MeltPrep

lets you focus on research

Vacuum Compression Molding

as sample preparation for thermal analysis of thermoplastic materials.

Dr. Daniel Treffer, CEO and Founder

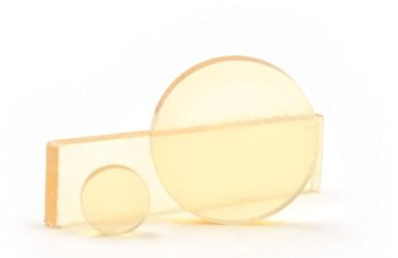
STK Annual Meeting, May 15th 2018
Innovation in Thermal Analysis and Calorimetry

research center pharmaceutical engineering

Science Park The High Tech Incubator Graz

What is Vacuum Compression Molding?

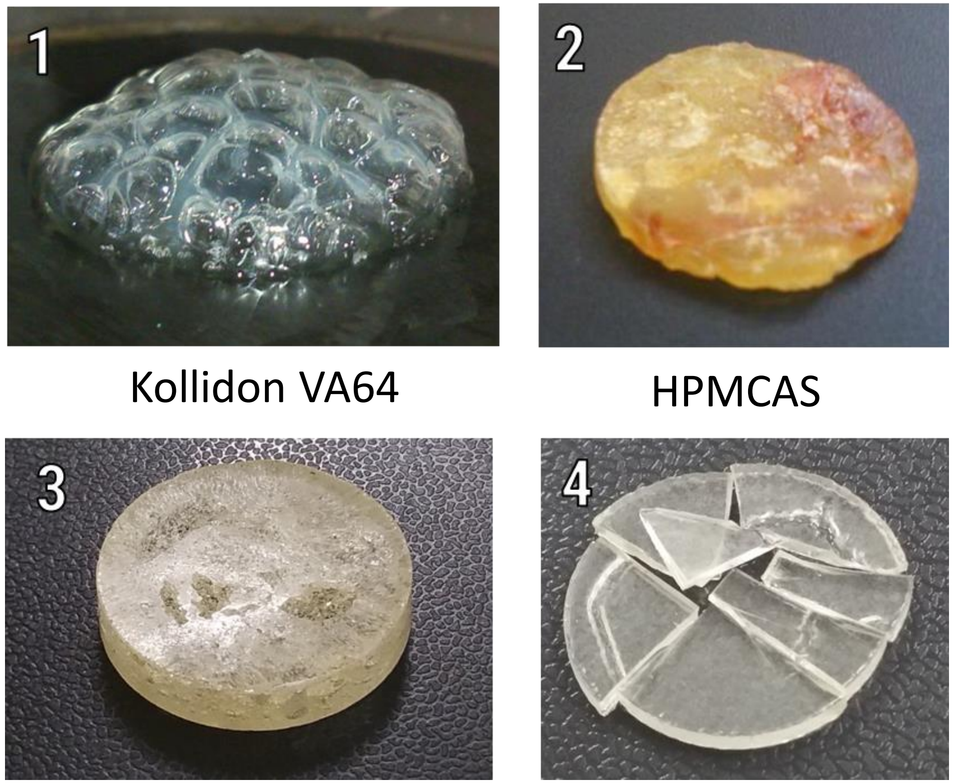
VCM Tool



Perfect samples

How did it start?

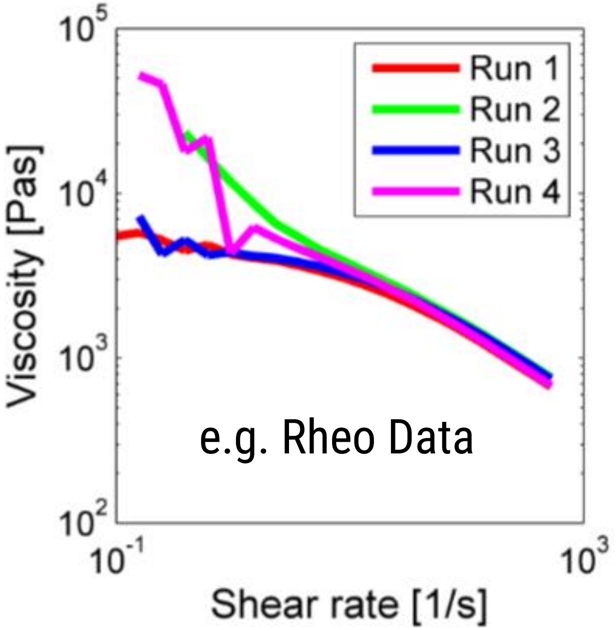
- Start with my phd in the field of pharmaceutical engineering at the Institute of Prof. Khinast in September 2011
- First contact with hot-melt extrusion. Measurement of material properties.



1 Kollidon VA64 · 2 HPMCAS · 3 Soluplus · 4 Kollidon VA64

Problems

1. Bubbles
2. Degradation
3. Shrinkage
4. Sticking



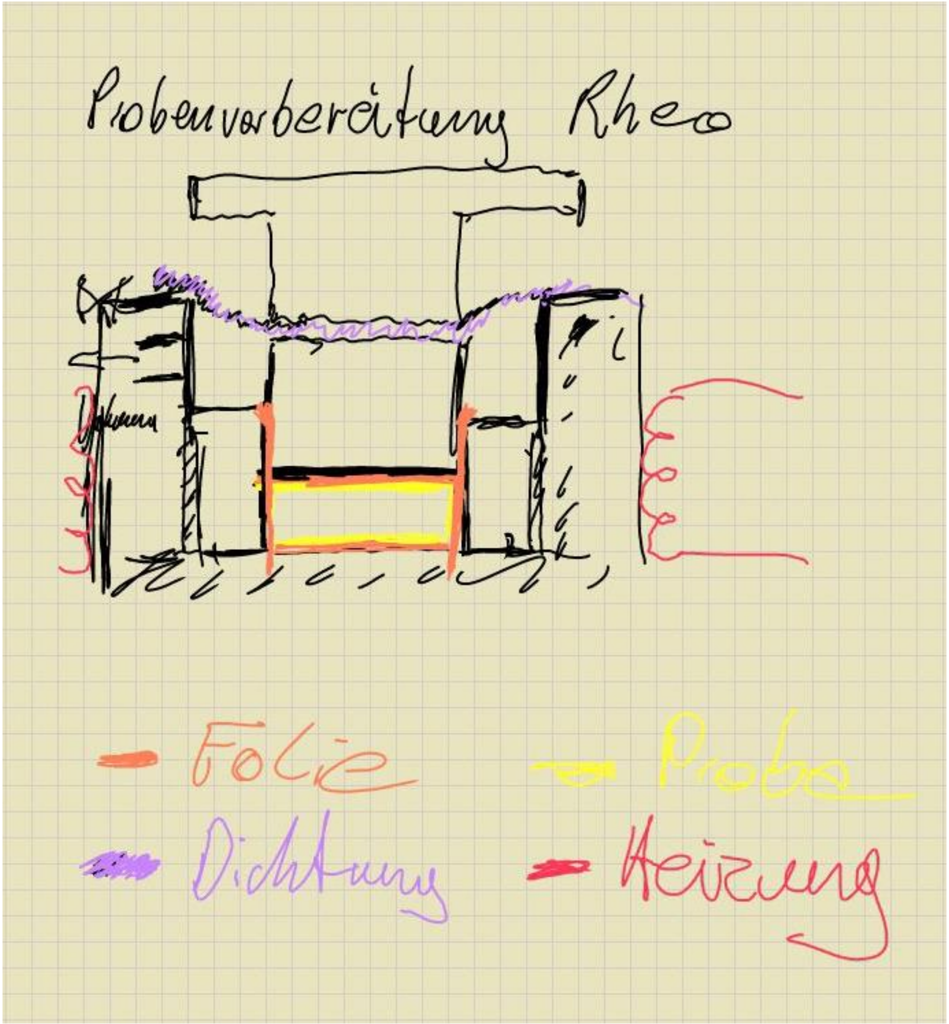
Reproducible measurements are impossible!

The light-bulb moment

13. February 2014

The hands on experience
of a new material

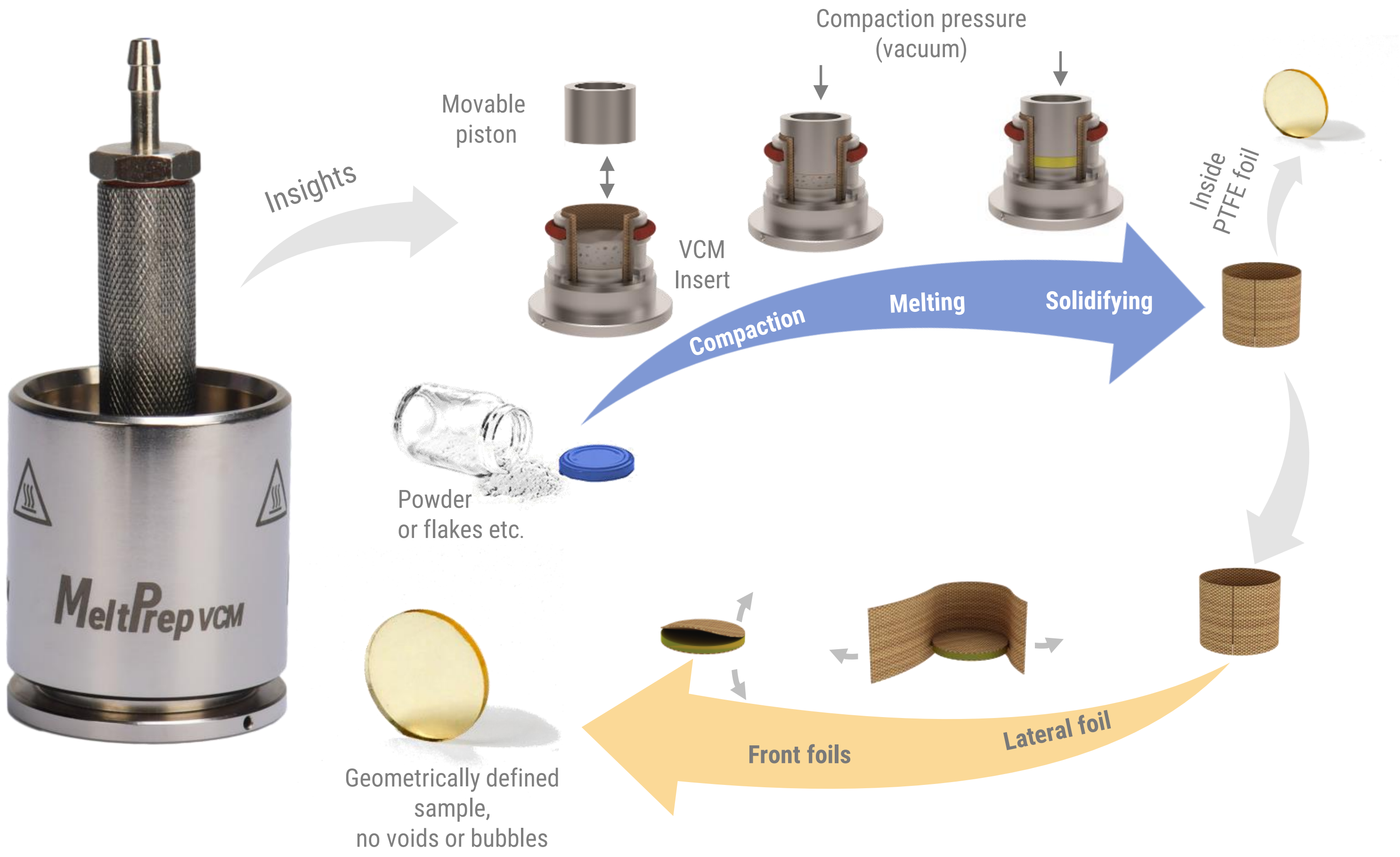
Teflon foil reinforced with glass-fibres



Introduction Video

https://youtu.be/Fz1P9HU526Q

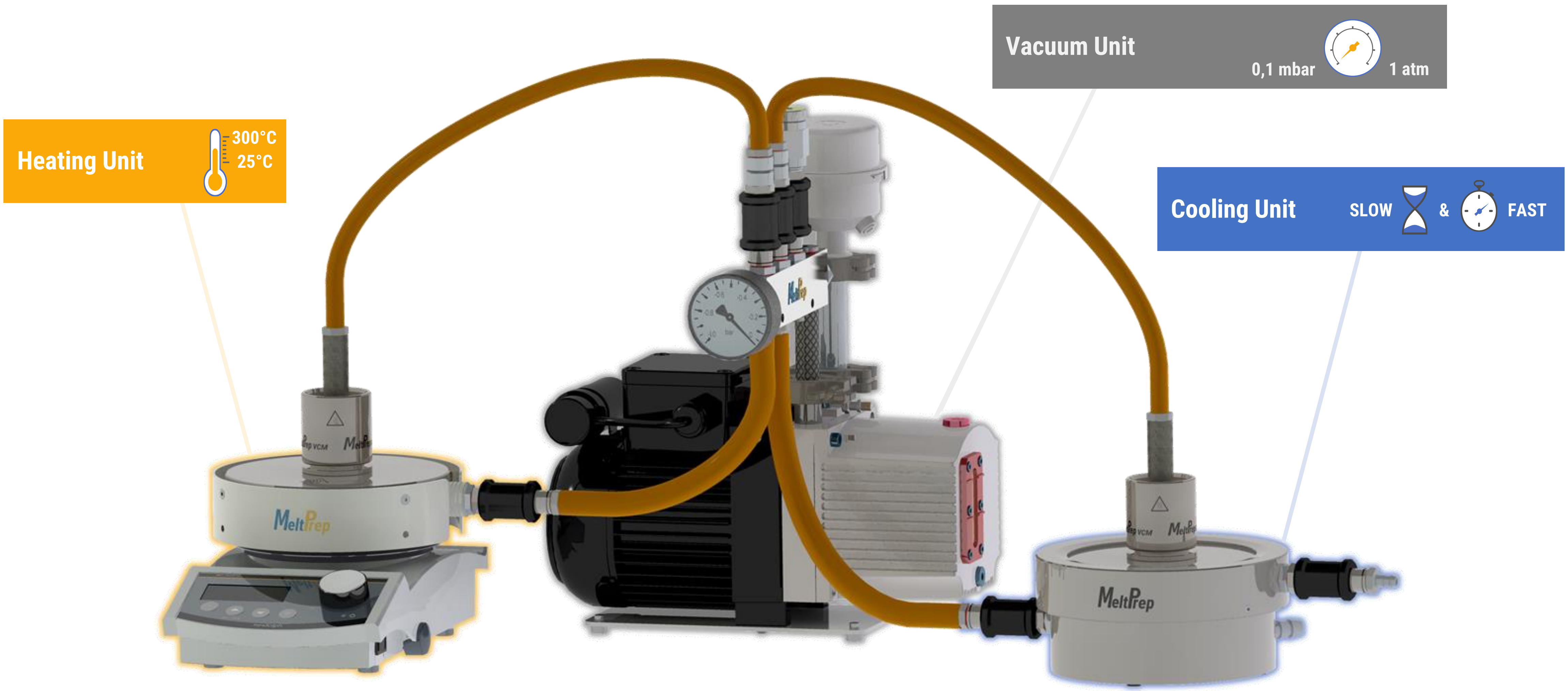
What are the innovations?



#1
Adaptable sample chamber

#2
Peelable sample chamber

VCM Essentials



Flawless Samples

MeltPrep

Rotate them →

www.meltprep.com/spinners

Applications

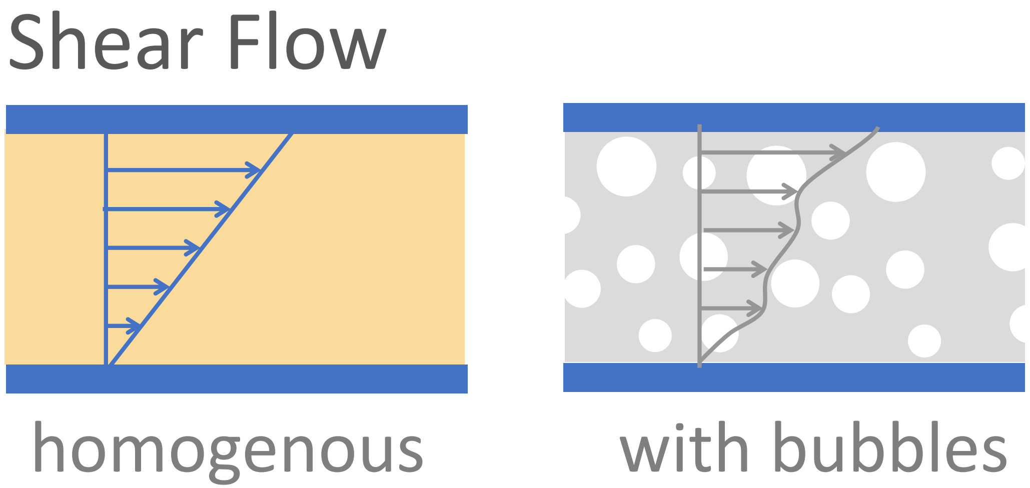
MeltPrep

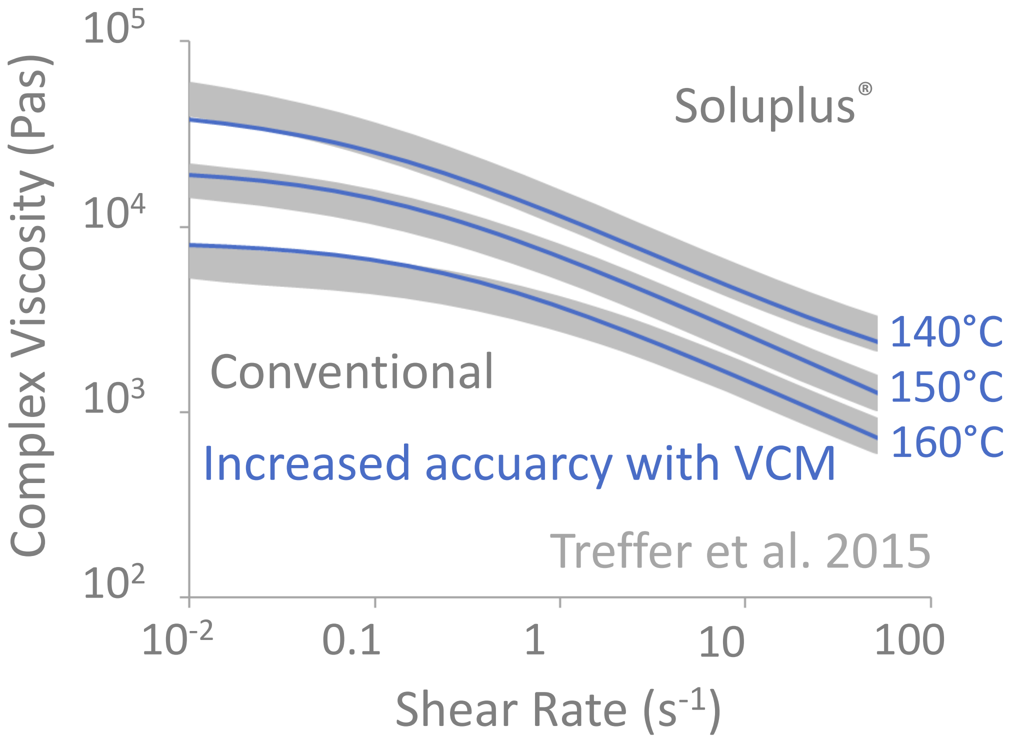
Hardness
Notch Impact Strength
Heat Capacity
Solubility
Surface Tension
Rheology

Spectroscopy
Dynamic Mechanical Analysis
Stability
Thermal Conductivity
Density
Diffusion
Dissolution

Rheology

(Discs 8-25 mm)

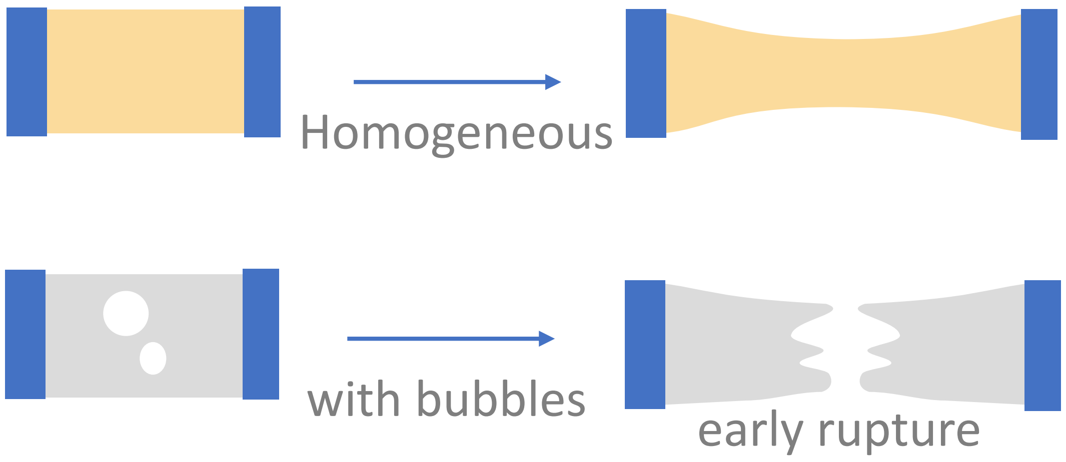


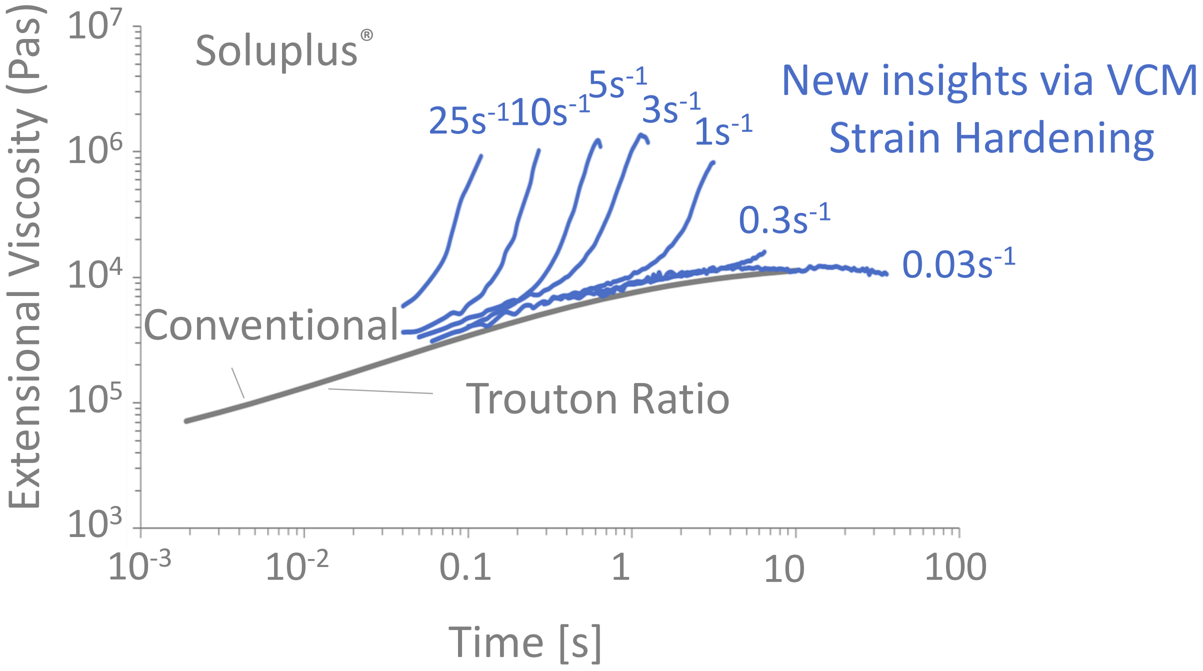


Rheology

(Bars 10x40 mm)

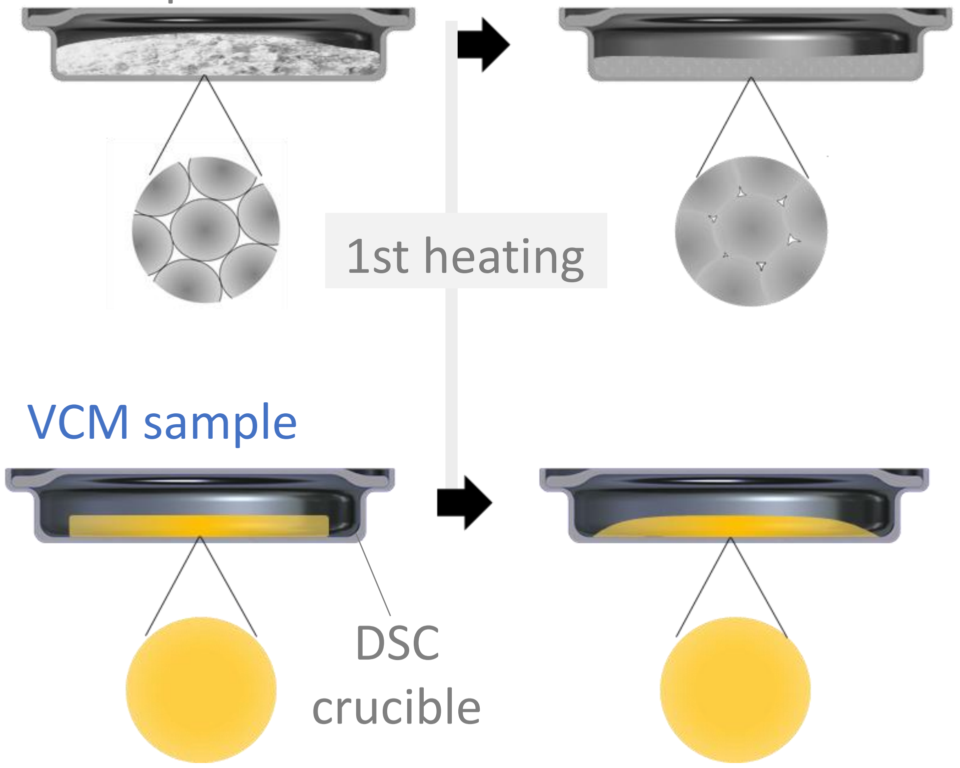
Extensional Flow

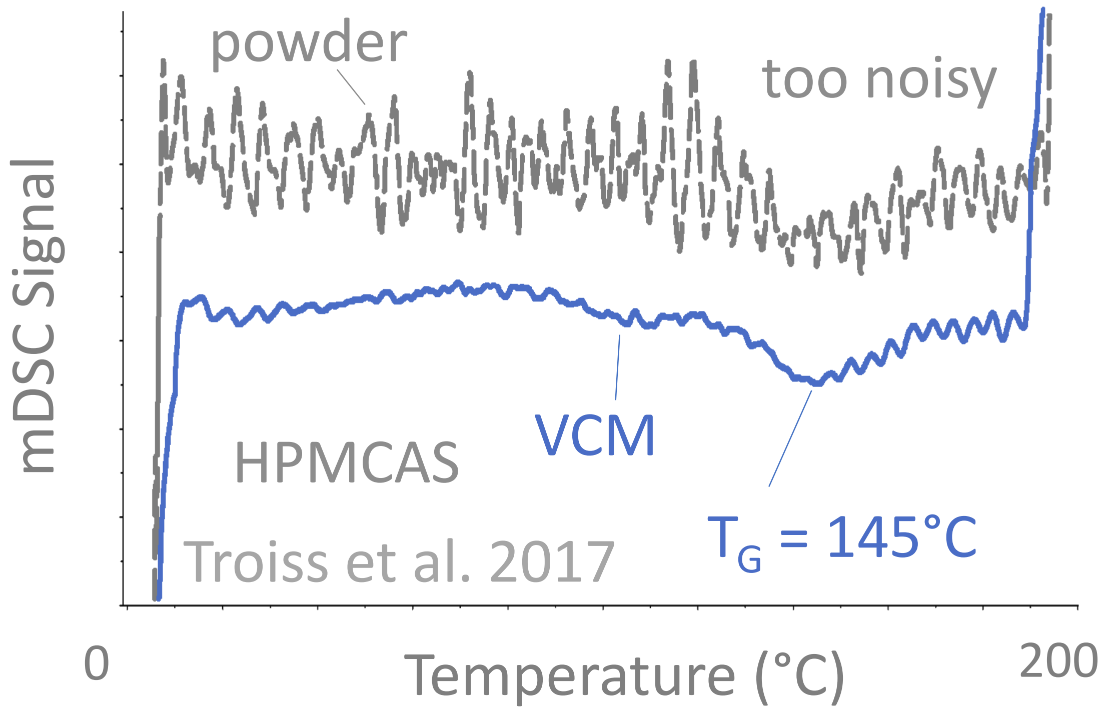




DSC Measurements

(Discs 5 mm)





DSC Measurements

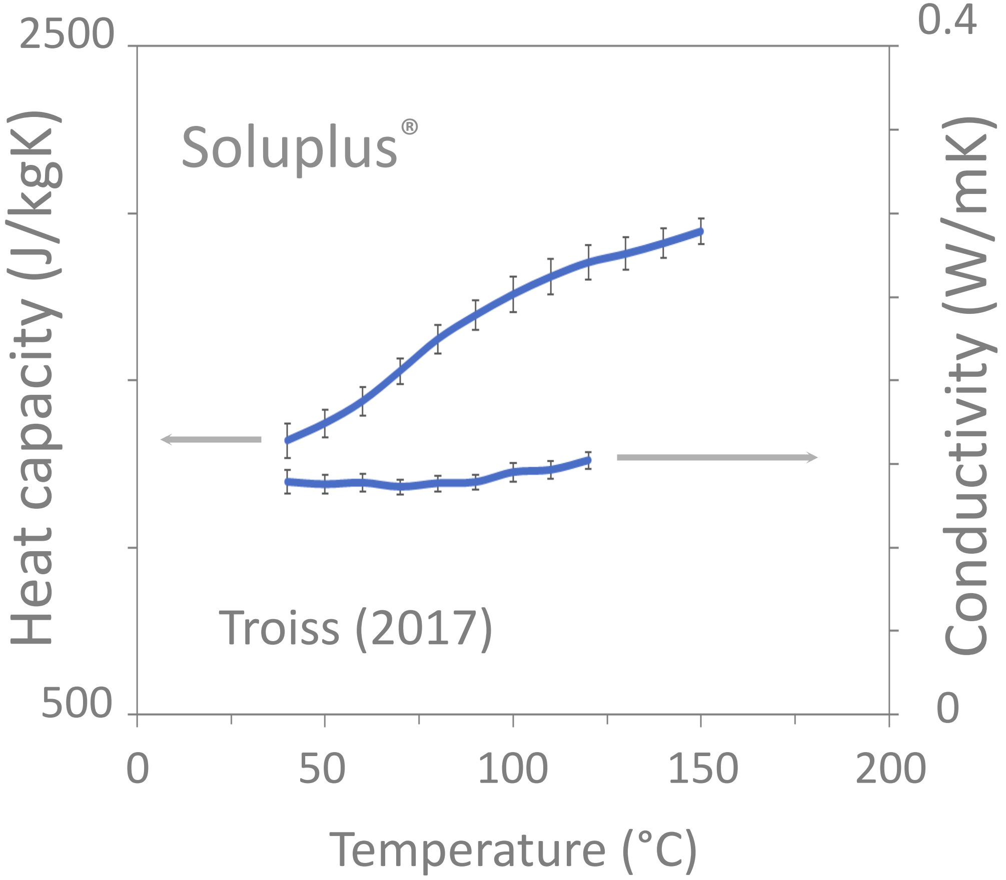
(Discs 5 mm)

Thermal Conductivity via DSC

2 Samples Thicknesses
mDSC and Math

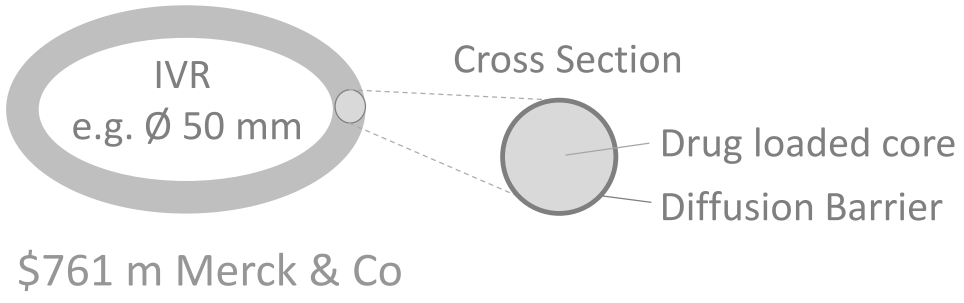
0.4 mm

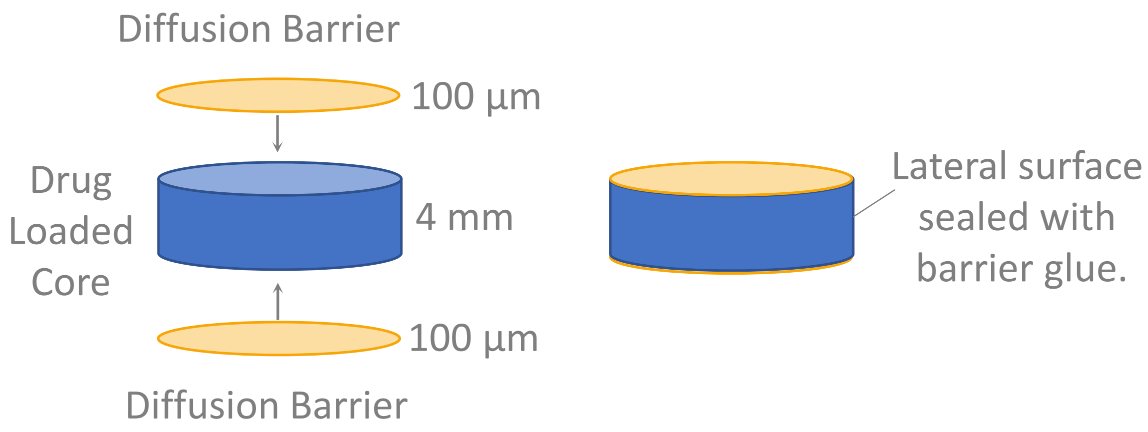
3 mm

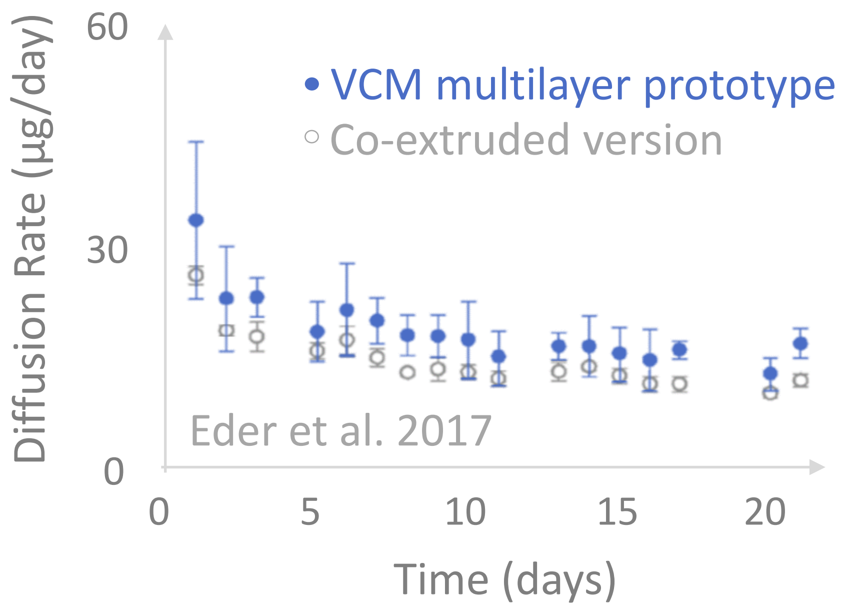


Formulation Screening (Multilayer Systems)

(Discs 5-25mm)

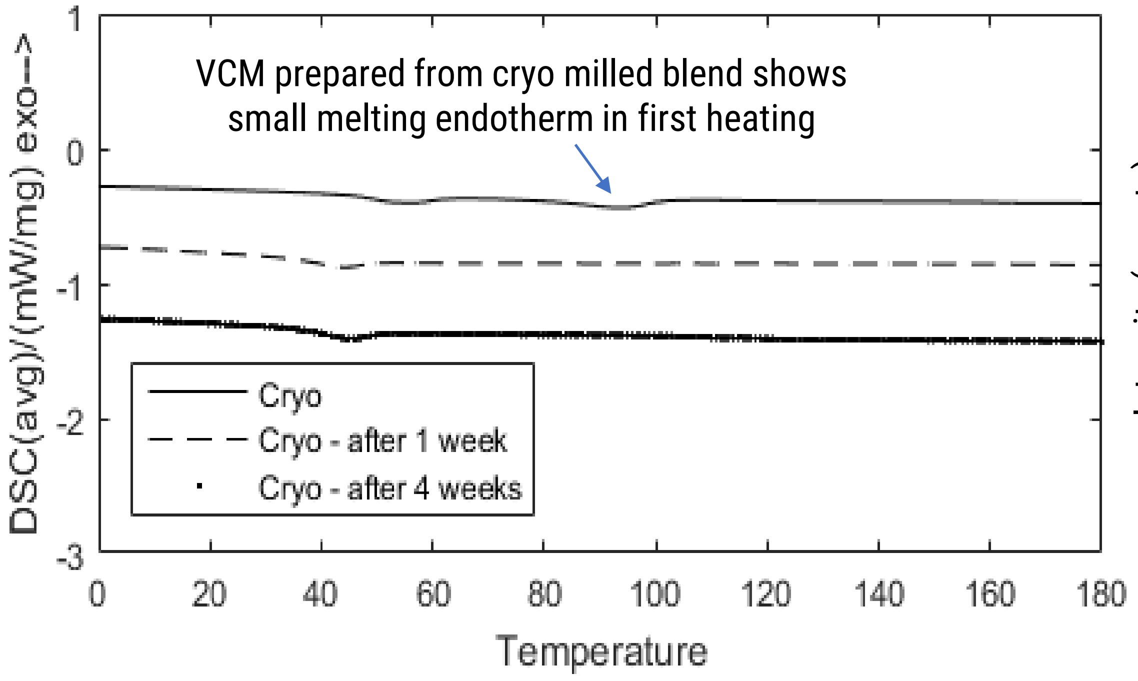


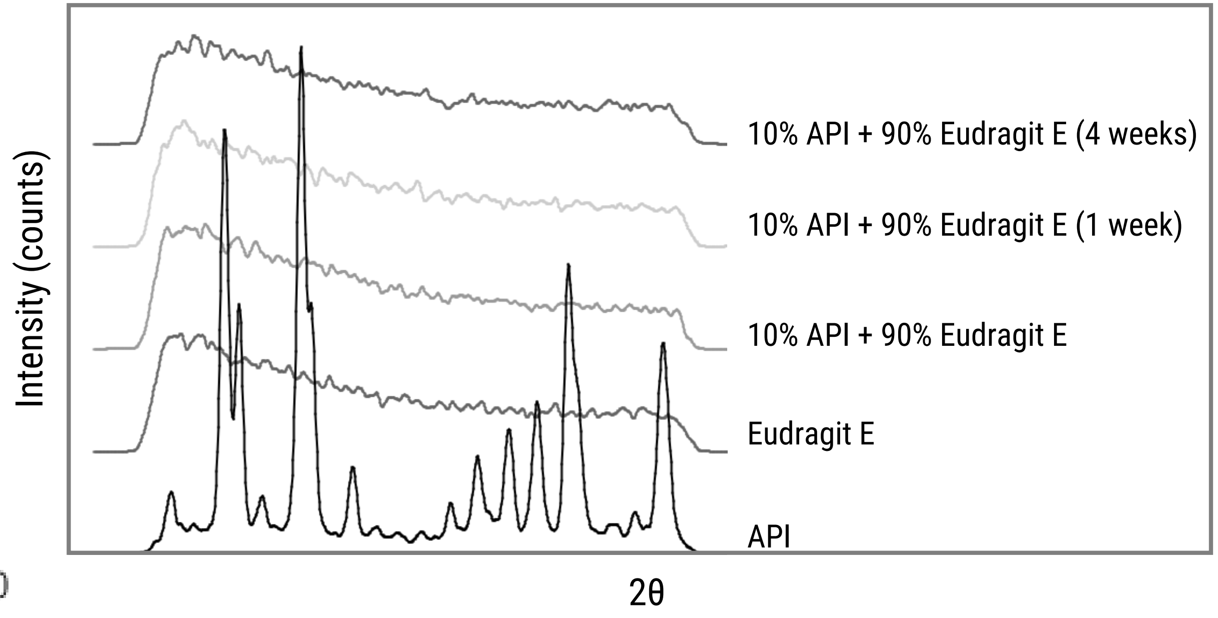




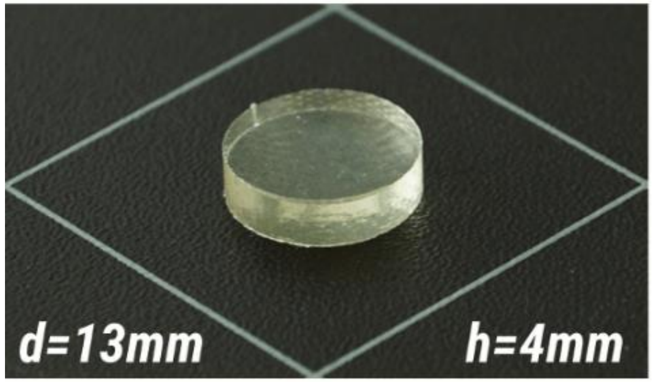
Formulation Screening (ASD Stability)

Testing of ASD stability after 1, respectively 4 weeks of storage at accelerated conditions (40°C and 75% RH) via DSC and WAXS

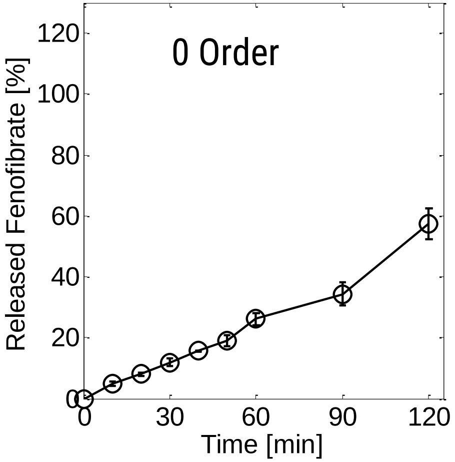


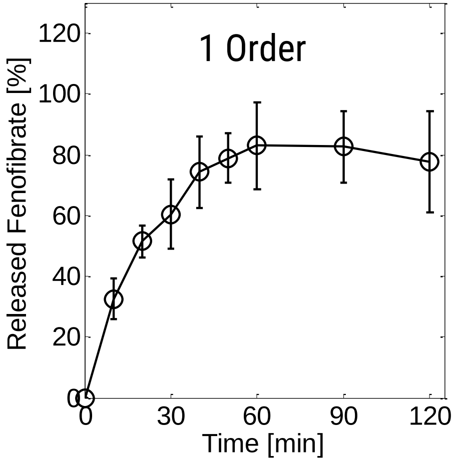


Formulation Screening (Dissolution Testing)



Tablets with defined geometries.





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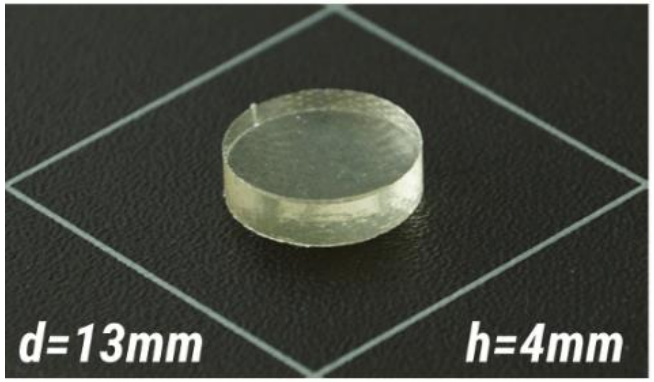

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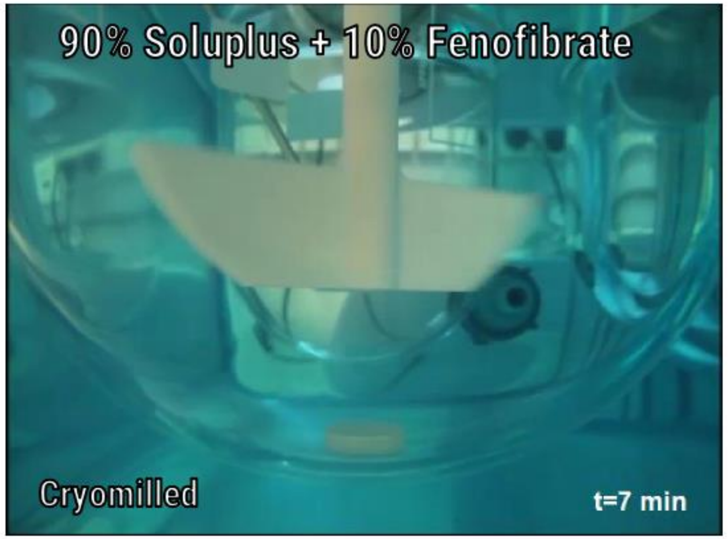
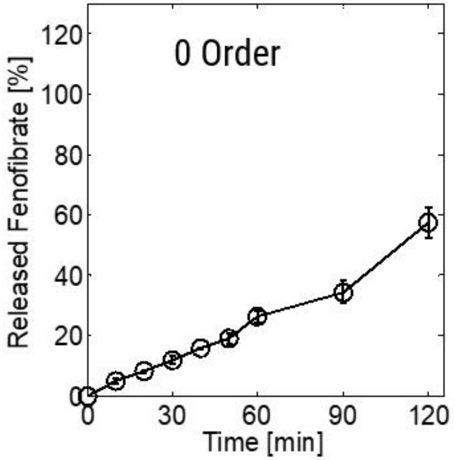
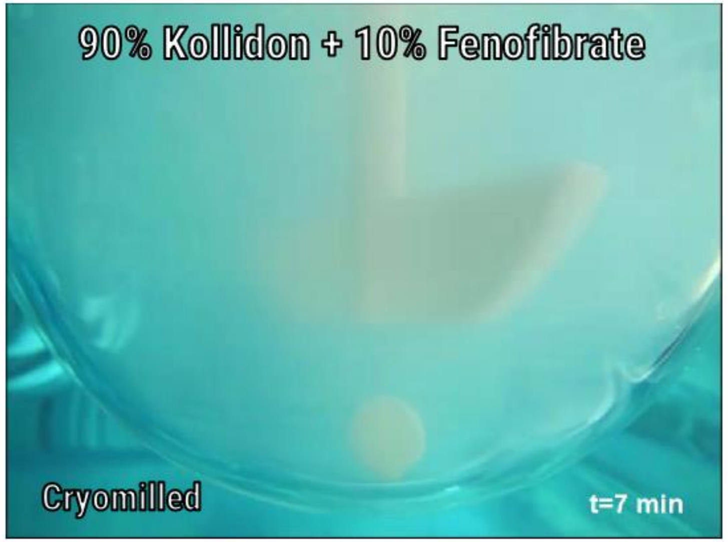
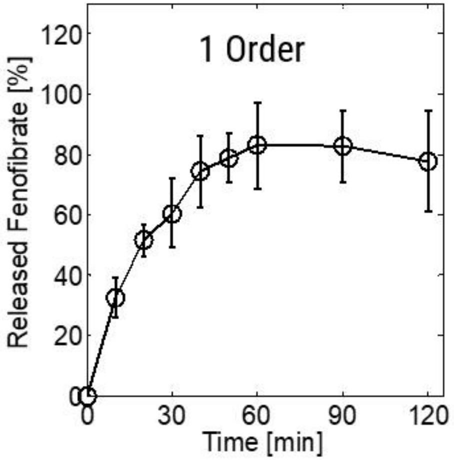


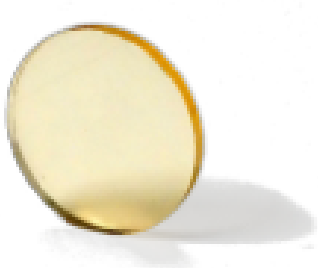






Applications

Hardness
Notch Impact Strength
Heat Capacity
Solubility
Surface Tension
Rheology



Spectroscopy
Dynamic Mechanical Analysis
Stability
Thermal Conductivity
Density
Diffusion
Dissolution

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NOW HERE

A little change can make a big difference.

Contact

meltprep.com

lets you focus on research

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