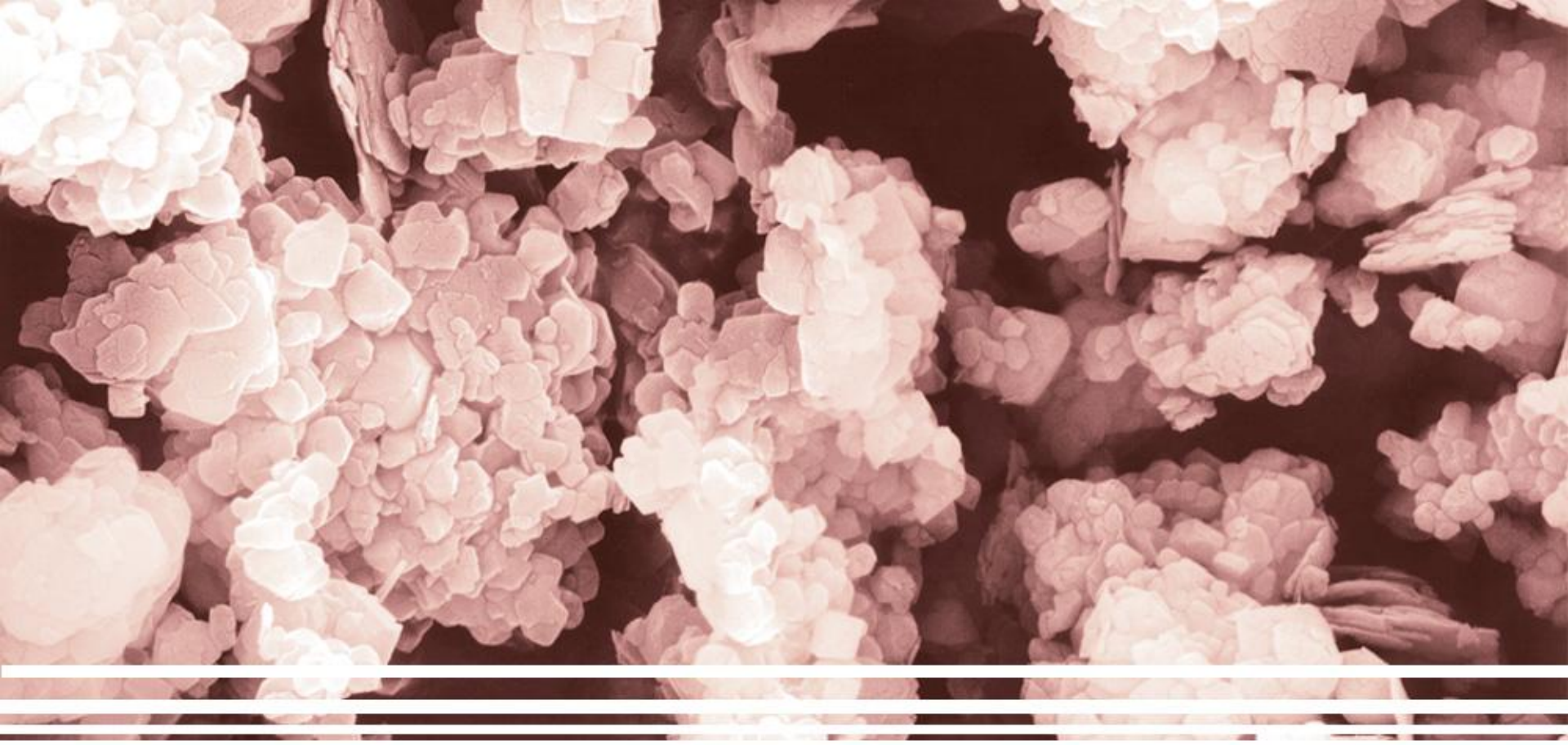

# Application Studies in Progress and New Applications

Author: Hubert Oggermueller

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We supply material for good ideas

# Contents

- Studies in progress or in set-up
- New applications

# Studies in Progress or in Set-up



- FKM bisphenolic cure, peroxide cure
- MT Carbon black N990 replacement (finalisation)
- UV-curing clear coats
- Emulsion paints - wall paints with improved cleanability and so on
- Anticorrosion coating water-based epoxy
- STP-adhesives using high strength polymers
- Thermoplastics
  PBT and PPS (finalisation), PP, PK (aliphatic ketone)
- Films
  - IR-reflective greenhouse film
  - Anti-blocking in LDPE

# FKM
# bisphenolic cure

STUDIES IN PROGRESS
OR IN SET-UP

NEW APPLICATIONS

Target Products: Silfit Z 91, Aktifit AM, Aktifit PF 111, Aktisil Q

- Competitors: Carbon Black N990, Wollastonite, precipitated Barium sulphate
- Toughest competitor: Wollastonite, surface treated with amino or epoxy silane
- Individual product performance strongly depending on polymer grade used
- Each product generates its particular property profile
- TP 2013080 is an experimental product (Silfit Z 91 treated with epoxy silane)

# NSE vs. amino-silane treated Wollastonite
# FKM high viscosity and low curative

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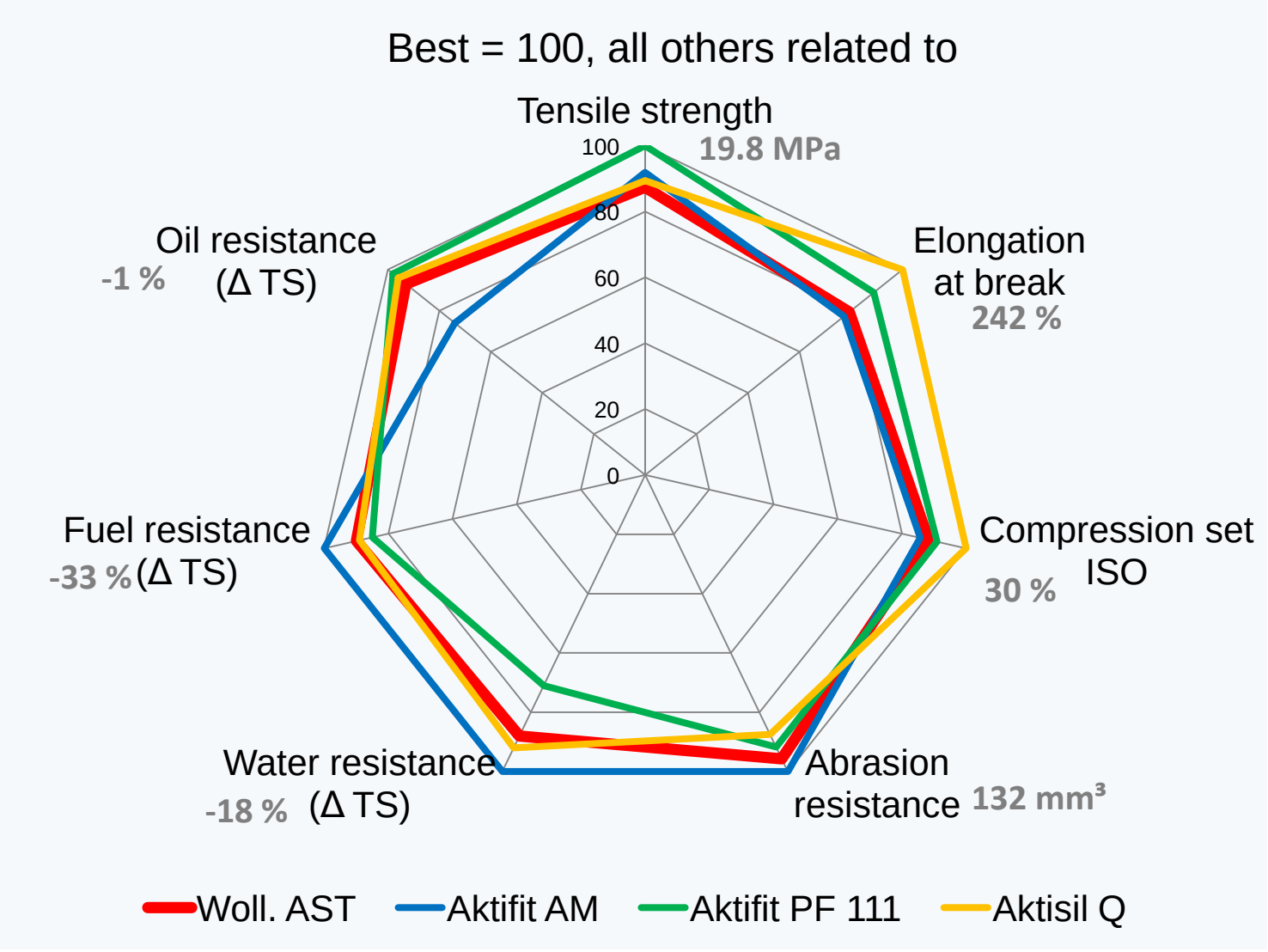
STUDIES IN PROGRESS OR IN SET-UP

FKM NSE VS. WOLLASTONITE

NEW APPLICATIONS



# NSE vs. amino-silane treated Wollastonite
# FKM low viscosity and high curative

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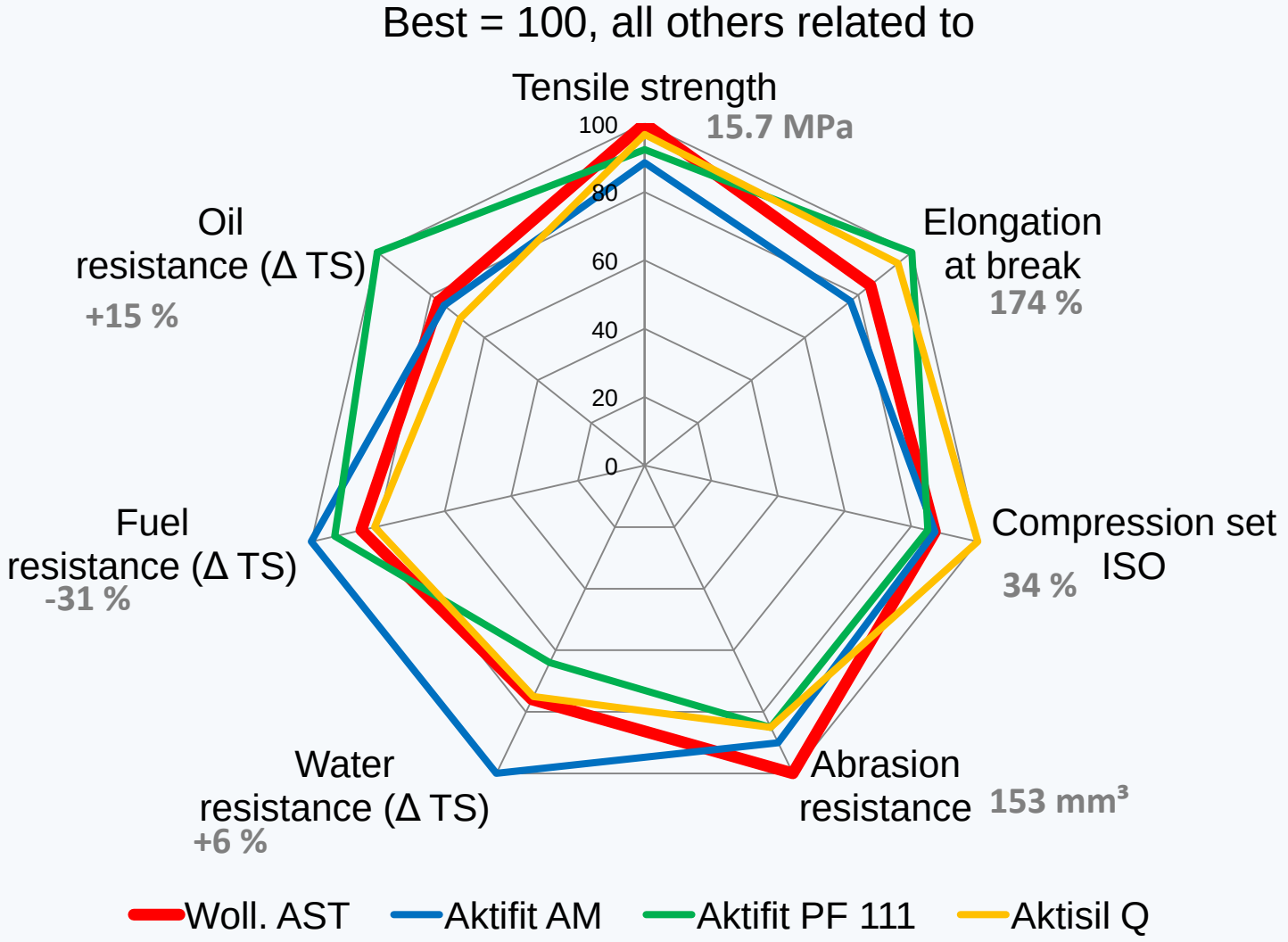
STUDIES IN PROGRESS OR IN SET-UP

FKM NSE VS. WOLLASTONITE

NEW APPLICATIONS



# NSE vs. epoxy-silane treated Wollastonite
# FKM high viscosity and low curative

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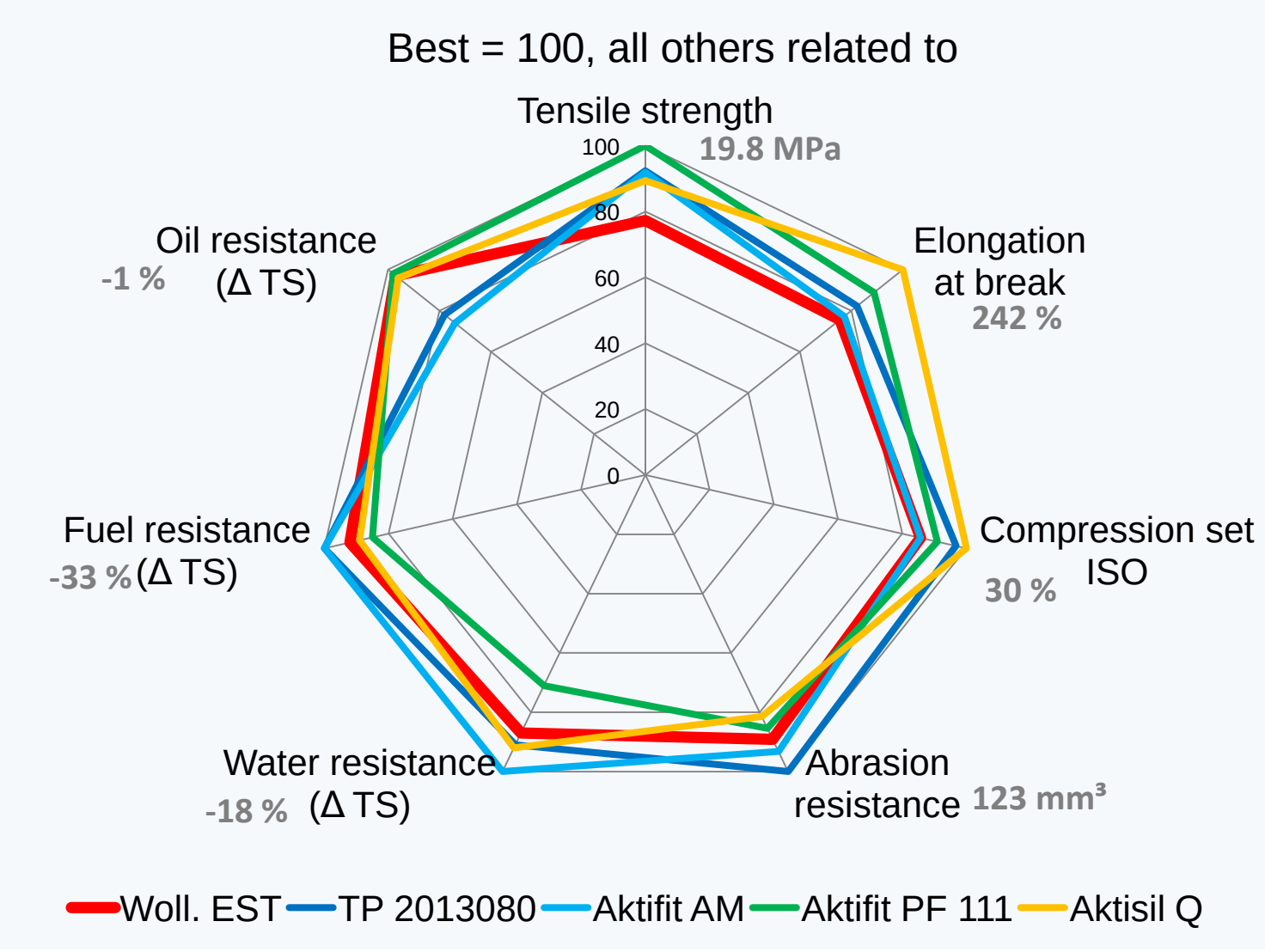
STUDIES IN PROGRESS OR IN SET-UP

FKM NSE VS. WOLLASTONITE

NEW APPLICATIONS



# NSE vs. epoxy-silane treated Wollastonite
## FKM low viscosity and high curative

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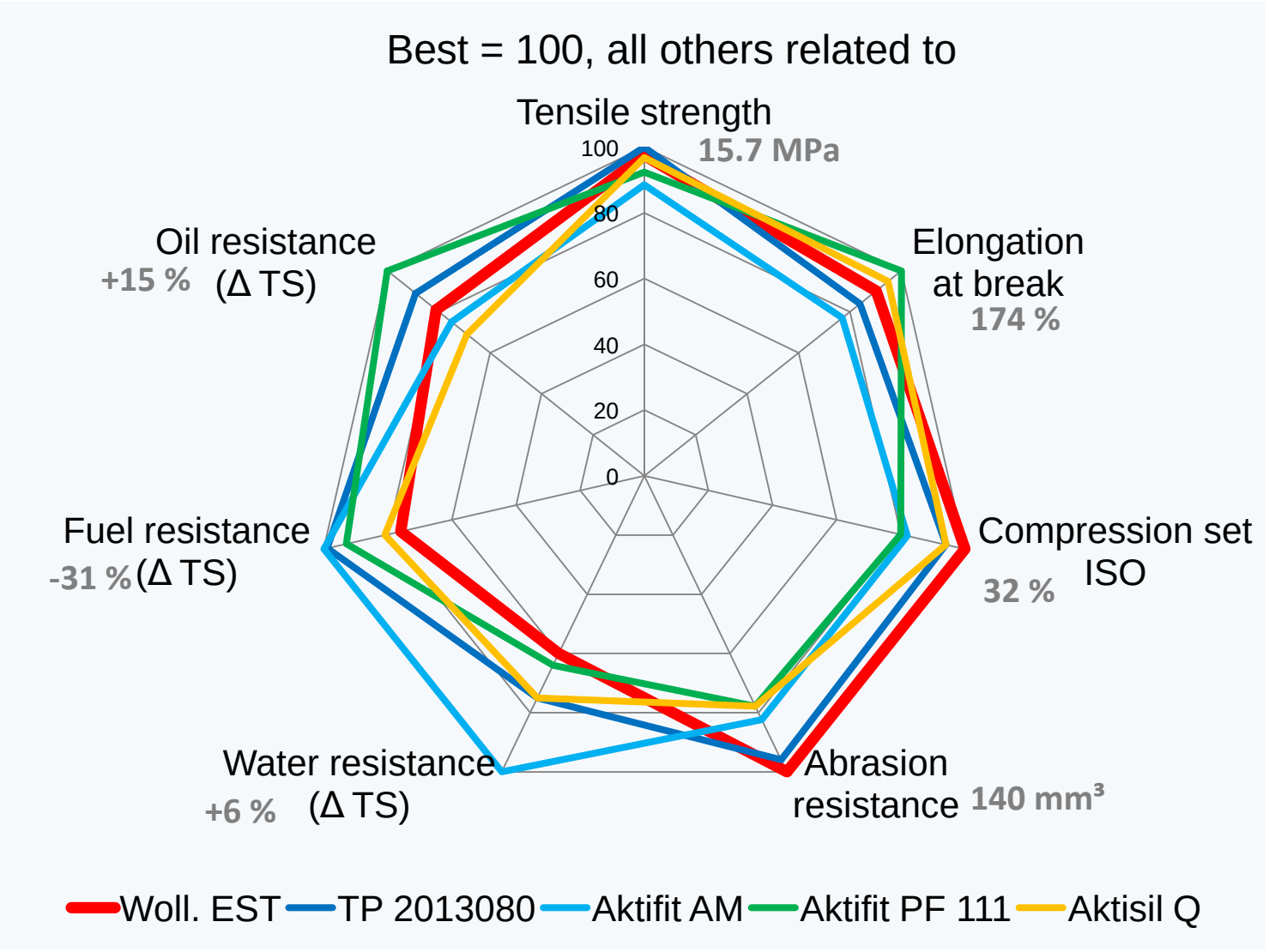
STUDIES IN PROGRESS OR IN SET-UP

FKM NSE VS. WOLLASTONITE

NEW APPLICATIONS



# NSE vs. Carbon Black N990
# FKM high viscosity and low curative

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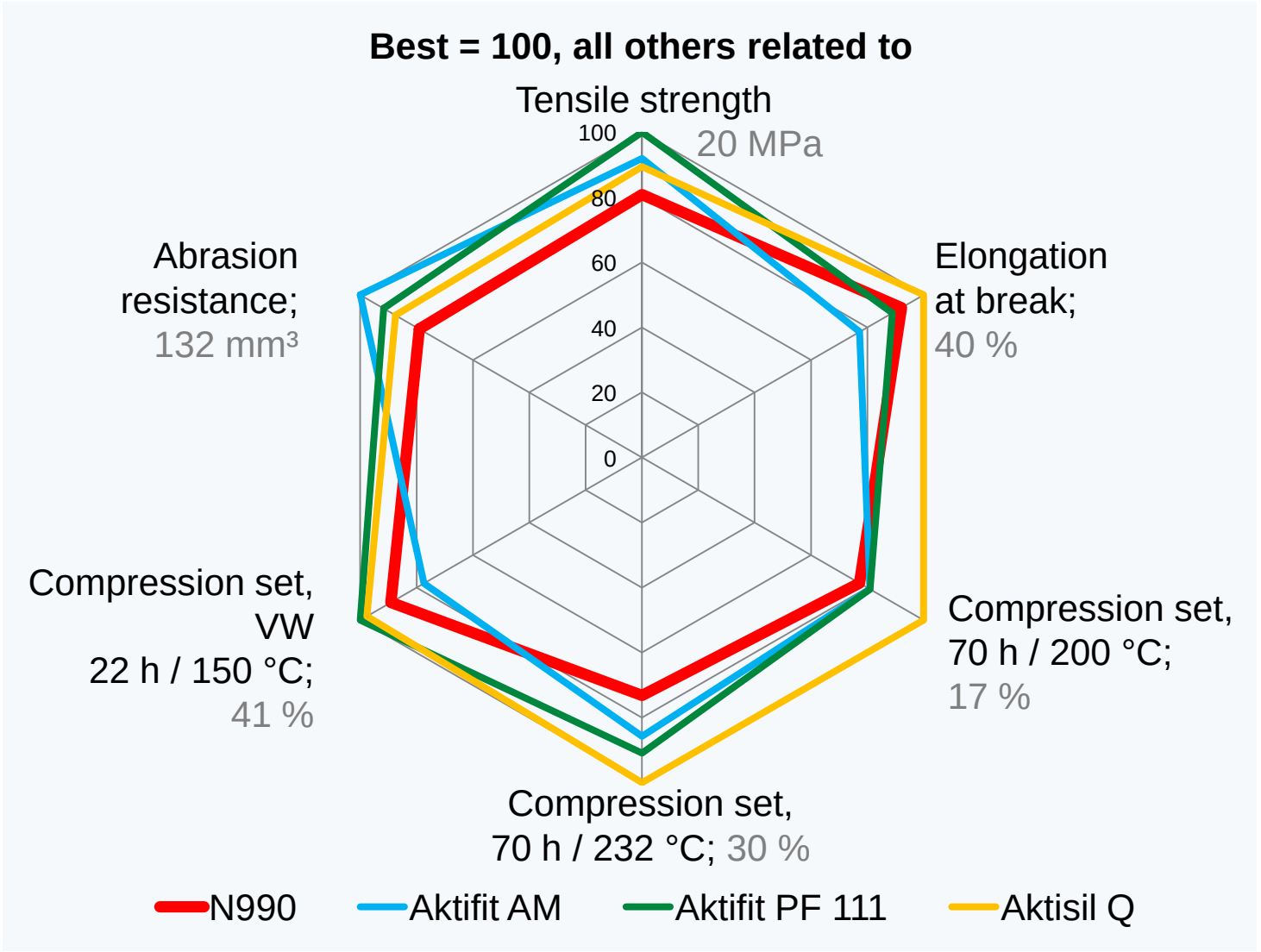
STUDIES IN PROGRESS OR IN SET-UP

CB N990 REPLACEMENT

NEW APPLICATIONS



# FKM bisphenolic cure

STUDIES IN PROGRESS OR IN SET-UP

FKM NSE VS. WOLLASTONITE

NEW APPLICATIONS

Target Products: Silfit Z 91, Aktifit AM, Aktifit PF 111, Aktisil Q

At the end of the day considering cost

↓

NSE products should additionally outperform surface treated wollastonite

non surface treated wollastonite

↓

Silfit Z 91 is the alternative

with improved
tensile strength and elongation at break,
water and fuel resistance
+ typically lower cost

# Carbon Black N990 Replacement

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STUDIES IN PROGRESS OR IN SET-UP

CB N990 REPLACEMENT

NEW APPLICATIONS

Target Products: Sillitin N 82, Sillitin Z 86, Silfit Z 91, Aktifit AM, Aktisil PF 216

- EPDM, i. e. air intake hose
- NBR, molding acc. ASTM D 2000
- FKM
- In the first two approaches formulation cost is the key driver, whereas in FKM additional performance is targeted

# New Applications

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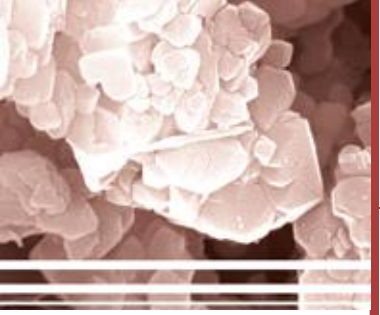
STUDIES IN PROGRESS OR IN SET-UP

CB N990 REPLACEMENT

NEW APPLICATIONS

- Antiblocking LDPE (Sillitin V 88, Aktifit PF 111)
- Hotmelt PUR-reactive (Aktifit VM)
- Polyurea Spray Coating (Aktisil AM replacing $TiO_2$ used as abrasion resistant filler)
- Acrylic Sink (Aktifit AM)
- STP Adhesives (Sillitin V 85, Silfit Z 91, Aktifit VM, Aktifit PF 111 mainly replacing $CaCO_3$)
- 1K PUR Sealant/Adhesive/Coating (isocyanate terminated oligomer; Aktifit PF 111 replacing rheology agent amide wax)
- Primer butyl rubber-based for corrosion protection tape for pipelines (Aktifit PF 111)
- Dispersion-based plaster with improved water/moisture resistance (Aktifit VM)
- Special industrial printing ink (Silfit Z 91 and Aktifit PF 111 replacing rheology agent silica)
- Powder coating (Silfit Z 91 partially replacing $TiO_2$)
- White masterbatch for thermoplastics (Silfit Z 91 partially replacing $TiO_2$)
- SEBS sealing compound for lid of bottles and jars with acidic (low pH) content (Aktifit VM)



# Thank you very much for your attention!