



Silicones for textile processing

Silicones in textile

Main advantages

- Excellent softness and slickness
- Very nice gloss
- Hydrophobic or hydrophilic
- Darkening/ deepening color
- High weatherability

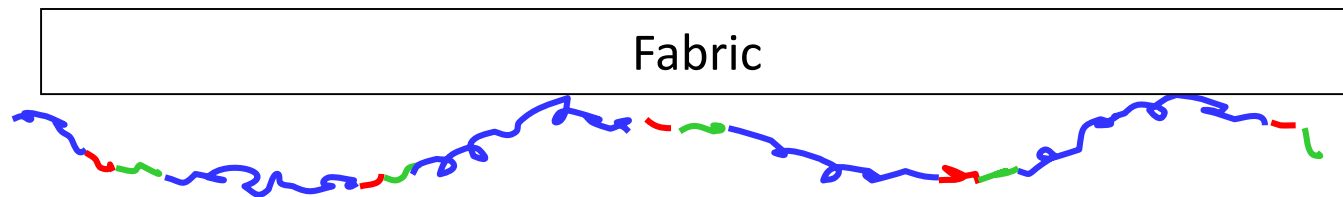
Mechanism of silicone softening

Affinity to textiles

- Silicone backbone distribution on fabric surface and inside fabric
- Flexible or pliable hand-feel vs. only surface slickness



Multifunctional softeners : Extremely high affinity with textiles



Treatment process

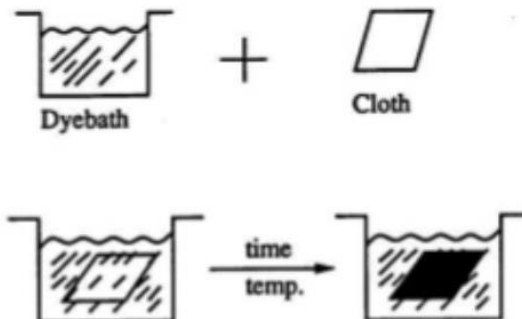
Main parameters influencing textile treatment and thus choice of product

- pH
- Temperature
- Shear
- Sensitivity to oxidization

These parameters are determined by the treatment process

Treatment process

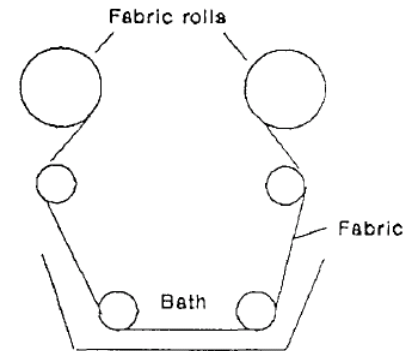
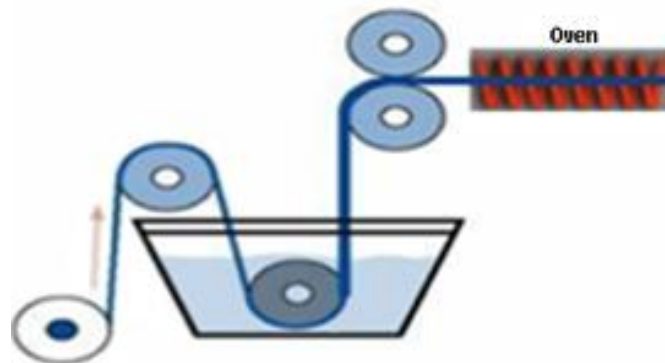
Exhaust bath



- Rather low temperatures
- No shear applied
- Large liquor to goods ratio
- Open bath more susceptible to oxidization

Treatment process

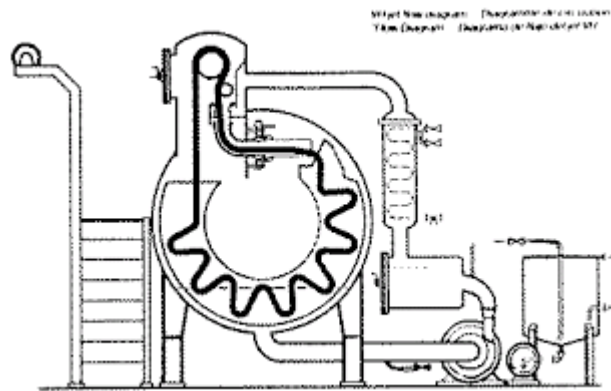
Padding



- Higher temperatures
- Solution subjected to shear
- Easier to apply chemicals with low affinity for the fiber

Treatment process

Jet dyeing



- Higher temperatures
- Solution subjected to high shear
- Less water and time consuming
- Easier to apply chemicals with low affinity for the fiber

BRB product range

- Amino silicone oils
- Amino silicone emulsions
- Hydrophilic silicones
- Antifoams

Standard amino silicone softeners

- Good slickness: silky and bouncy hand-feel
- Not hydrophilic
- Fabric yellowing (amine content) can be overcome:
 - Application in acidic conditions
 - Amino groups are quaternized to cationic species (stronger attraction for the negatively charged fabric)
 - Especially for cotton-based fabrics (anionic charges on surface)
 - Improves deposition, performance and durability of the softener coating

Amino silicone oils

Product	Type	End Cap	N % w/w	Viscosity cP
BRB 8373	Pendant	Reactive	0.37	1,000
BRB3163	Pendant	Reactive	0.33	1,500
BRB 4031	Pendant	Reactive	0.37	900
BRB 4234	Pendant	Reactive	0.52	1,100
BRB 4036	Pendant	Reactive	0.78	1,300
BRB 4535	Pendant	Reactive	0.16	3,000

- Standard primary / secondary amino silicone oils
- Easy to emulsify to micro and macro emulsions
- Higher viscosity gives good greasy hand

Amino silicone oils

Product	Softness	Whiteness	Absorbency	Repellency
BRB 8373	+	++	++	+++
BRB 3163	++	++	++	+++
BRB 4031	++	++	++	+++
BRB 4234	++	++	++	+++
BRB 4036	++	+	++	+++
BRB 4535	+++	+++	++	+++

- Standard to low yellowing
- Increase physical adsorption thus providing softening effect

Amino silicone emulsions

Product	Type	Active content	N % w/w	Viscosity cP
BRB AFE 674	Macro	52%	0.07	400
BRB AFE 675	Micro	43%	0.04	500

Product	Softness	Whiteness	Absorbency	Repellency
BRB AFE 674	+++	+++	++	+++
BRB AFE 675	+++	+++	++	++

- Based on reactive pendant amino silicone oil
- Macro-emulsions deliver the silicone to the surface (topcoat)
- Macro-emulsions provide a more slick hand and higher hydrophobicity
- Micro-emulsions provide better fiber penetration
- Micro-emulsions give better softness to the fabric

Hydrophilic silicones

- Superior softness
- No fabric yellowing
- Bulky, full and rich hand-feel
- Resistant to laundry washing
- Develops hydrophilicity

Hydrophilic silicones

Product	Fabric	Type	Active content	Viscosity cP
BRB SQO 100	Natural	Fluid	92 %	3,000
BRB SQE 60	Natural	Micro emulsion	70 %	2,000
BRB SQO 80	Natural	Concentrate	77 %	2,000

- Current range mostly suited for natural fabrics
- BRB SQO 100 easy to emulsify into micro or macro-emulsions
- SQO 80 readily dispersible in water
- BRB SQE 60 is ready to use
- Compatible with organic softeners
- Suitable for all application methods (exhaust, padding or spray)

Hydrophilic silicones

Product	Softness			Hydrophilicity		
	Cotton knit	Cotton towel	Poly ester	Cotton knit	Cotton towel	Poly ester
BRB SQO 100	+++	++++	++	++++	+++	++
BRB SQE 60	+++	++++	++	++++	+++	++
BRB SQO 80	++++	++++	++	+++	++++	+

- Superior hydrophilicity
- Excellent softness to all cellulosic fabrics and blends
- SQO 100/ SQE 60 best suited for cotton knit
- SQO 80 best suited for towels
- Universal softener to various fabrics
- Durable to several laundry home washes, especially on cotton, linen and rayon
- Quickly absorbs water and perspiration

Antifoam

New Product	Type	Active content	Viscosity cP
BRB Snapsil SP 20	Macro emulsion	30%	1,500

- High efficiency in surfactant-rich systems
- Excellent foam control at temperatures up to 95°C
- Long durability in acid and alkaline conditions
- Rapid foam knockdown
- Easy dispersion in all foam systems & hard water
- No oily spots or lumps when diluted with water
- Compatibility with a variety of surfactant concentrates



Powerful like a major, flexible like a formulator

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