

## New acrylics and polyurethanes for industrial wood finishing

Ramspec 13.10.2016

M.Dimmers



## Overview

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- R&D Targets / unmet needs
- Novel hydroxy functional acrylic
- PU copolymer for clear wood finishes
- PU copolymer for pigmented wood finishes
- PU dispersion for „indestructible“ finishes



## R&D Target / unmet needs

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- Formulations with lower VOC levels
- Improve chemical resistance (especially in pigmented systems)
- Improve process speed -> faster sanding/better blocking resistance
- Isocyanate free x-linking
- Improved stability of wb UV finishes



## Overview

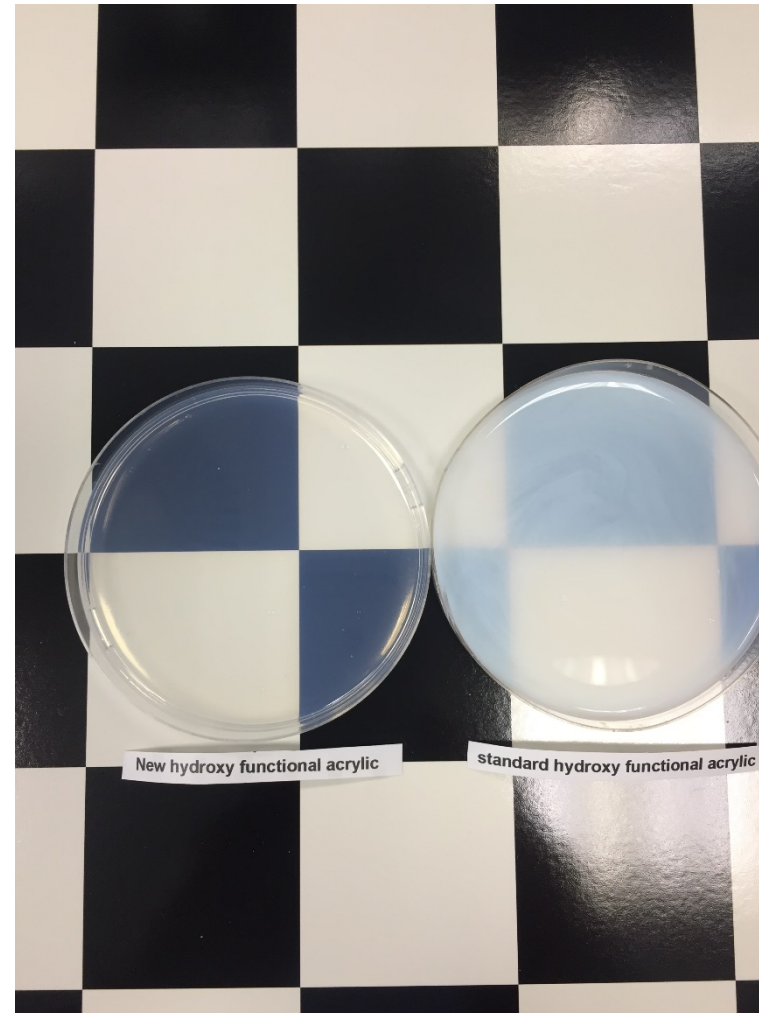
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- **Novel hydroxy functional acrylic**
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- PU dispersion for „indestructible“ finishes

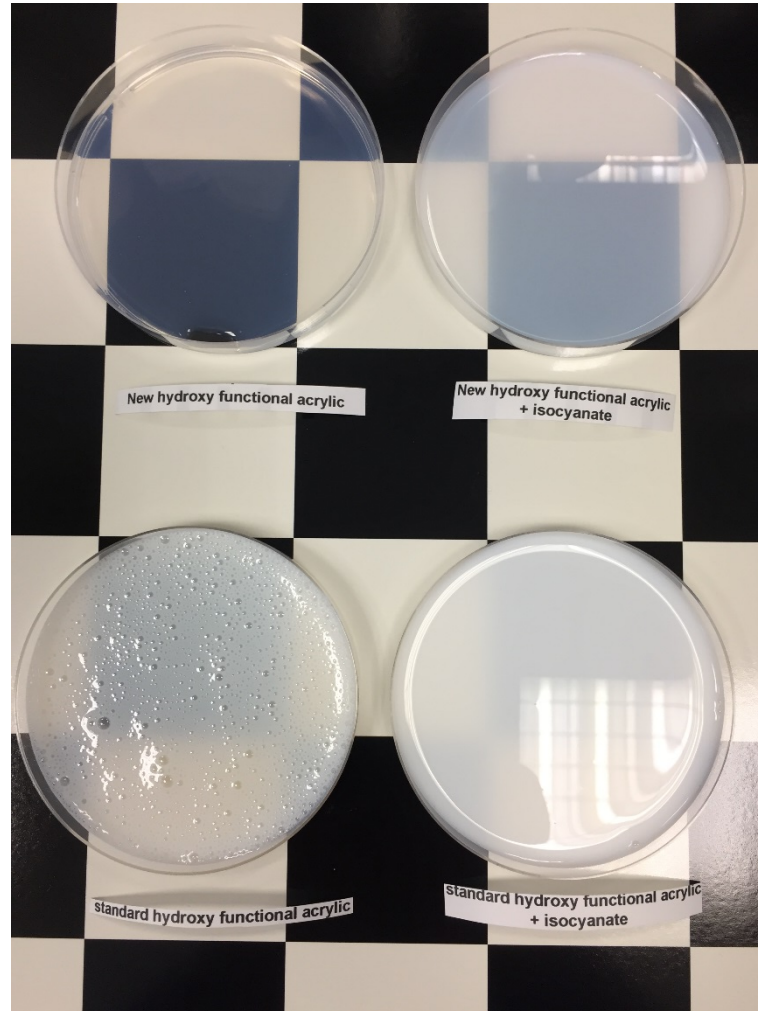


## Novel hydroxy functional acrylic [ALBERDINGK EP 100279]

- Solids: 40%
- MFFT: 35°C
- 4,4 % OH-content
- Easy to mix with NCO
- High gloss
- Clear in the can

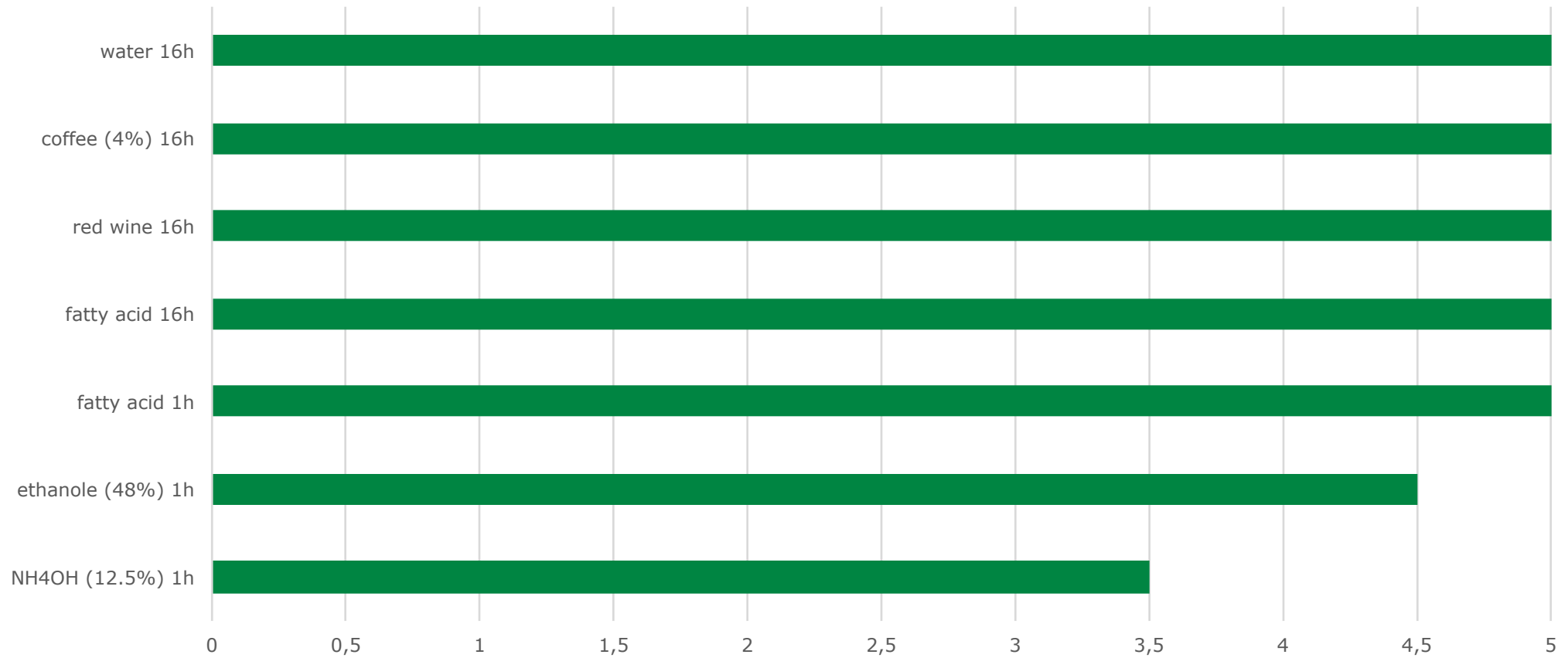


# Novel hydroxy functional acrylic [ALBERDINGK EP 100279]

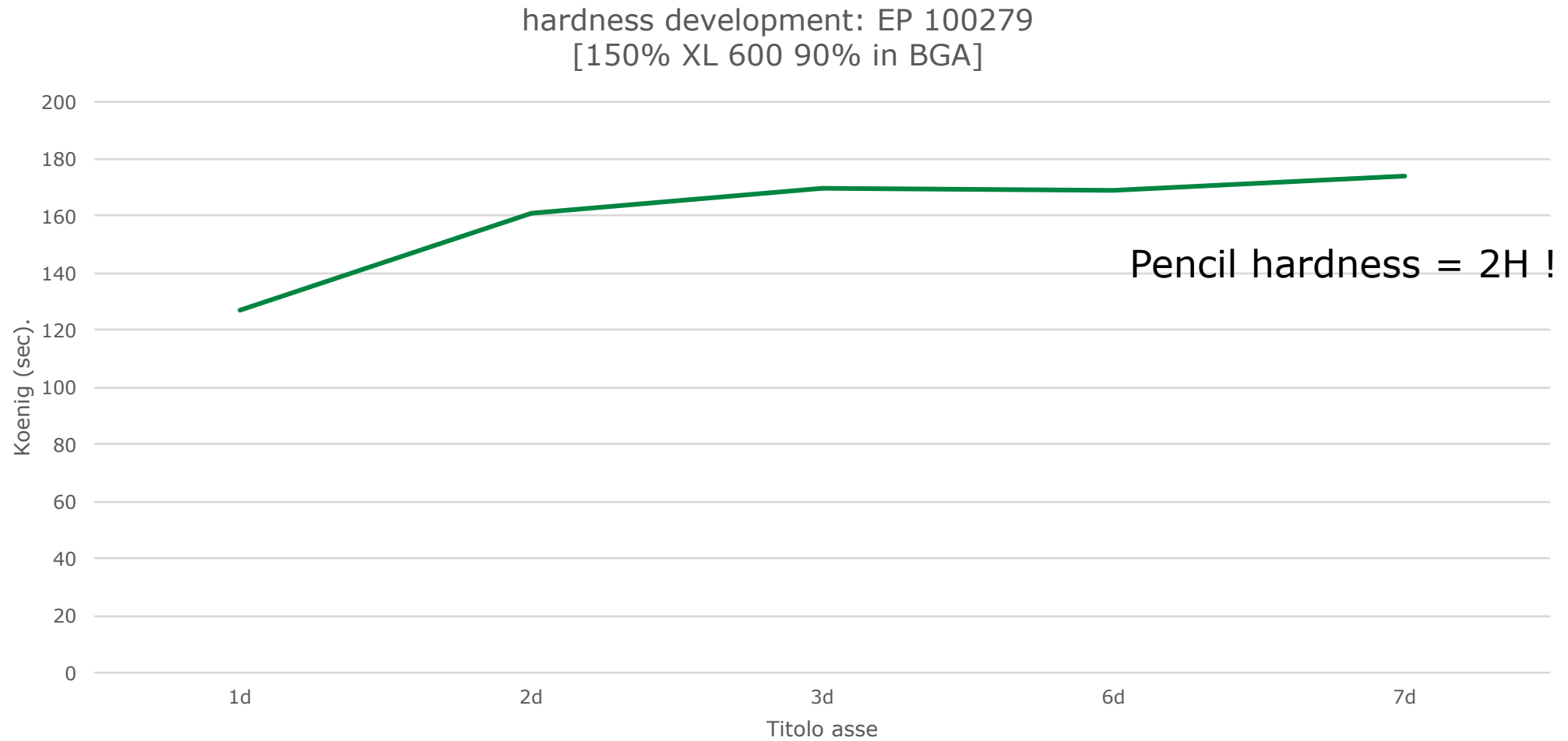


# Novel hydroxy functional acrylic [ALBERDINGK EP 100279]

Chemical resistance of EP 100279  
[150% XL 600 90% in BGA]



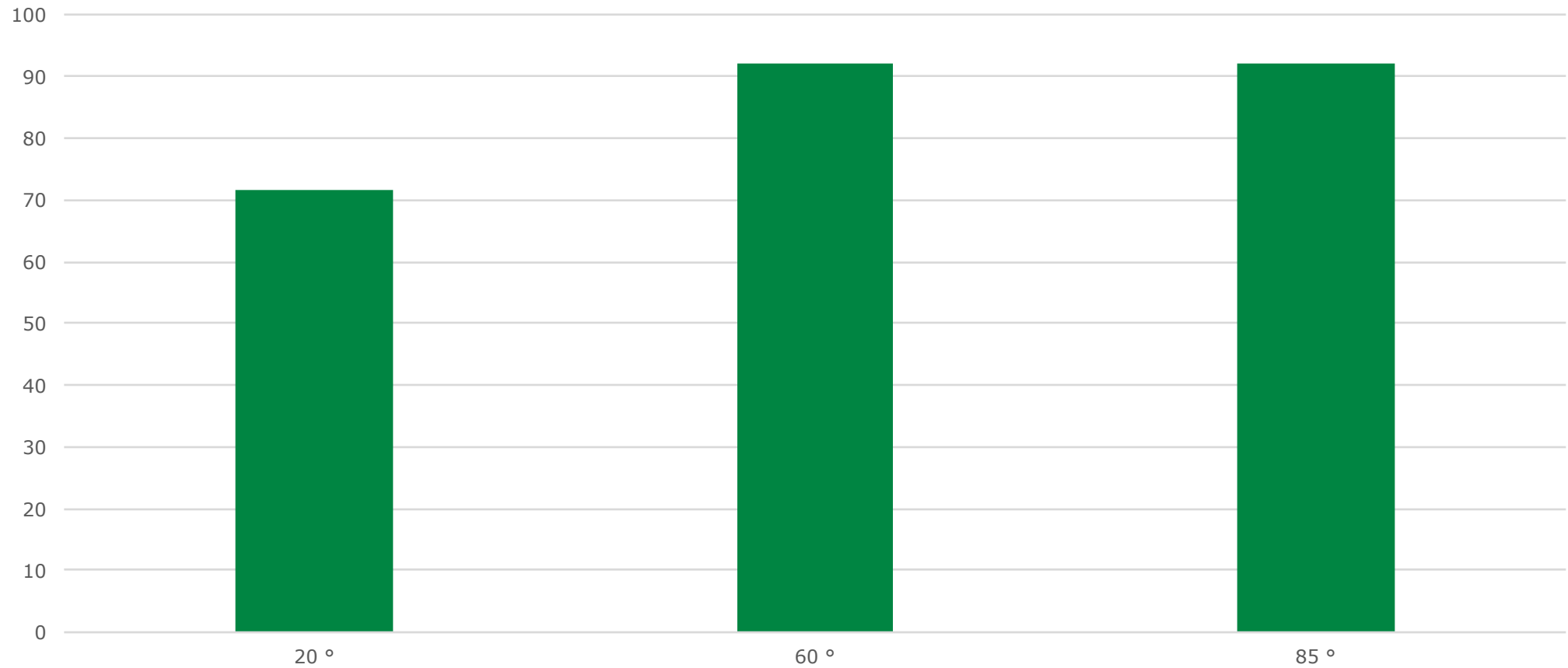
# Novel hydroxy functional acrylic [ALBERDINGK EP 100279]





# Novel hydroxy functional acrylic [ALBERDINGK EP 100279]

Gloss: EP 100279  
[150% XL 600 90% in BGA]



## Novel hydroxy functional acrylic [ALBERDINGK EP 100279]

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### Summary:

- ✓ Highly transparent (looks like SB during application)
- ✓ Very high chemical resistance
- ✓ Ultra fast hardness development
- ✓ Good and early blocking resistance
- ✓ Very scratch resistant
- ✓ Gloss finishes with fast drying



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## PU copolymer for clear wood finishes [ALBERDINGK UC 8400 VP]

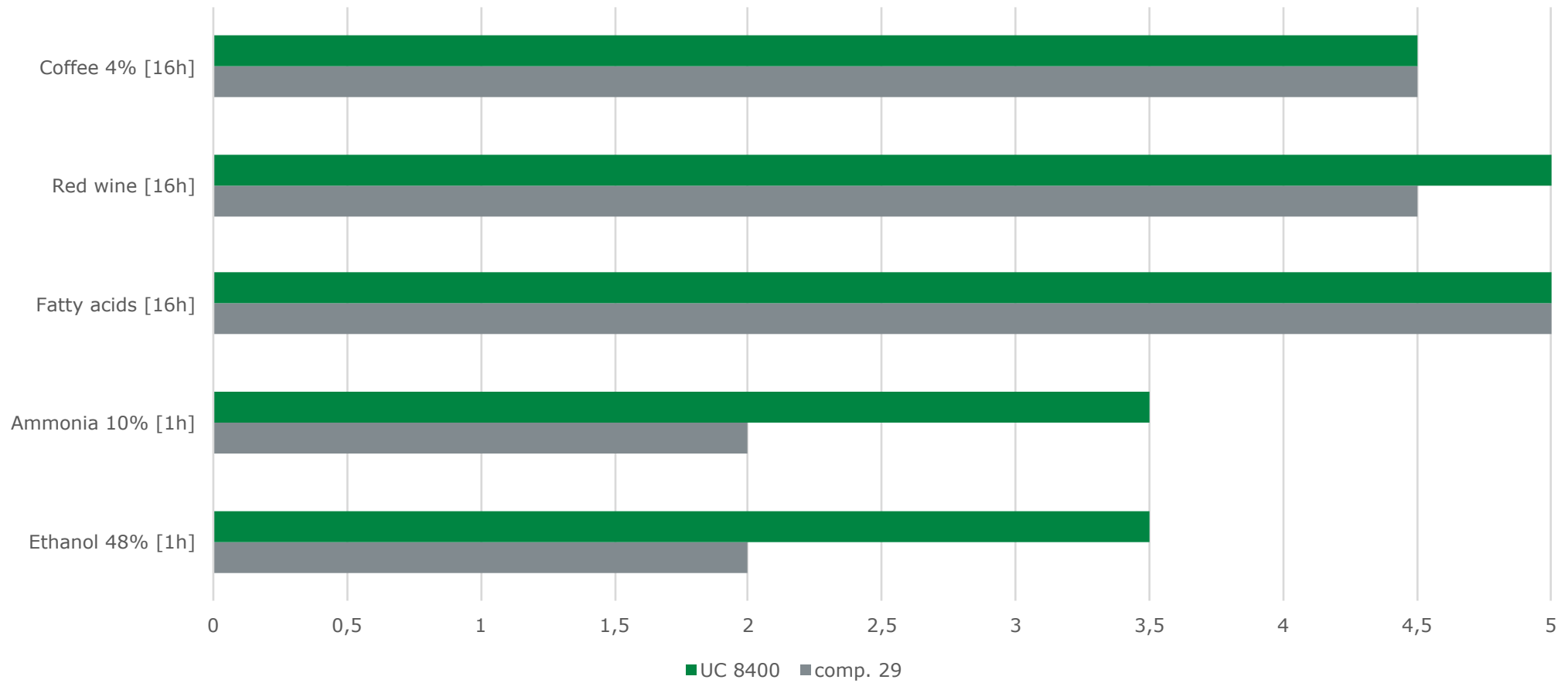
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- Solids: 40%
- MFFT: 45°C -> can be formulated with <5% cosolvent
- TEA free
- Economic
- Hard and blocking resistant
- Good chemical and mechanical resistances
- Excellent pH stability in combination with waterbased UV products !

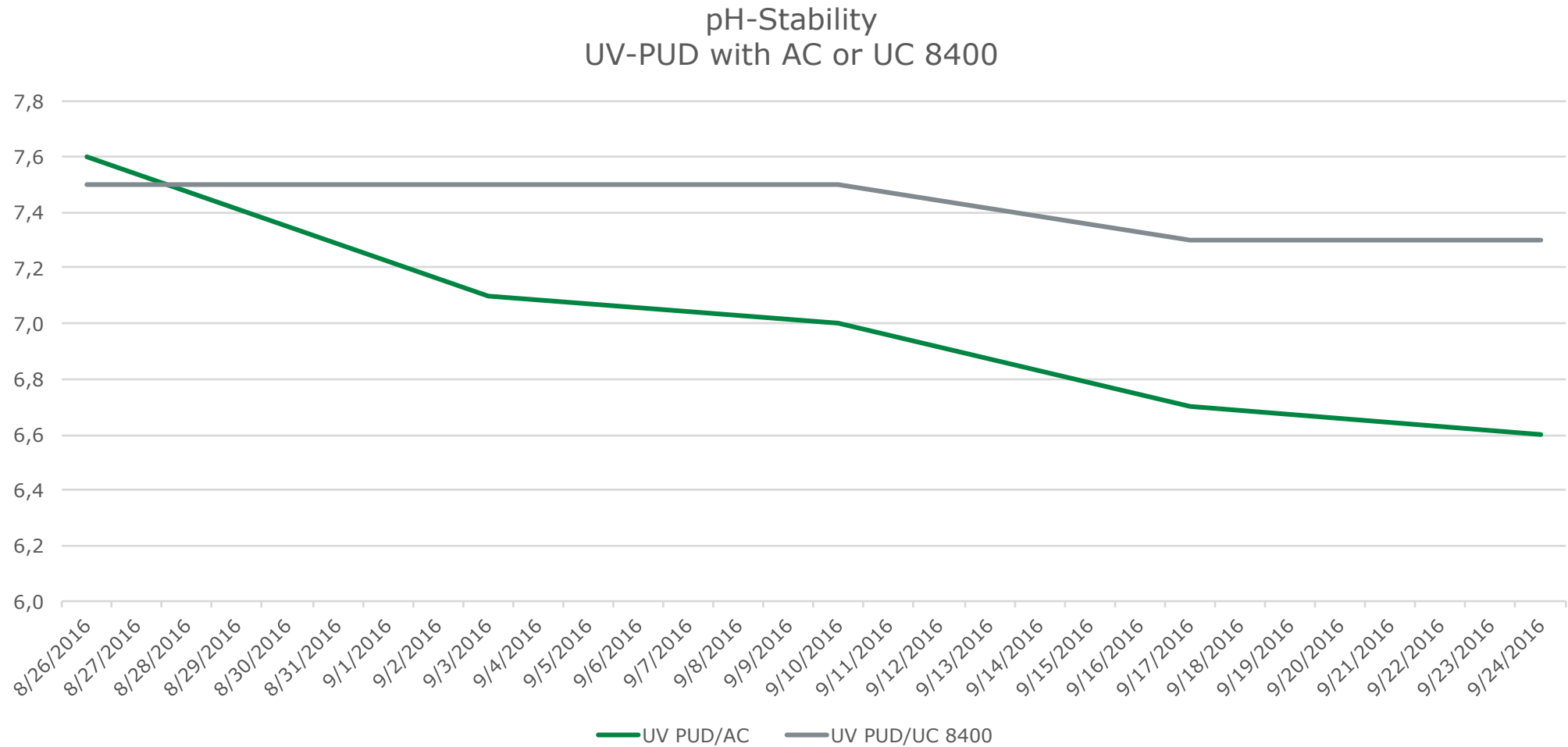


# PU copolymer for clear wood finishes [ALBERDINGK UC 8400 VP]

## Chemical resistance



# PU copolymer for clear wood finishes [ALBERDINGK UC 8400 VP]



## PU copolymer for clear wood finishes [ALBERDINGK UC 8400 VP]

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### Summary

- ✓ High hardness (110 sec/Koenig)
- ✓ Blocking resistant
- ✓ Good chemical and mechanical resistances
- ✓ Excellent pH stability in combination with waterbased UV products !
- ✓ Very economic



## Overview

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- R&D Targets / unmet needs
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## PU copolymer for pigmented wood finishes [ALBERDINGK HOE 101644]

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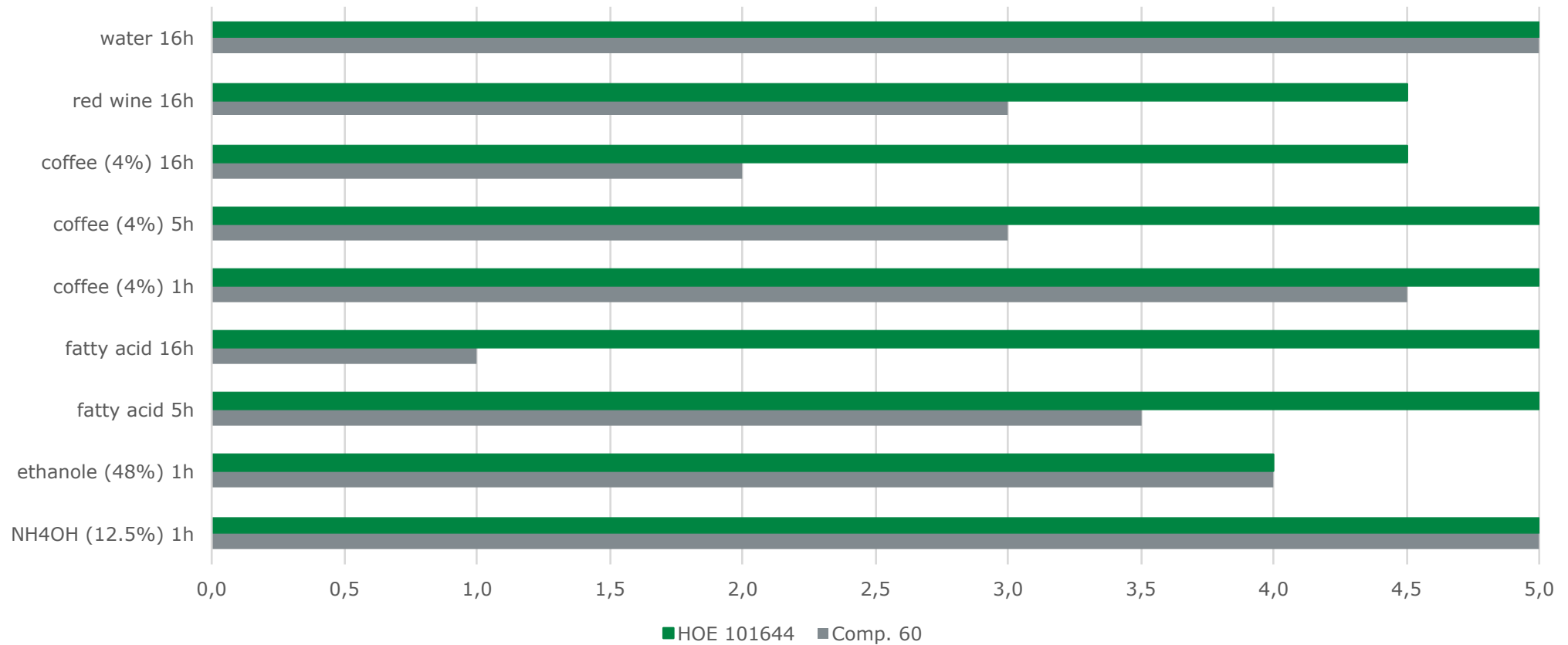
- Solids: 40%
- MFFT: 50°C
- Hydro- & lipophobic !
- Hard and blocking resistant
- Excellent stain & chemical resistances
- Very good pigment affinity



# PU copolymer for pigmented wood finishes [ALBERDINGK HOE 101644]

Chemical resistance  
HOE 101644 vs. Comp. 60

21% TiO<sub>2</sub> solid / ZetaSperse 3600



# PU copolymer for pigmented wood finishes [ALBERDINGK HOE 101644]

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## Summary:

- Superior 1K stain resistance
- Excellent 1K fatty acid resistance
- Fast drying and blocking resistant
- Good adhesion to various substrates



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- **PU dispersion for „indestructible“ finishes**



## PU dispersion for „indestructible“ finishes [ALBERDINGK U 9000 VP]

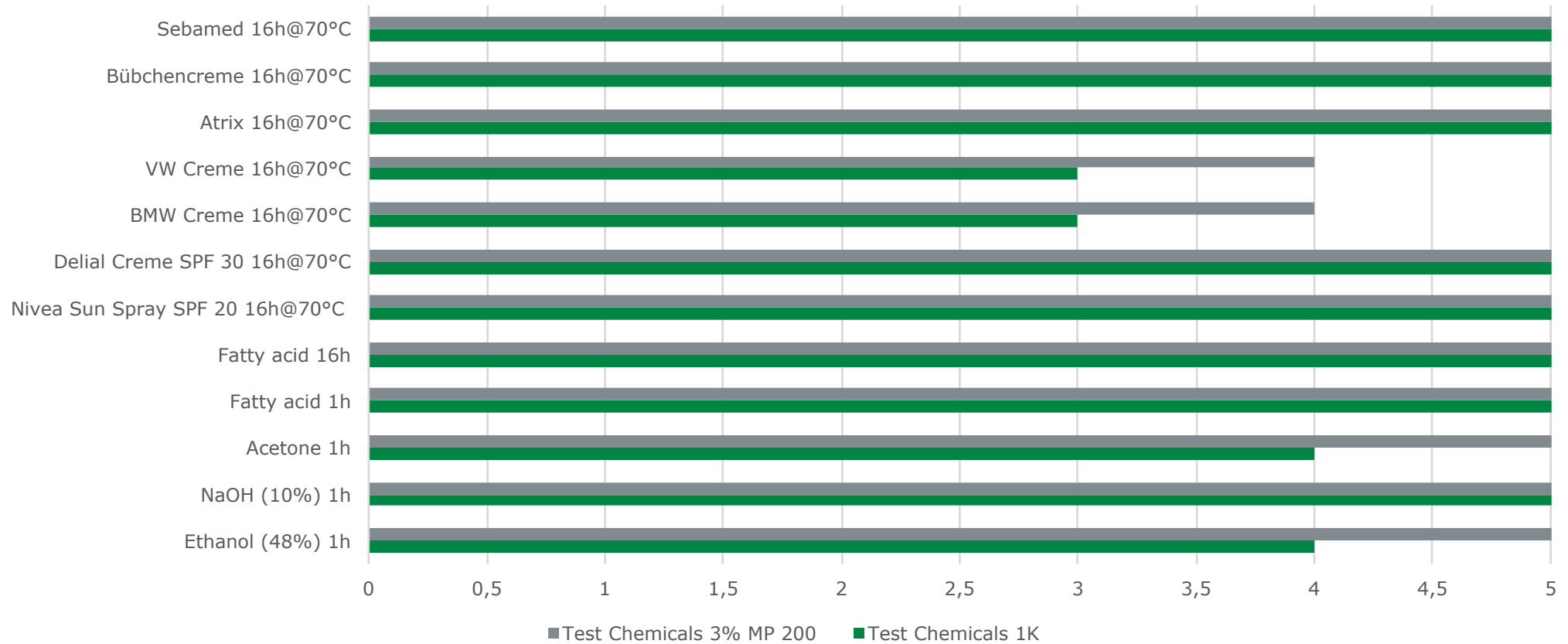
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- Solids: 30%
- Aliphatic polycarbonate PUD
- MFFT: 0°C (contains 11.9% NBP as VOC)
- Highly chemical resistant (1K)
- Superior chemical resistance with silane x-linker (CoatOSil MP 200)
- For wood, metal and glass coatings



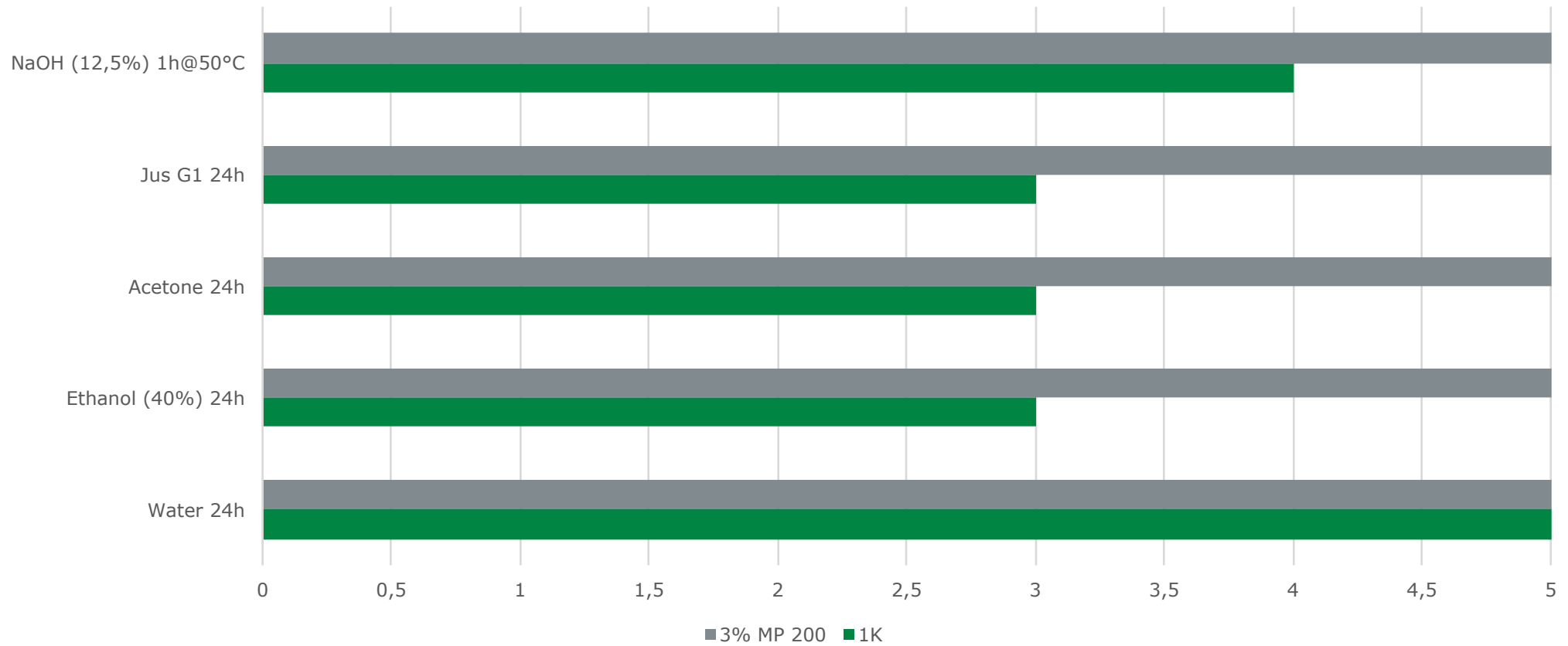
# PU dispersion for „indestructible“ finishes [ALBERDINGK U 9000 VP]

Chemical resistance: U 9000  
1K vs. 3% MP 200



# PU dispersion for „indestructible“ finishes [ALBERDINGK U 9000 VP]

chemical resistance: U 9000  
1K vs. 3% MP 200



## PU dispersion for „indestructible“ finishes [ALBERDINGK U 9000 VP]

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### Summary:

- Most chemical resistant PUD currently available
- Almost indestructible by chemical attack when x-linked with MP 200
- Highly chemical resistant as 1K
- Optimized for carbodiimides and silanes – 2K without hazardous chemicals
- For wood, metal and glass coatings





## Outlook

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- Novel hydroxy functional acrylic
  - Available for testing in 11/2016
- PU copolymer for clear wood finishes
  - Available for testing in 10/2016
- PU copolymer for pigmented wood finishes
  - Available for testing 11/2016
- PU dispersion for „indestructible“ finishes
  - Already commercially available



Questions ?

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