

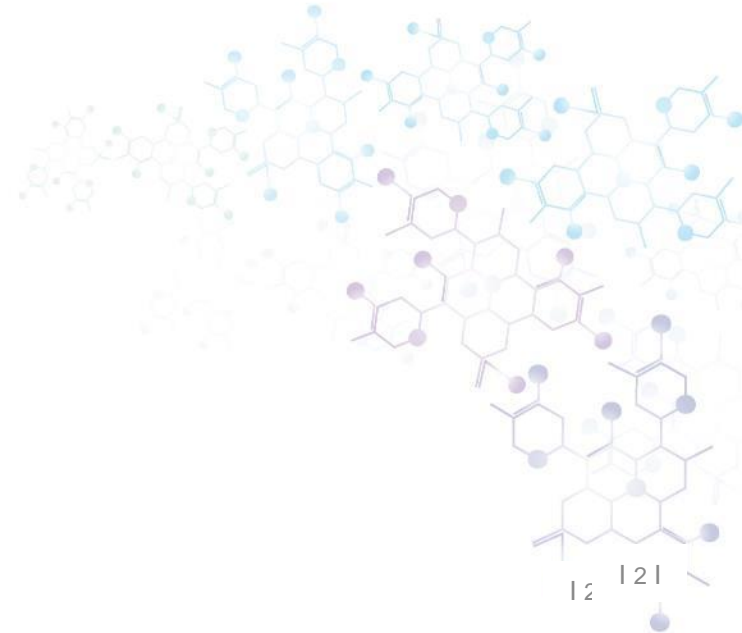
Außergewöhnliche Eigenschaften durch silanfunktionelle Polyurethan-Urea Bindemittel

L.Ossenschmidt
Dr. A.Wiegand

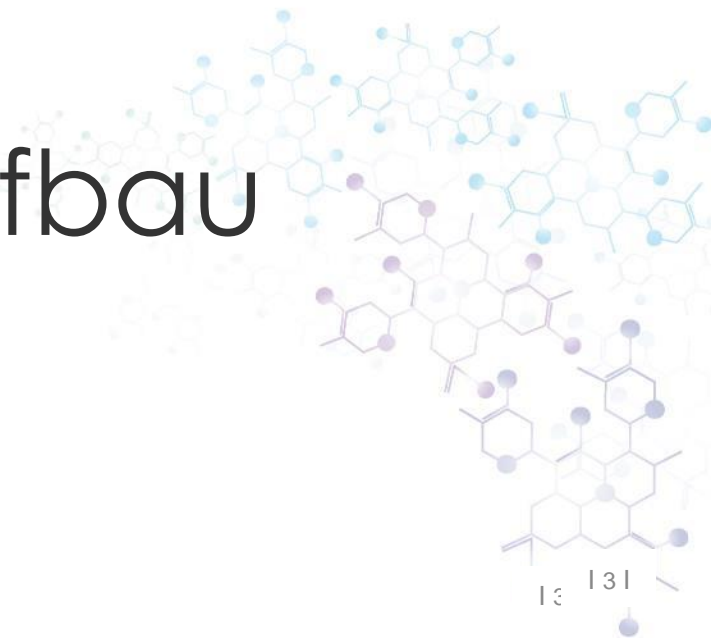


Index

1. Chemischer Aufbau
2. Vernetzung, Katalyse und Vororientierung
3. Eigenschaften und Einsatzmöglichkeiten
4. Zusammenfassung

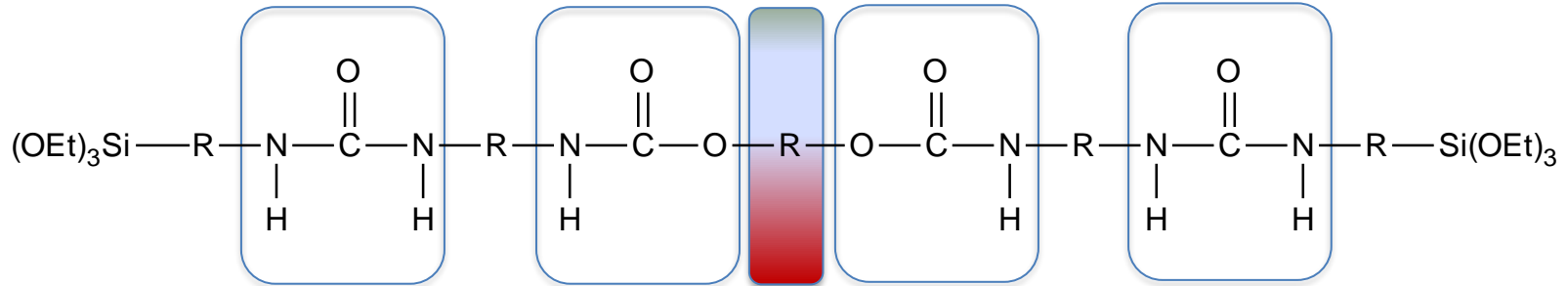


Chemischer Aufbau



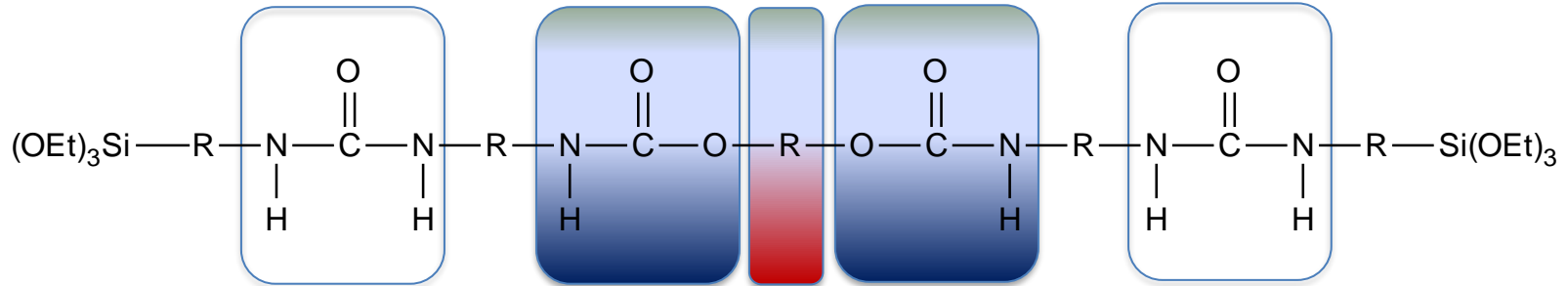
Basispolyol

- Flexibilität
- Hydrolysestabilität
- Lichtbeständigkeit



Urethan

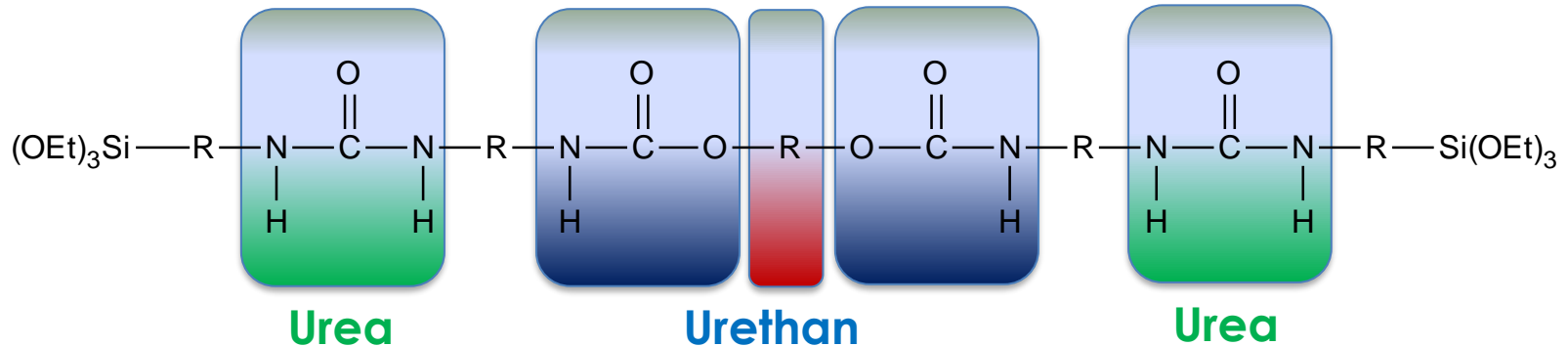
- Zähelastizität
- Abriebfestigkeit



Urethan

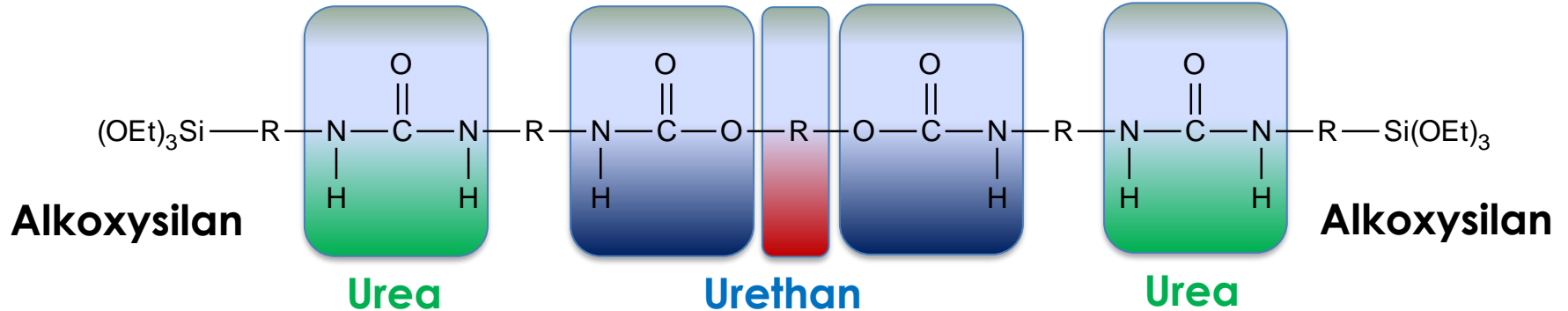
Urea / Harnstoff

- Härte
- Kratzfestigkeit



Ethoxysilan

- anorganische Komponente
- vernetzende Gruppe
- spaltet Ethanol

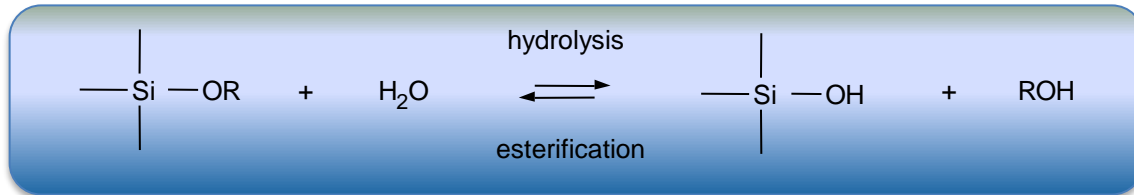


Vernetzung, Katalyse and Vororientierung



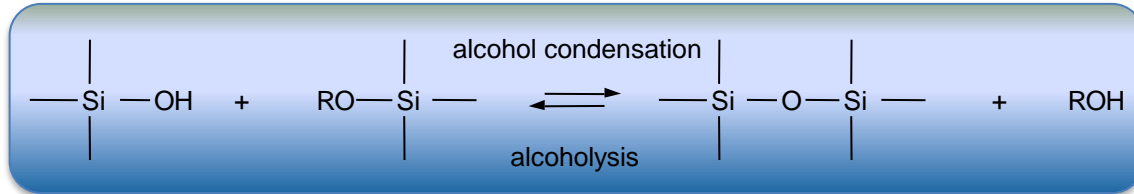
Silanvernetzung – Sol / Gel – Prozess

- Hydrolyse

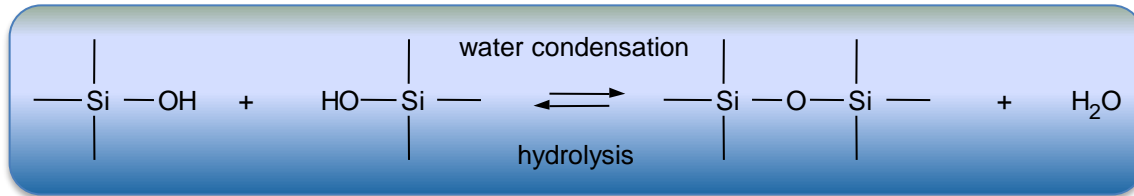


Silanvernetzung – Sol / Gel – Prozess

- **Polykondensation**
- Kondensation mit Alkohol ($\text{Si-OH} > \text{H}_2\text{O}$)

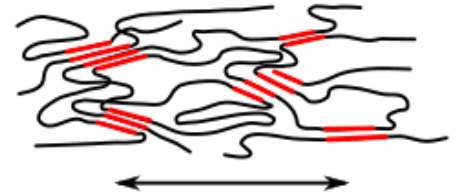
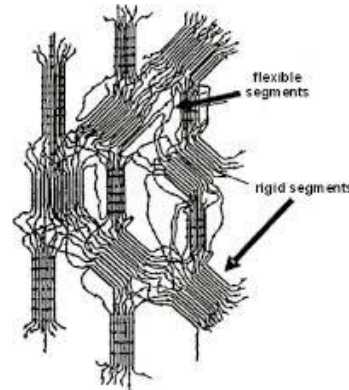
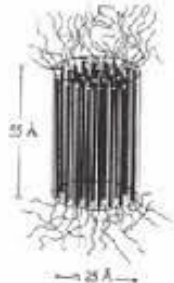
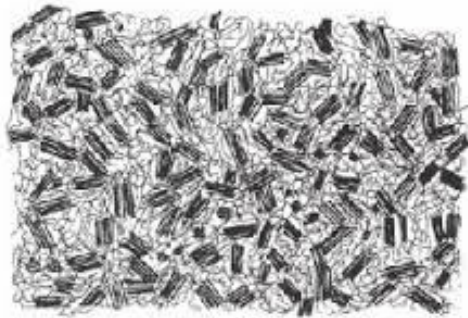


- Kondensation mit Wasser ($\text{H}_2\text{O} > \text{Si-OH}$)



Bildung von Überstrukturen

- Phasenseparation bei der Filmbildung
- Bildung von kristallinen, harten Bereichen in elastomerer / weicher Matrix durch die Ausrichtung der polaren Hartsegmente



<http://www.whatischemistry.unina.it/en/ps6.jpg>

https://www.tpu.covestro.com/-/media/Product%20Center/TPU/Images/Technologies/English/chemico_physical_structure_2.jpg

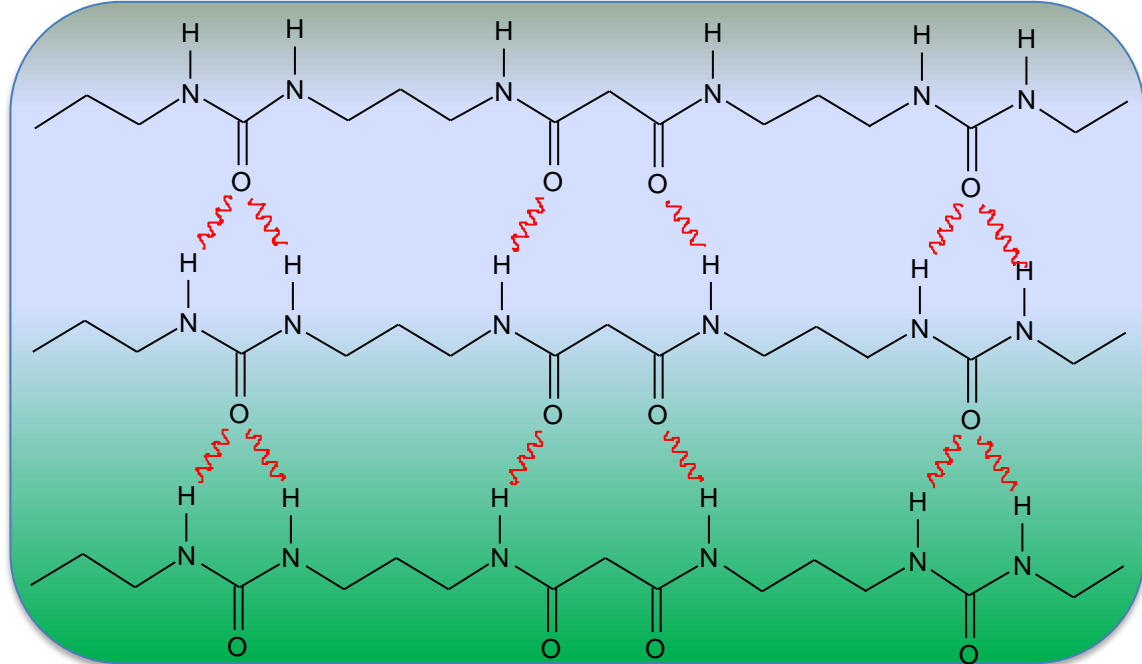
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Bildung von Überstrukturen

Verbrückung einzelner **Polymerketten** über Wasserstoffbrückenbindungen

Leitersprossen

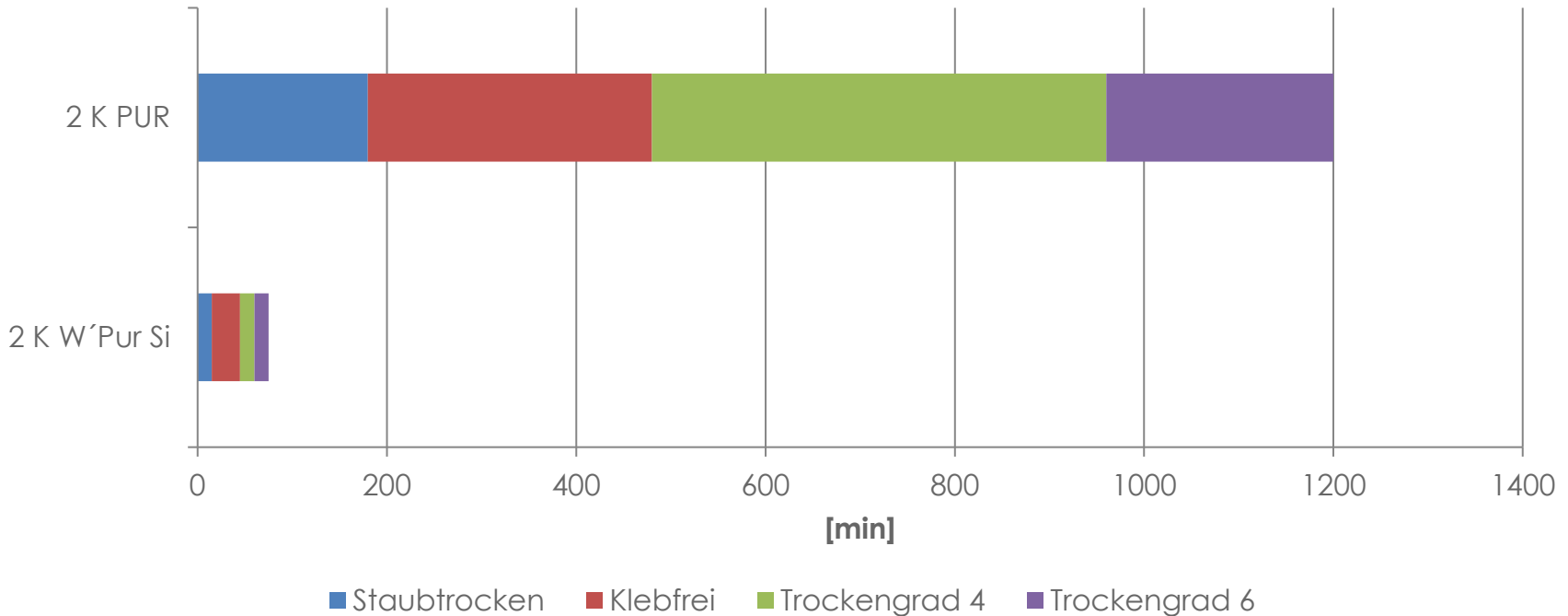


Eigenschaften und Einsatzmöglichkeiten



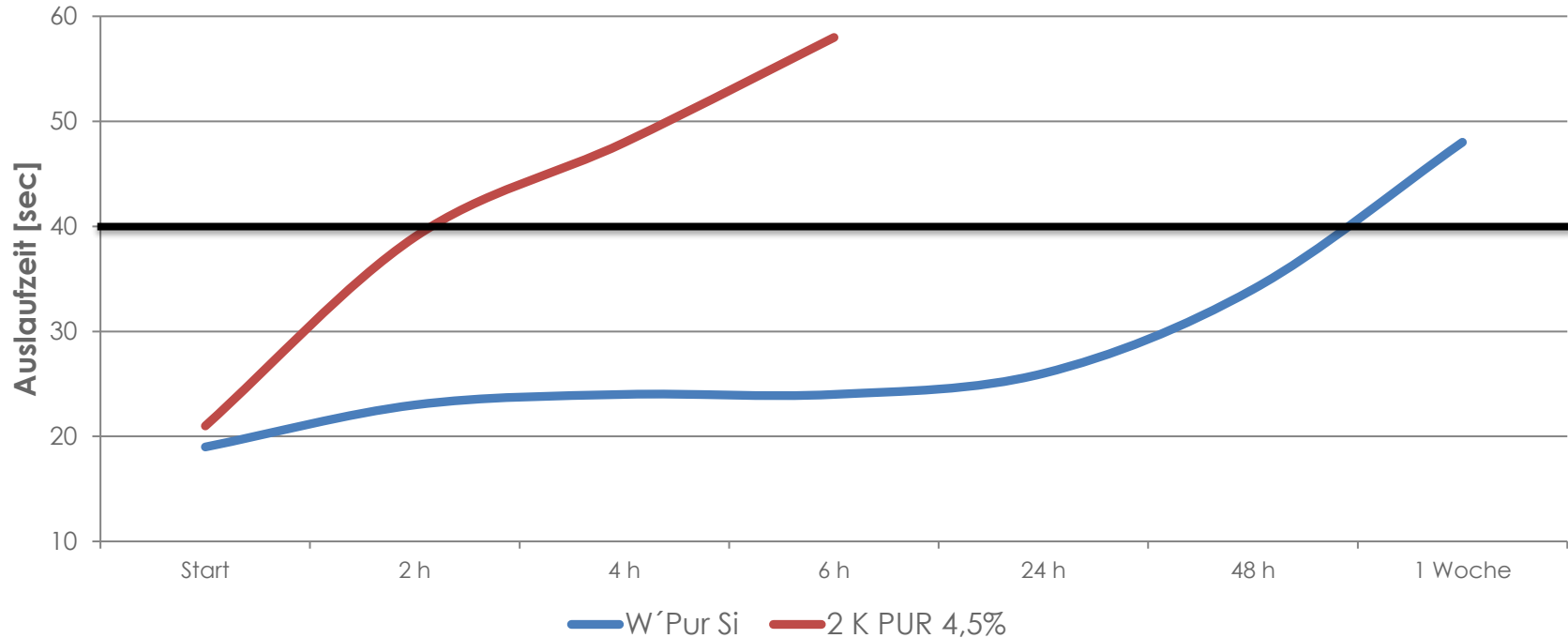
kurze Trocknungszeiten – 2 K HS Decklack

Trocknungseigenschaften // 2 K HS W´Pur Si vs. 2 K HS PUR



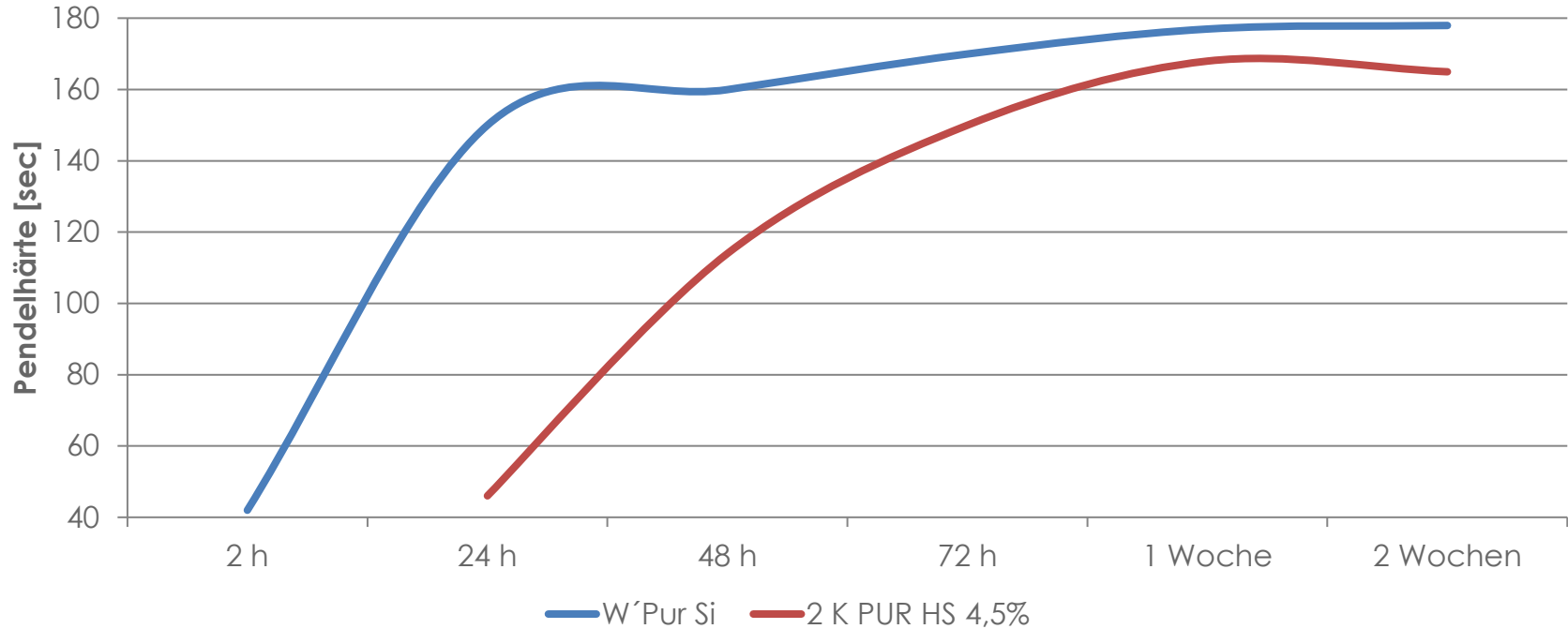
Lange Topf- bzw. Verarbeitungszeit – 2 K HS Decklack

Viskositätsanstieg // 2 K HS W´Pur Si vs. 2 K HS PUR



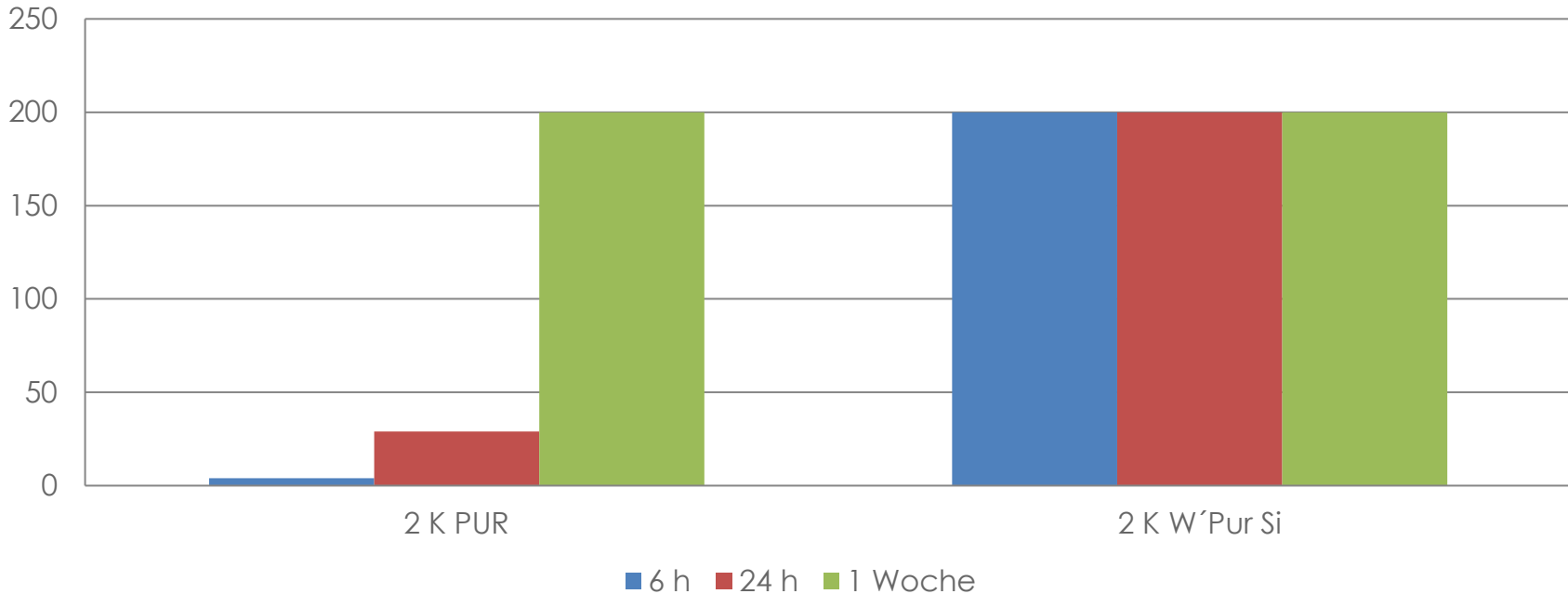
Härteentwicklung – 2 K HS Decklack

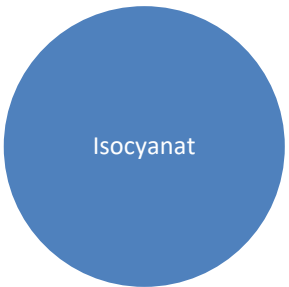
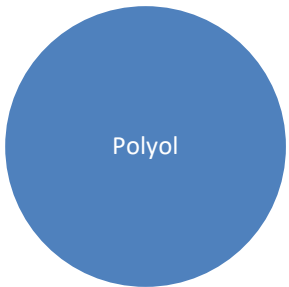
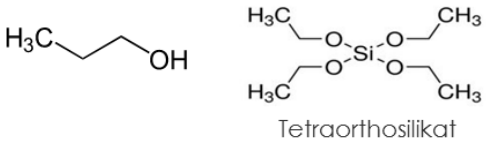
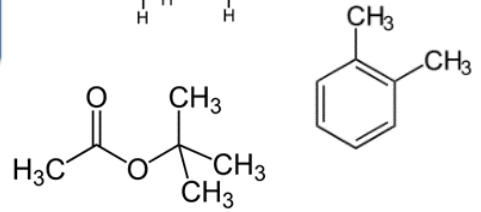
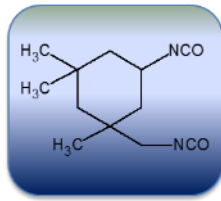
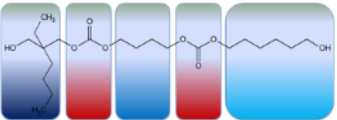
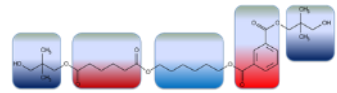
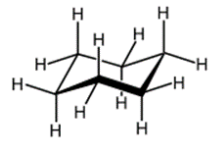
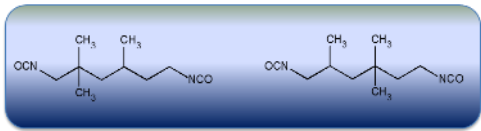
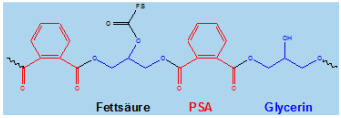
Pendelhärte // 2 K HS W´Pur Si vs. 2 K HS PUR

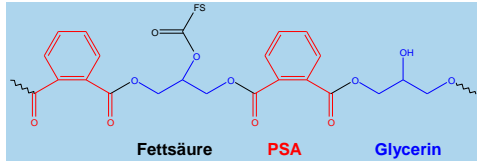


frühe und gute chemische Beständigkeit

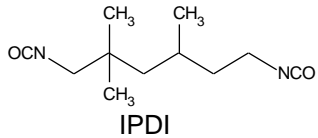
MEK Beständigkeit Möbellack - Doppelhübe







Polyol



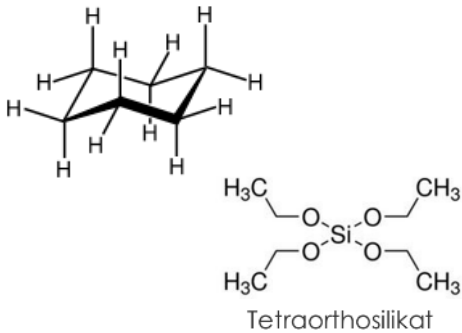
Isocyanat



Silanfunktionelles
Polyurethan-Urea
Bindemittel

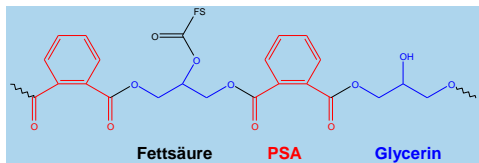


Lösungs-
mittel

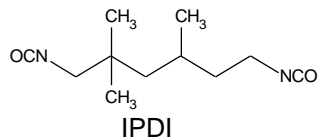


2 K UHS Parkettöl





Polyol



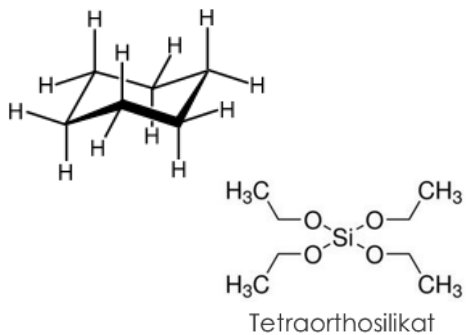
Isocyanat



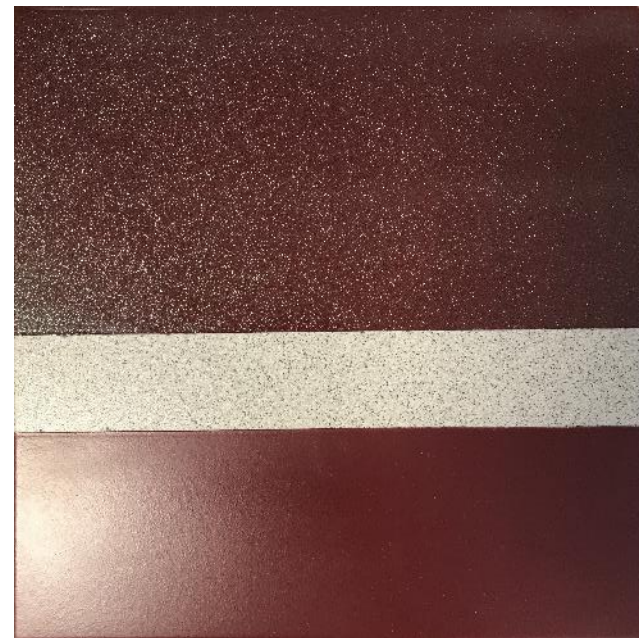
Silanfunktionelles
Polyurethan-Urea
Bindemittel



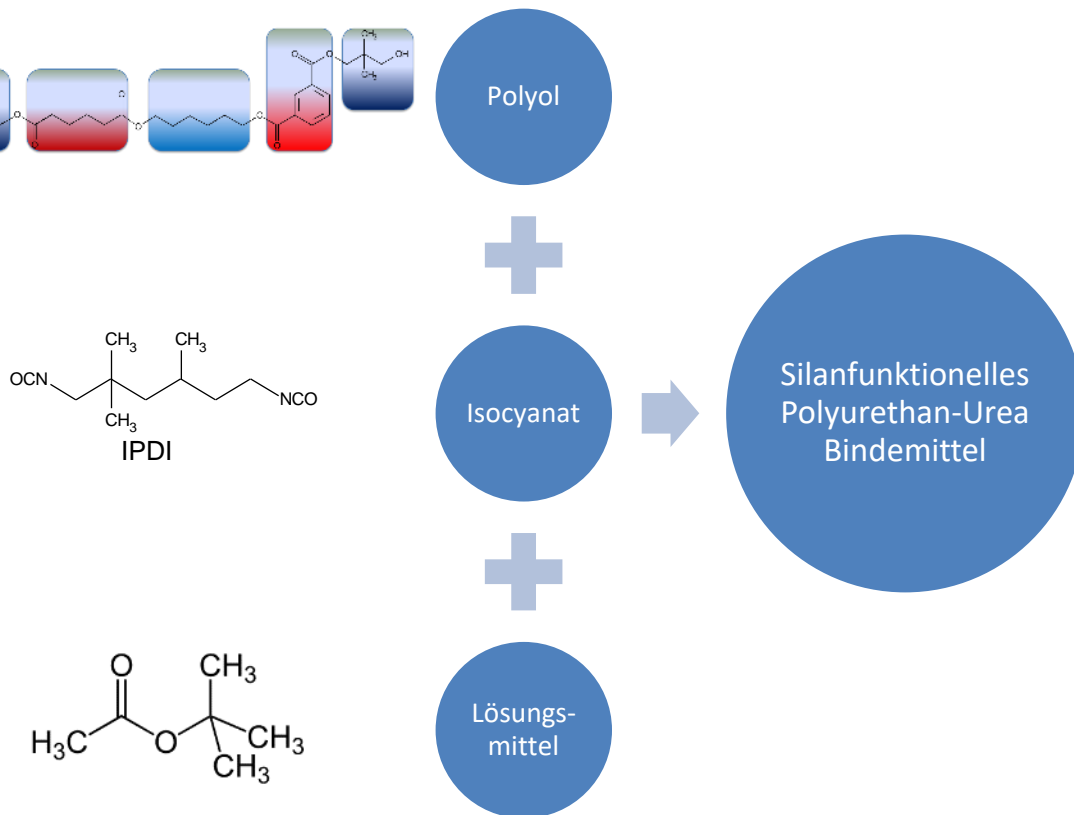
Lösungs-
mittel



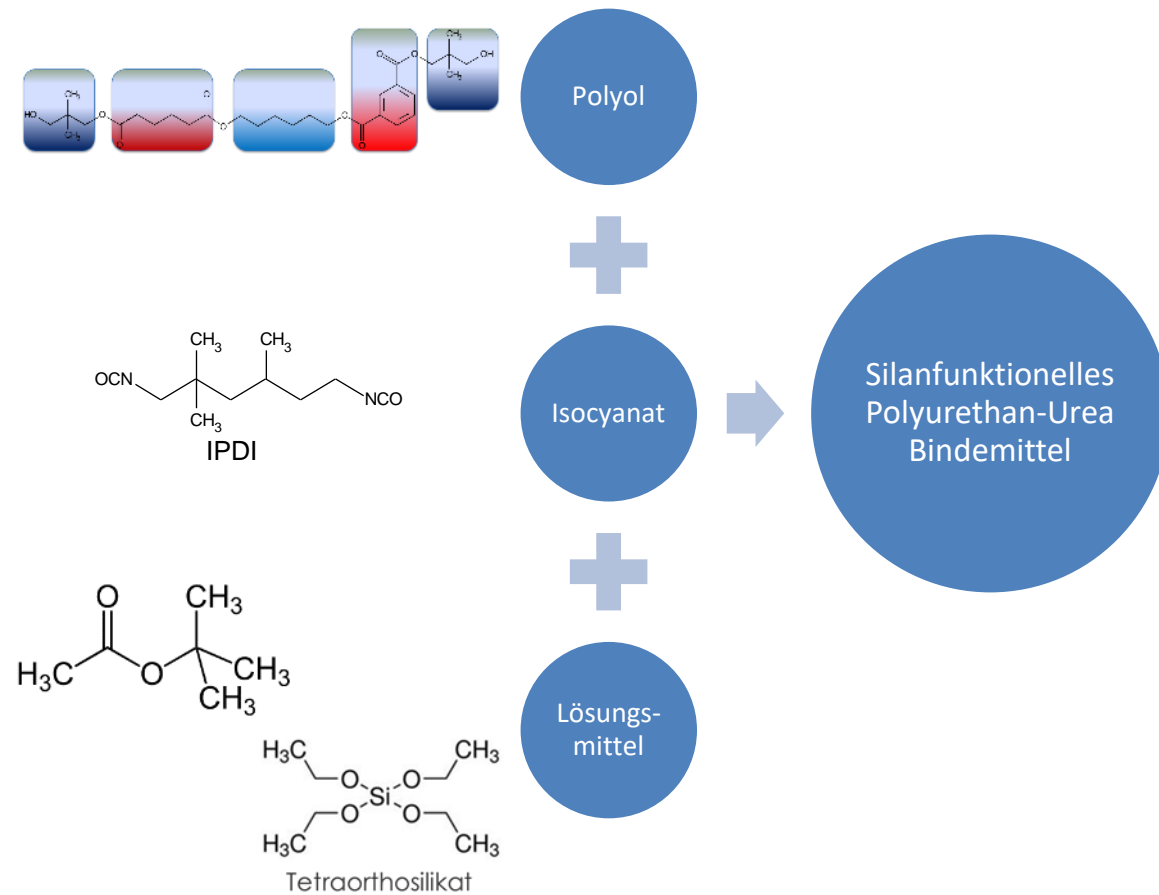
2 K Fliesenlack

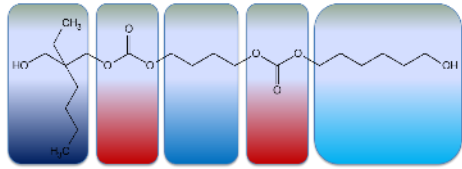


2 K Möbellack

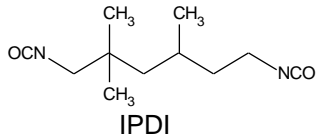


2 K HS Grundierung / Decklack





Polyol



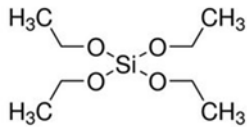
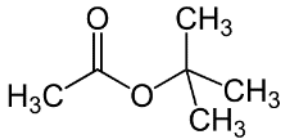
Isocyanat



Silanfunktionelles
Polyurethan-Urea
Bindemittel



Lösungs-
mittel



2 K UHS hochbeständige Bodenbeschichtung



Einsatzmöglichkeiten

HS / UHS Lacke

Containerlack

Soft-Feeling Lack

Fahrzeuginnenlack

Anti-Graffiti Lack

Fliesenlack

Fußbodenlack

Anti-Rutsch Lack

Möbellack

Einbrennlack

Lasur

Holzöle

Autoreparaturlack

Schnellrenovierfarbe

Parkettlack

Industrielack

Maler- und Bautenlack

Klarlack

Schwimmbadfarbe

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CHEMICAL RAW MATERIALS