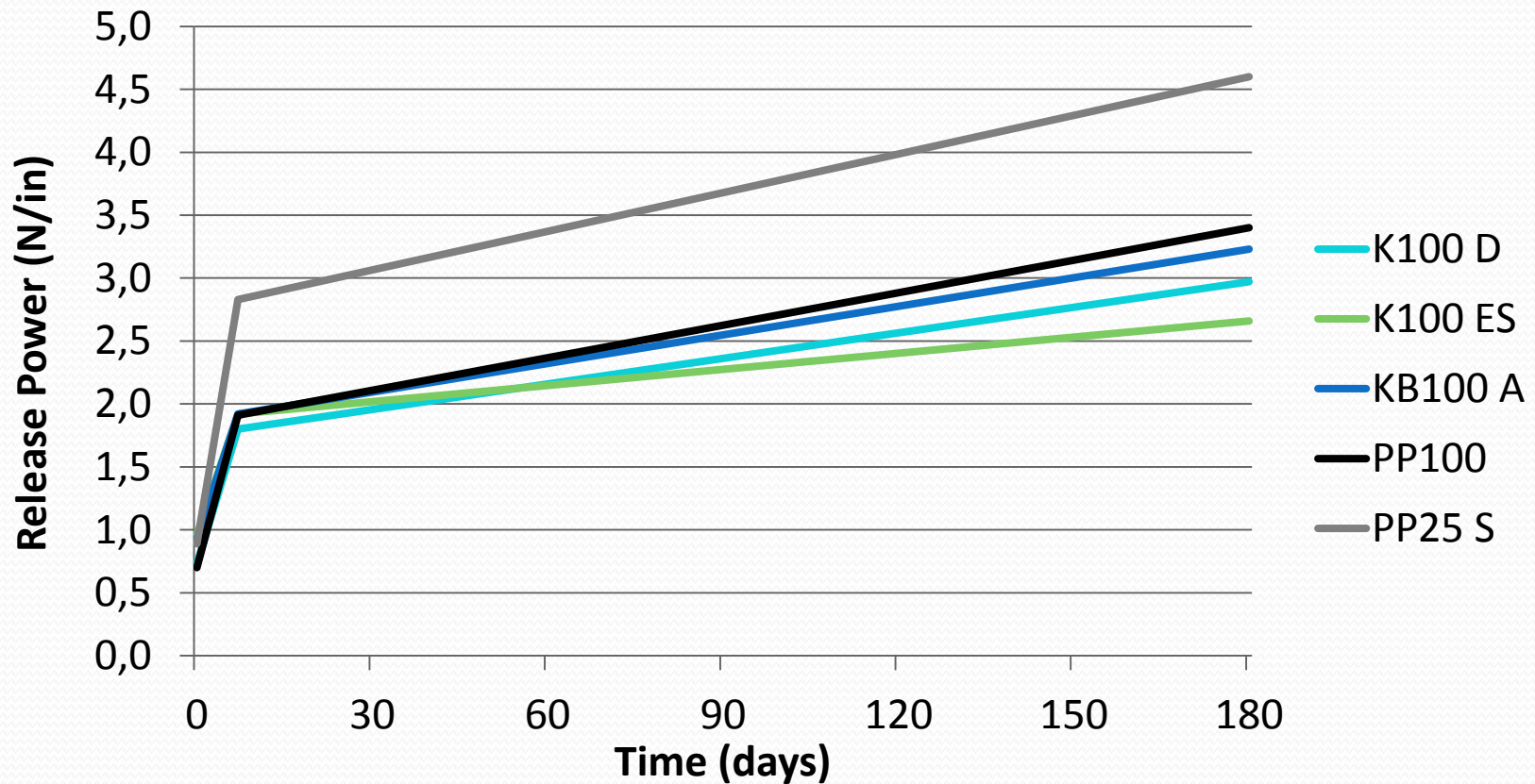
Release power with natural rubber adhesives

	ICHEMCO PRODUCTS	After 5 min. (N/in)*	After 1 week (N/in)*	After 6 months (N/in)*
THIRD GENERATION	K100 D	0.73	1.80	2.97
	K100 ES	0.96	1.92	2.66
	KB100 A	0.93	1.92	3.23
SECOND GENERATION	PP100	0.70	1.91	3.40
	PP25 S	0.89	2.83	4.60

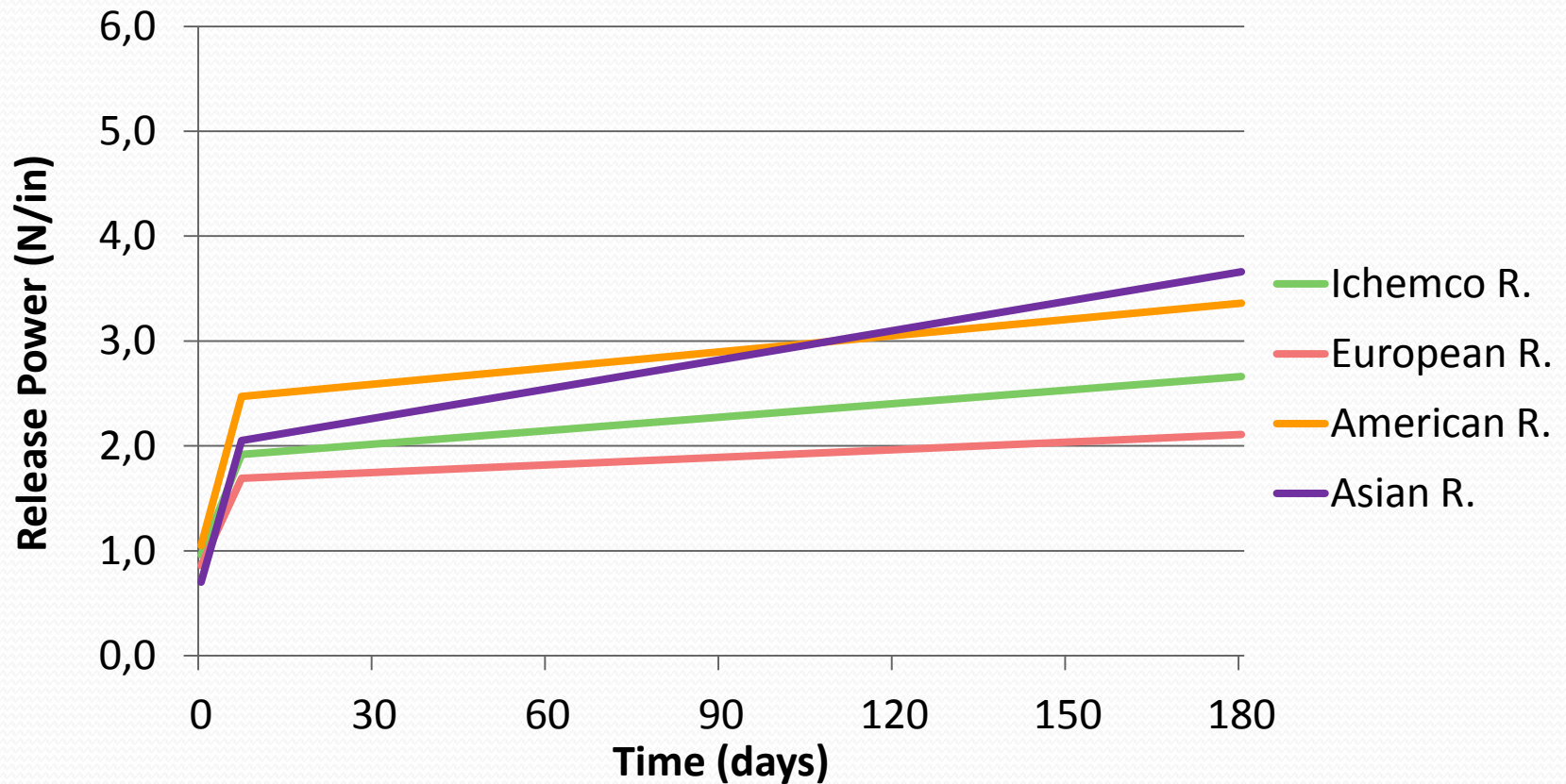
***Test Conditions:**

Speed: 1 m/min; Mayer bar: 0.2; Concentration 1% Toluene Solution;
 Oven Temperature: 70°C - 100°C; Backing: PET 36 µm on corona treated side
 Release: 6.5 g wet/m²
 Tape: TESA 7476

New Generation Products achieve excellent Release performance for NR



New Generation Products are in line with market Benchmark



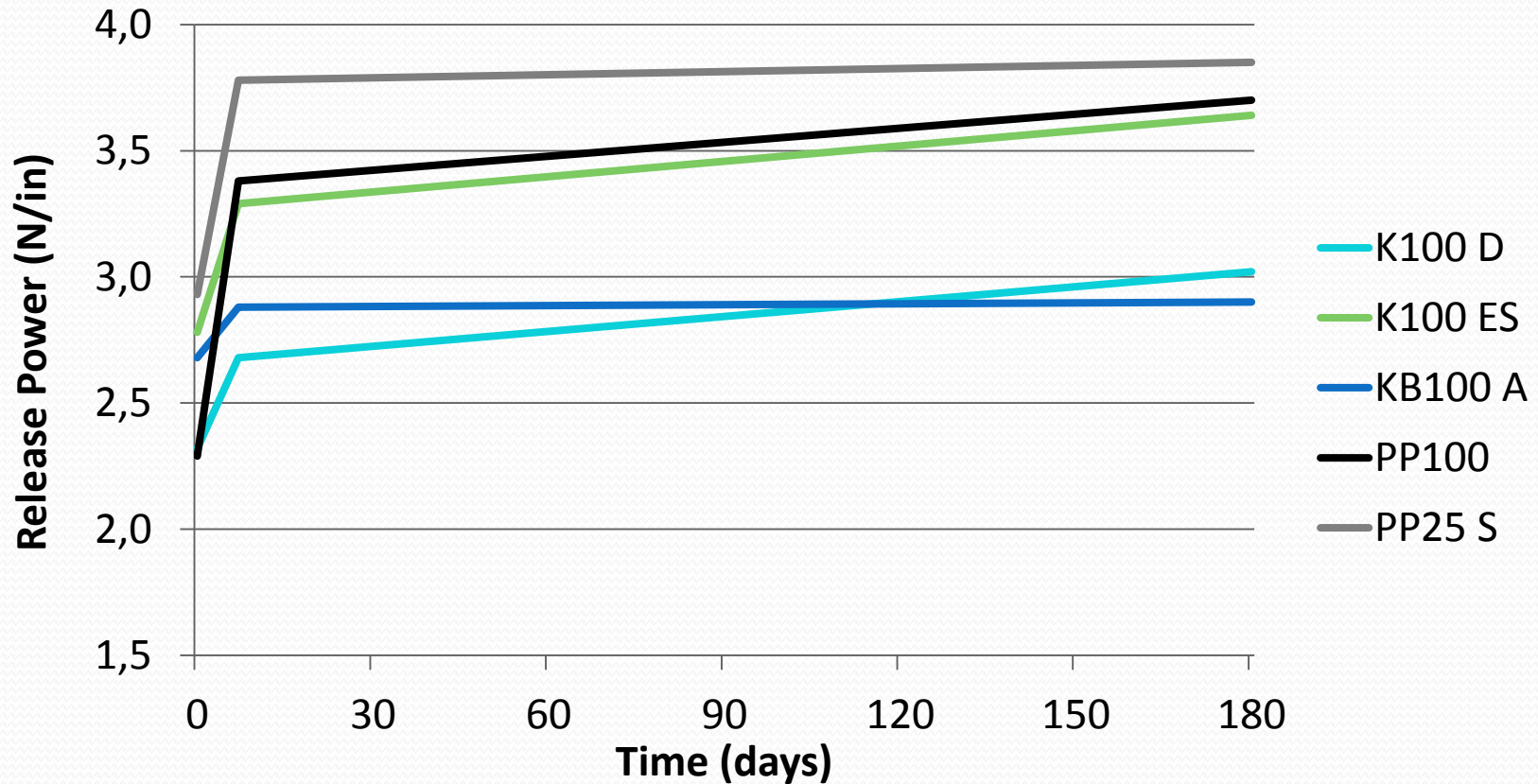
Release power with acrylic solvent-borne adhesives

	ICHEMCO PRODUCTS	After 5 min. (N/in)*	After 1 week (N/in)*	After 6 months (N/in)*
THIRD GENERATION	K100 D	2.32	2.68	3.02
	K100 ES	2.78	3.29	3.64
	KB100 A	2.68	2.88	2.90
SECOND GENERATION	PP100	2.29	3.38	3.70
	PP25 S	2.93	3.78	3.85

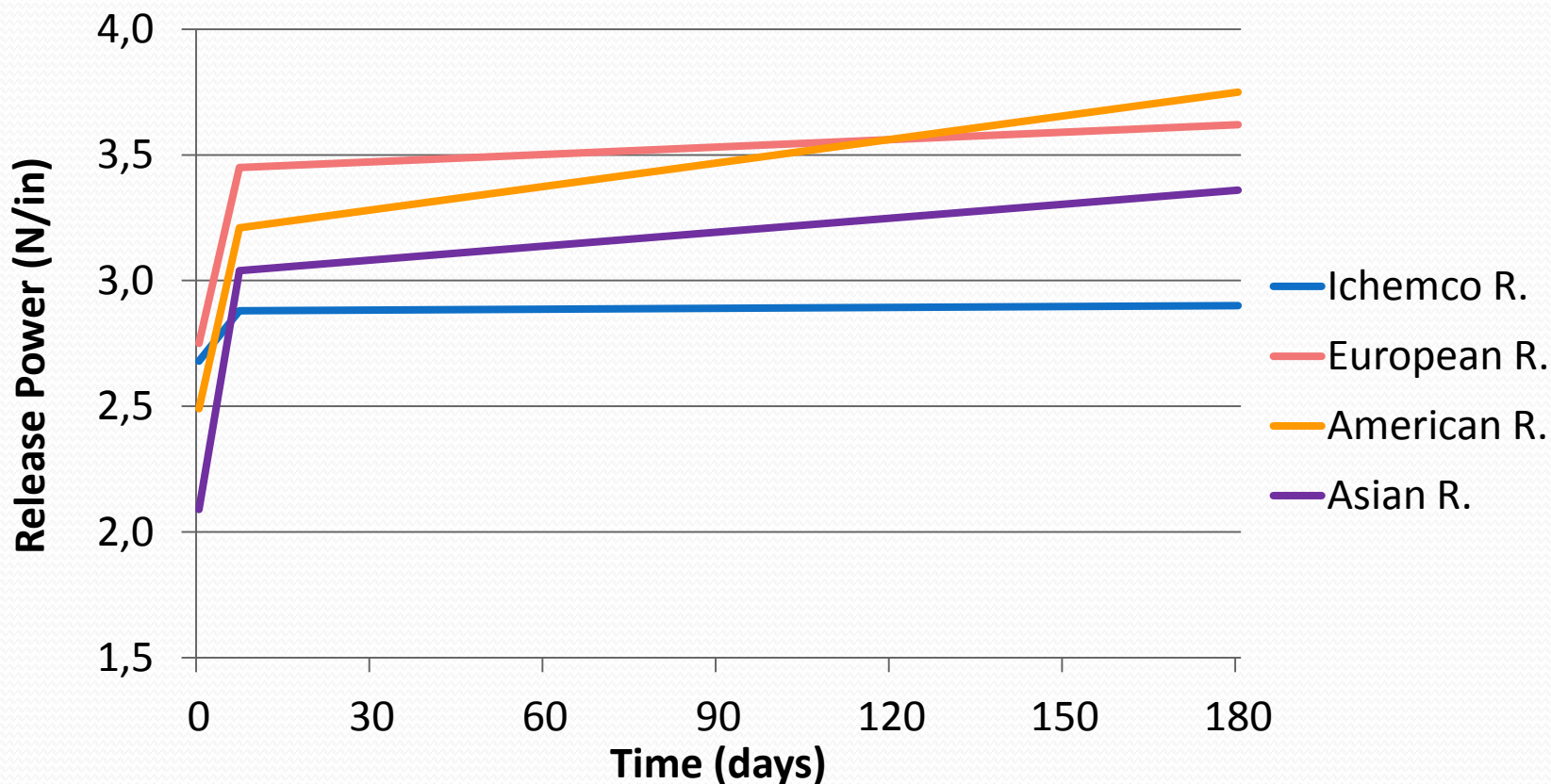
***Test Conditions:**

Speed: 1 m/min; Mayer bar: 0.2; Concentration 1% Toluene Solution;
 Oven Temperature: 70°C - 100°C; Backing: PET 36 µm on corona treated side
 Release: 6.5 g wet/m²
 Tape: h-old PM.099

New Generation Products outperform classical products for Acrylic Adhesives



New Generation Products outperform competitor's products for Acrylics



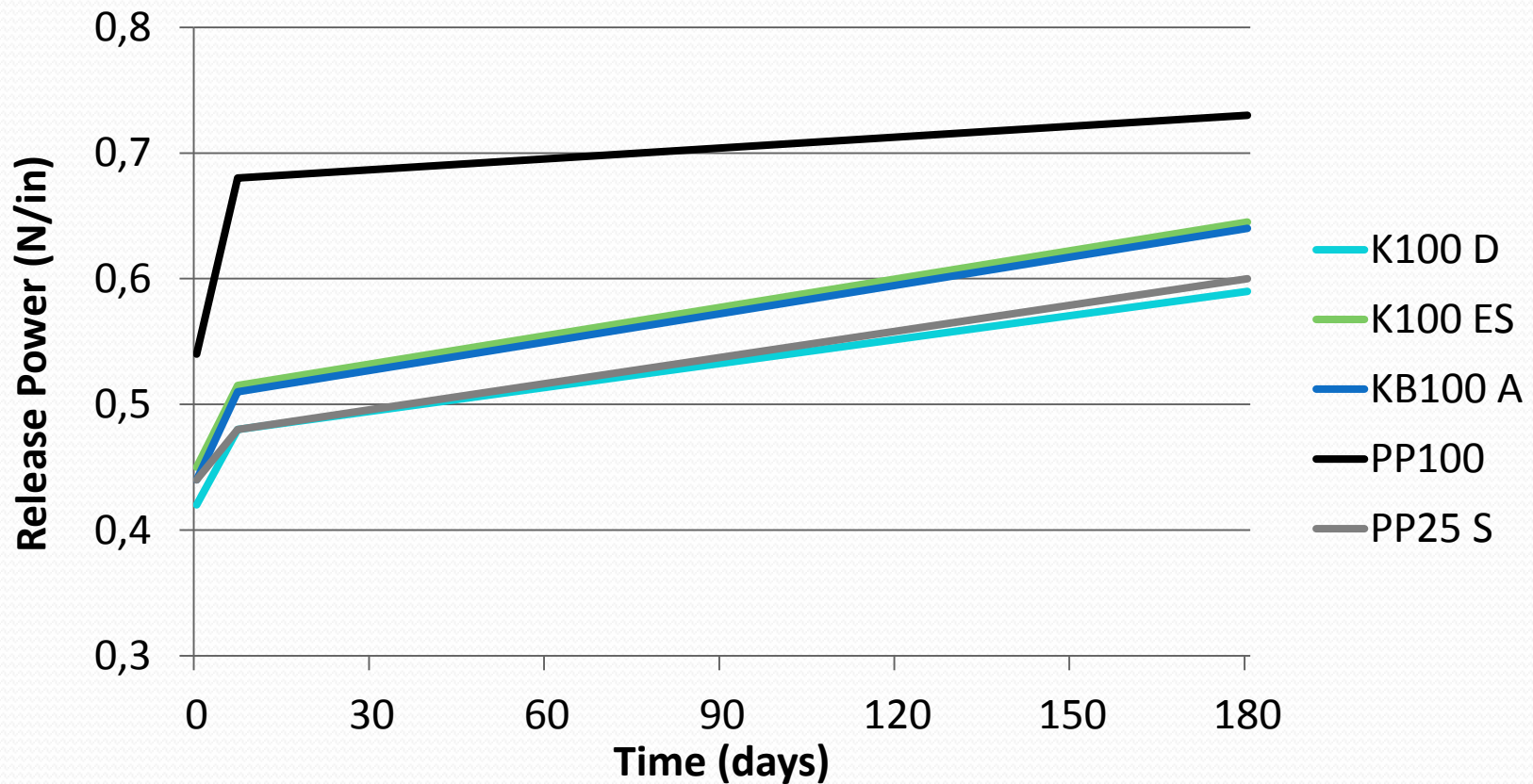
Release power with hot melt adhesives

	ICHEMCO PRODUCTS	After 5 min. (N/in)*	After 1 week (N/in)*	After 6 months (N/in)*
THIRD GENERATION	K100 D	0.37	0.43	0.54
	K100 ES	0.40	0.46	0.59
	KB100 A	0.39	0.46	0.59
SECOND GENERATION	PP100	0.49	0.63	0.68
	PP25 S	0.39	0.43	0.55

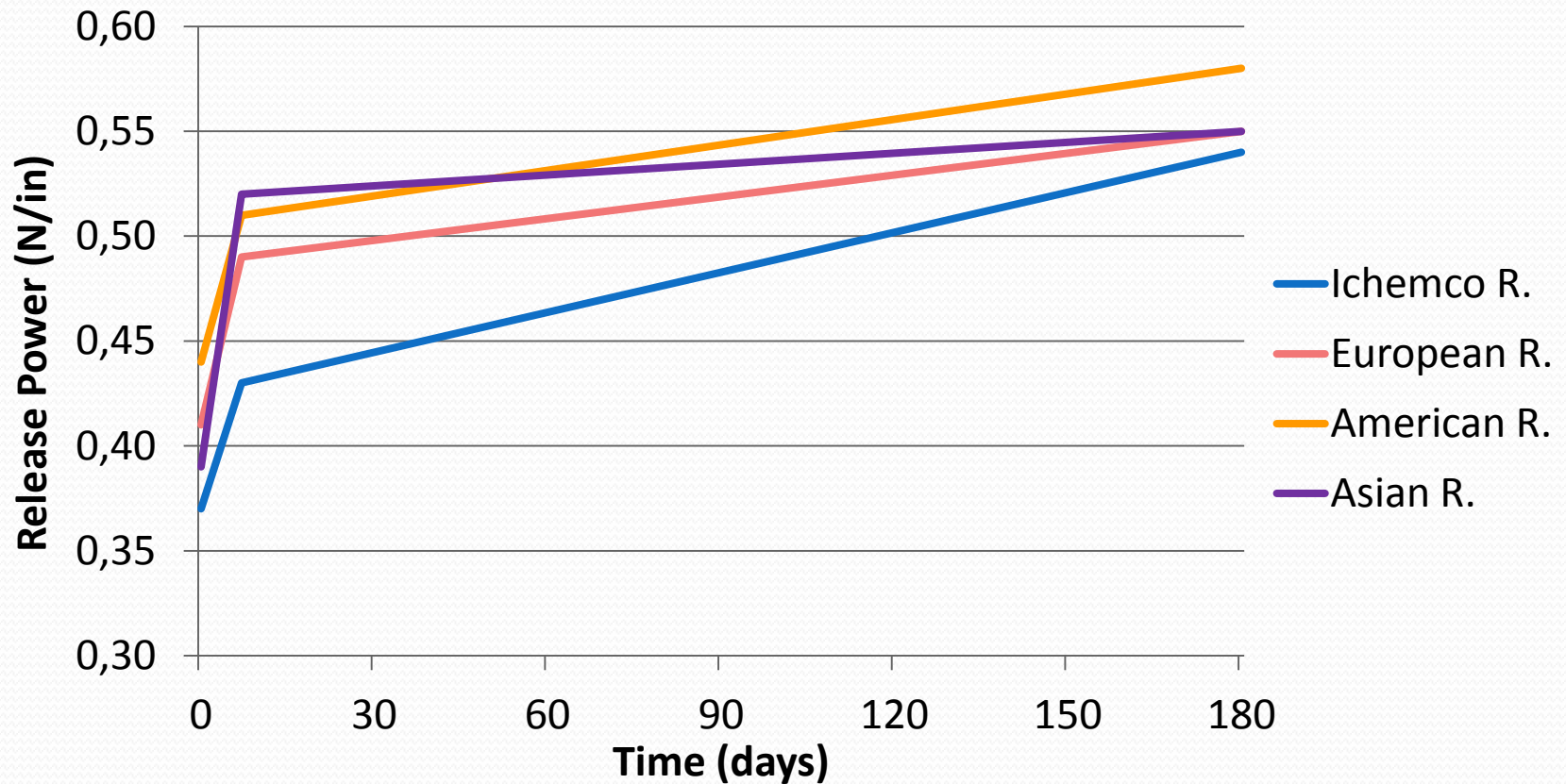
***Test Conditions:**

Speed: 1 m/min; Mayer bar: 0.2; Concentration 1% Toluene Solution;
 Oven Temperature: 70°C - 100°C; Backing: PET 36 µm on corona treated side
 Release: 6.5 g wet/m²
 Tape: SICAD PP31

No significant difference among Ichemco products for HM Adhesives



No significant performance difference for HM adhesive



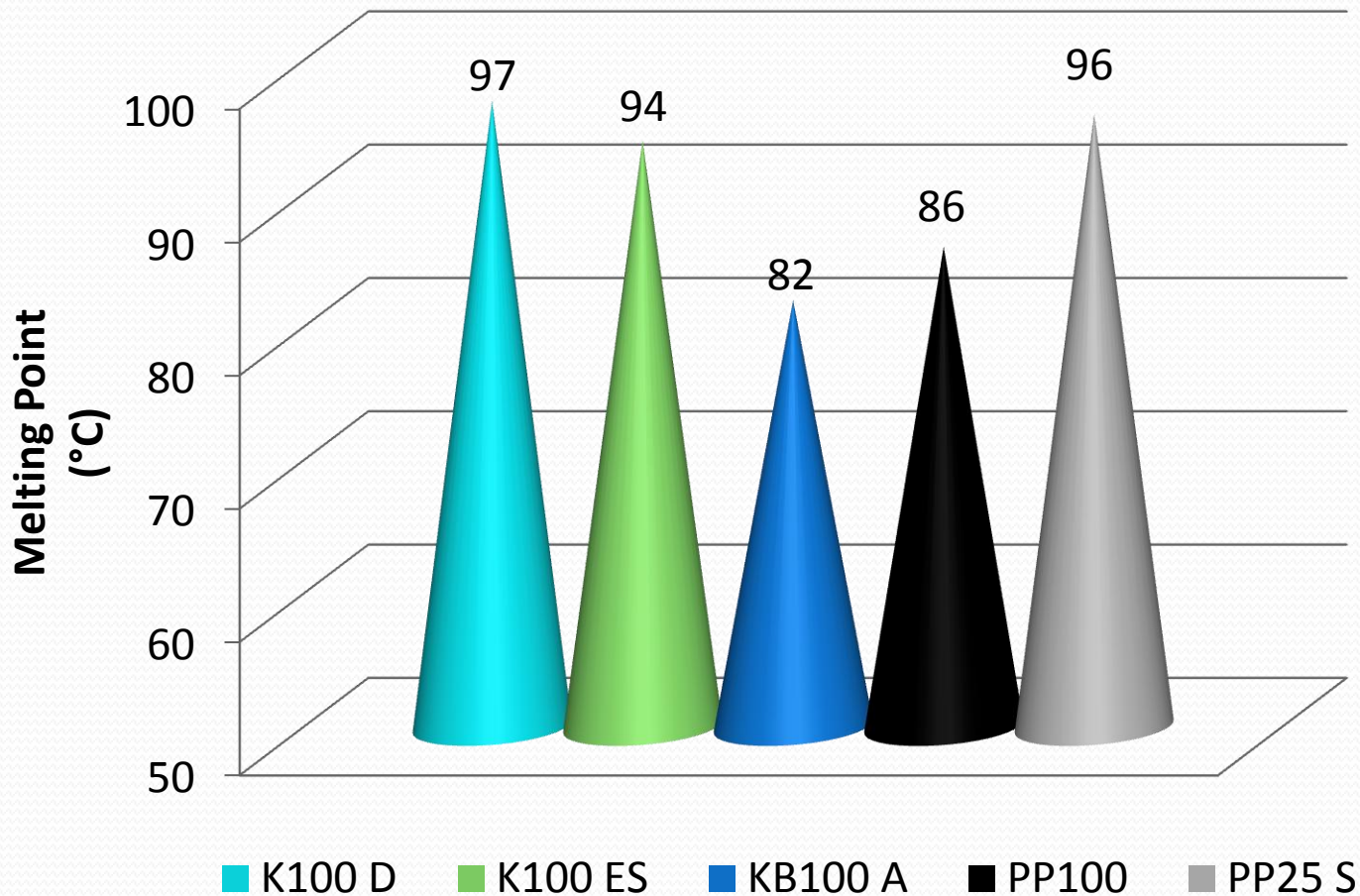
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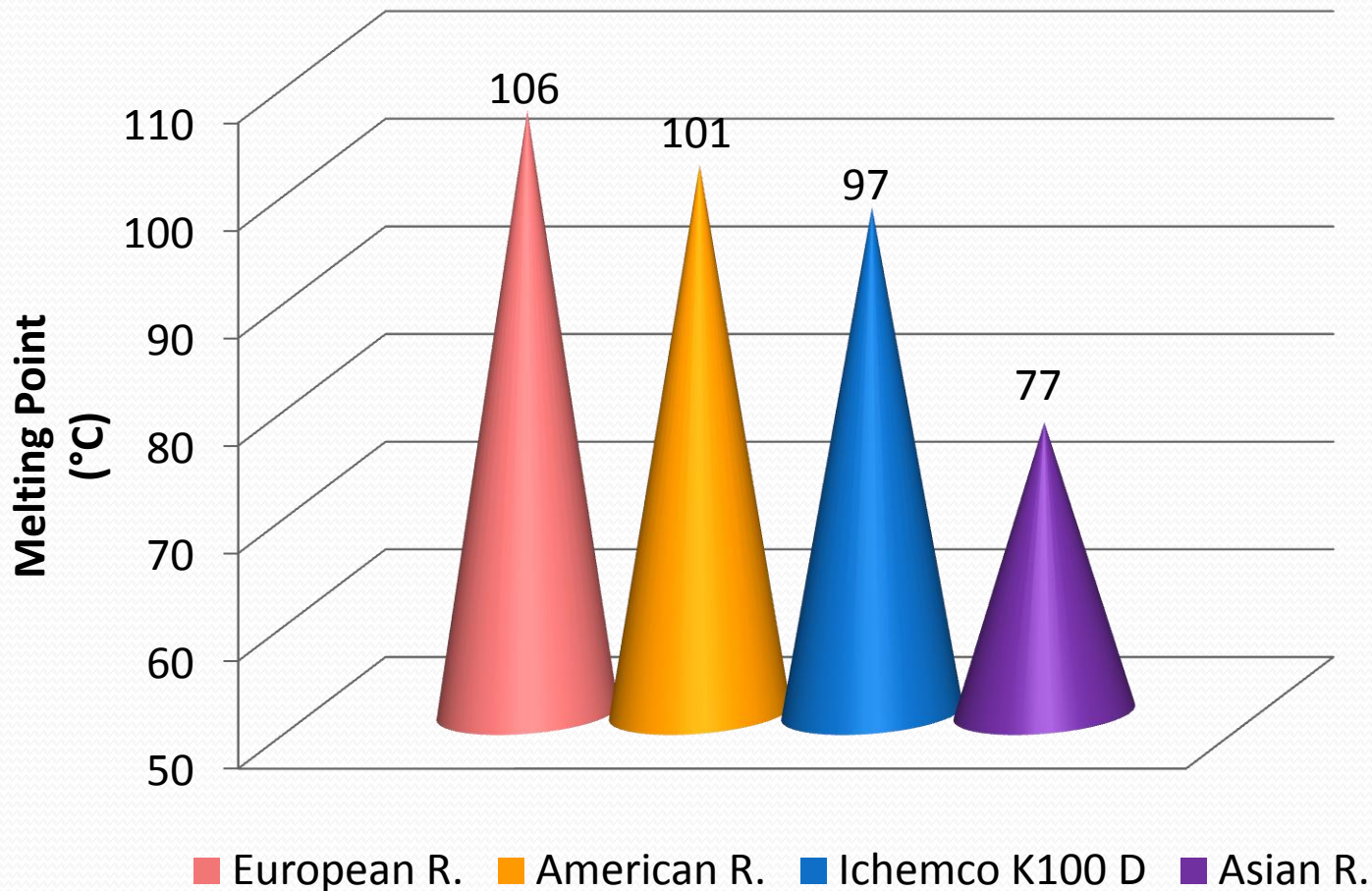
Second part

Melting Point

Melting Point for New Generation Products can be set to meet market's expectations



Melting Point for New Generation Products can be set to meet market's expectations



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Third part

Solubility

New Generation Release Agents achieve superior solubility in aromatic solvents

ICHEMCO
KB100 A



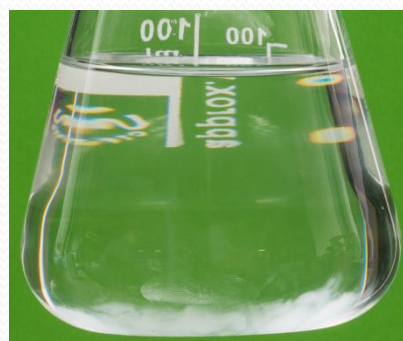
State: LIQUID
Color: CLEAR
Precipitate: ABSENT

European
Release Agent



State: LIQUID
Color: CLEAR
Precipitate: ABSENT

Asian
Release Agent



State: LIQUID
Color: CLEAR
Precipitate: WHITE

American
Release Agent



State: GEL
Color: MILKY
Precipitate: ABSENT

SOLUBILITY in AROMATIC SOLVENTS
5% in Toluene at 23°C

New Generation Release Agents display superior solubility in aliphatic solvents

ICHEMCO
KB100 A



State: LIQUID
Color: CLEAR
Precipitate: ABSENT

European
Release Agent



State: LIQUID
Color: CLEAR
Precipitate: ABSENT

Asian
Release Agent



State: LIQUID
Color: CLEAR
Precipitate: WHITE PARTICLES

American
Release Agent



State: GEL
Color: MILKY
Precipitate: N. D.

SOLUBILITY in ALIPHATIC SOLVENTS
5% in Octane/Isopropyl Alcohol at 23°C

ECO INK PAM RU: brighter printing without aromatic solvents on BOPP tapes

Special inks for printing on waterborne acrylic and easy printable BOPP tapes usually contain aromatic solvents.



Third Generation products open up completely new formulation possibilities. Thanks to their superior solubility in aliphatic solvents it is now possible to manufacture inks without using any aromatic solvent.



Advantages:

- 1) Reduced toxicity
- 2) Outstanding performance, brighter printing results on BOPP tapes

CONCLUSIONS

Third Generation Release
Agents achieve performances
superior to old generation
products

Stay in touch

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