
AMBITION / FLEXIBILITY / PASSION / INNOVATION
BRB
Silicones for Home and Car Care
BRB International B.V.
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Version 3.1
Silicones

What are we going to discuss?

Car Care Surface Care

Wash and Rinse Aid
Exterior Car polish
Windscreen & glass cleaners
Tire/Rim Care
Interior Trim/Dashboard
Exterior Trim
Leather conditioners

Home Care Surface Care

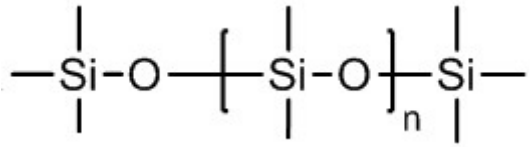
Furniture and wood polishes
Floor polish
Metal/stainless steel polish
Shoe & Leather care
Glass cleaners
Carpet cleaning products
Tile grout sealers
Antistatic solutions

Home Care Laundry Care

Laundry detergents additives
Fabric softeners additives
Dry cleaning

Characteristics of silicones

CHARACTERISTIC	BENEFIT
Low surface tension	Spreads on most surfaces
Strong Si-O & Si-C bonds	UV, oxidative, thermal & chemical stability
High R.I:(1.375 -1.403)	Gloss
Low intermolecular forces (high chain flexibility)	Lubricity & high permeability, low surface friction
Methyl groups	Water repellency
Low Glass Transition	Liquids at high molecular weight



Why use silicones in Car&Home Care?

- Ease of application - lubricant
- Polish cleaning ability - increase surface wettability
- Ease of polishing - lubricant, less effort to polish
- Streakability - reduces “streaking” of polish

- Gloss / Shine – high Refractive Index
- Increase colour intensity (depth of gloss)
- Surface protection - durability & detergent resistance
- Water repellency – long lasting
- Surface smoothness/slip – more difficult for dirt to adhere

What is a polish?

Polish = a temporary coating that enhances and protects the substrate to which it is applied.

Enhances by cleaning and increasing gloss/color intensity.

Protects by depositing a barrier film that repels water and gives a degree of dirt repellency.

A polish does not have to come in a form of a paste or gel. It can also be in the form of a sprayable liquid.

Car Care – Surface Care

- Wash & Rinse Aids
- Exterior Polishes & Waxes
- Windscreen & Glass Cleaners
- Tire/Rim Care
- Interior Trim/Dashboard Care
- Exterior Trim Care
- Leather Care

Home Care – Surface Care

- Furniture and wood polishes
- Floor polish
- Metal/stainless steel polish
- Shoe & Leather care
- Glass cleaners
- Carpet cleaning products
- Tile grout sealers
- Antistatic solutions

Home&Car Care - consumer requirements

- **Ease of use**
- **Enhancement of color, gloss**
- **Lasting protection**
- Water repellency
- **Dirt repellency**
- Self-cleaning or **easy re-cleaning** ability

Silicones for the Home&Car Care Industry

Silicone Oils

BRB Silicone Oils 50, 350, 1000, 12.500, 60.000 cSt

Silicone Emulsions

BRB Sempure 35, BRB Sempure 60, BRB Sempure 66
BRB Sempure HV 6500, BRB Sempure 1997

Aminofunctional Oils

BRB SF 230 NEW, BRB SF 240, BRB SF 315 NEW, BRB SF 430

Aminofunctional Emulsions

BRB Sempure 3733, BRB Sempure 135, BRB Sempure 152 NEW, BRB Sempure 230

Specialty Emulsions

BRB Sempure 330 NEW, BRB Sempure 422 NEW

Silicones for the Home&Car Care Industry - continued

Volatile Silicones

BRB CM 40, BRB CM 50, BRB Silicone oil 0,65 cst

Silicone Glycols

BRB 526, BRB 6373, BRB 431

Silicone resins

BRB TMS, BRB TMS-50I, BRB TMS-50C

Paintable Silicones

BRB Sempure 5332, BRB Alkyl Aryl Fluid

Silicone antifoams

BRB Snapsil TG 10/20/30, BRB Snapsil RE 10/20

Silicone oils & emulsions - range

BRB Sempure 35 & 60
35% or 60% non-ionic emulsion of mid viscosity PDMS for general purpose polish formulations.

BRB Sempure 66
60% non-ionic emulsion of low viscosity PDMS for general purpose polish formulations. Great spreadability and ease of use.

BRB Sempure HV 6500
60% non-ionic emulsion of high & low viscosity PDMS blend for premium polish formulations. Optimized balance between ease of application, spreading, gloss & durability.

BRB Sempure 1997
55% non-ionic emulsion of high viscosity PDMS for superior shine and long durability

BRB Silicone oils 50, 350, 1.000, 12.500, 60.000 cSt
For customers who want to emulsify by themselves and fine tune their own emulsions

Silicone oils & emulsions - benefits

- **Ease of application** – streak & smear resistant
- **Improved cleaning** - low surface tension, increases surface wetting.
- **Depth of Gloss / Color** – high Refractive Index
- **Water repellency** – presence of methyl groups promotes water beading
- **Slip** - gives a smooth/lower friction surface

Silicone oils & emulsions – applications

- Rubber, vinyl, plastic and leather protectants
- Furniture cleaners and protectants
- Hard surface cleaners and protectants
- Spray and wipe polishes (quick detailers)
- Car shampoos
- Paint polishes, waxes and sealants

Dosage of silicone emulsion(s) in the formulation depends on the type of emulsion and the type of formulation. It can vary from 5% to 35%.

Dosage of silicone oil(s) varies from 1% to 15%.

Silicone Oils - formulating

Formulation properties

Oil soluble, not water soluble
Medium viscosity: easier application & emulsification
Higher viscosity: better protection & conditioning
Defoaming properties

Can be formulated into

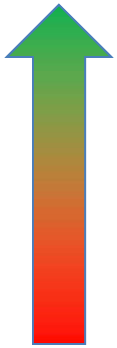
Solvent in water emulsions, normally use 50-1000 cSt PDMS

Water in solvent - can include high visc fluids

Polish formulations - use a combination of high/medium viscosity fluids to optimize benefits

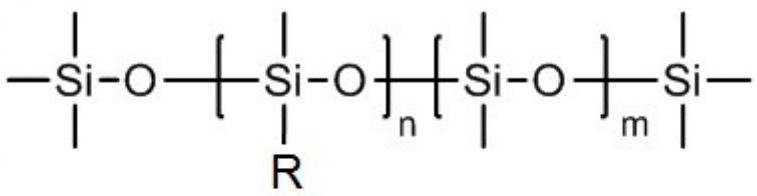
Viscosity	100 / 350	1000	12.500 / 60.000
Ratio	3	1	1
Benefit	Ease of use	Gloss	Durability

Silicone Oils – optimization of properties

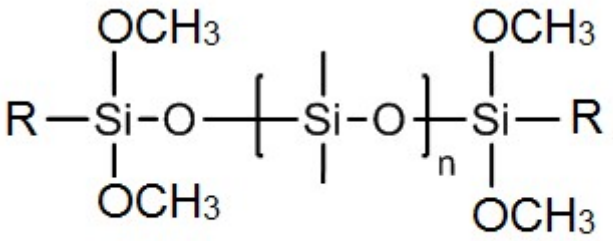
Viscosity	Gloss	Durability / Protection	Wetting / Spreading	Overall ease of use
PDMS(50cs) PDMS(350cs) PDMS(1000cs) PDMS(12500cs) PDMS(60000cs)				

Aminofunctional silicones - properties

- Dimethicone backbone grafted with amino groups
- Polar amine groups effectively anchor the product to substrate -> physical attraction to negatively charged surfaces
- Reactive grades crosslink to form a polymer film with high detergent resistance and effective protection



R = $CH_2CH_2CH_2NHCH_2CH_2NH_2$



R = $CH_2CH_2CH_2NHCH_2CH_2NH_2$

Aminofunctional oils - range

		Viscosity at 25°C (cSt)	Nitrogen content (%w/w)
BRB SF 230		3000	0.2
BRB SF 240		4000	0.2
BRB SF 315		1500	0.3
BRB SF 430		3000	0.4

Aminofunctional oils – properties

Characteristic		
Viscosity	Low	High
Amine Content	Low	High
Durability		
Hydrophobicity		
Gloss		

Aminofunctional emulsions - range

BRB Sempure 3733
40% cationic macro emulsion for extended durability and slip.

BRB Sempure 135
35% non-ionic micro emulsion for extended durability and good hydrophobic effect. Allows to formulate transparent products.

BRB Sempure 152
50% non-ionic macro emulsion of aminofunctional silicone polymer. For extraordinary softness.

BRB Sempure 230
30% non-ionic micro emulsion of silicone quaternium polymer. Film former. Allows to formulate transparent products.

BRB Sempure 135 – for Car Care

Properties

- 35% active, micro emulsion of aminofunctional silicone
- Specifically developed for use in transparent, aqueous, hard surface cleaning & conditioning products
- Forms a protective layer on the treated surface to provide water repellency, increased gloss and durable protection.

Benefits

- Easy to formulate into aqueous systems
- Remains transparent in most detergent formulations
- Beads-up water on surfaces
- Small particle size preventing residual smearing on the glass
- Imparts water repellency, increased gloss and durable protection
- Good slippery effect

Typical dosage: 1,0-10%.

BRB Sempure 152 – new for Car & Home Care

Properties

- 52% active, macro-emulsion of aminofunctional silicone
- Specifically developed for soft touch effect
- Little to no yellowing on fabrics

Benefits

- Provides outstanding softness to fabric and leather
- Provides good hydrophobic effect, increased gloss and durable protection on hard surfaces
- Compatible with esterquats
- Easy to formulate into aqueous blends

Typical dosage: 1-5%.

BRB Sempure 230 – for Home Care

Properties

- 30% active, micro-emulsion of silicone quaternium polymer
- Specifically developed for cleaning formulations
- Offers shine and protection to ceramics, glass and painted surfaces

Benefits

- Hydrophobising film former
- Reduces formation of streaks and scale on tiles and glass
- Increases the durability of water based polishes
- Easy to formulate into aqueous blends
- Can be formulated in transparent products
- Can also be used in car care formulations

Typical dosage: 0,5-2,5%.

Aminofunctional Silicones - benefits

- **Ease of application -** streak resistant
- **Depth of Gloss / Color -** high Refractive Index
- **Strong hydrophobic effect -** water beading
- **Durability -** semi-permanent bonding to the substrate
- **Slip -** give a smooth/lower friction surface
- **Dirt repellency/easy cleaning** – due to smooth, hydrophobic surface

Aminofunctional Silicones - applications

- Rubber, vinyl, plastic and leather protectants – in combination with base silicone emulsions, dosage up to 5%
- Furniture and hard surface protectants – dosage up to 3%
- Glass cleaners and windscreen washers – dosage up to 1%
- Spray and wipe polishes (quick detailers) – in combination with base silicone emulsions, dosage up to 3%
- Spray waxes and sealants – Sempure 135, dosage up to 10%
- Car shampoos – Sempure 135, dosage up to 5%
- Paint polishes and waxes – dosage up to 10%

Specialty emulsions

BRB Sempure 330 - is a 30% active emulsion of a high molecular weight silicone urethane resin. It is used to improve water repellency, dirt resistance, gloss and softness in various formulations of hard surface and leather dressings. It provides long-lasting protection to a treated surface.

BRB Sempure 422 - is a 22% active microemulsion of phenyl functional silicone and a quaternary ammonium functional silicone. It combines the gloss-boosting effect of phenyl-modified silicone with film-forming properties of silicone quat allowing formulation of transparent products with unique properties. It is an alternative to classic gloss increasing emulsions of high viscosity silicone oils.

BRB Sempure 330

Properties

- A 30% active emulsion of a high molecular weight silicone urethane resin
- Non-ionic emulsifier system
- Specifically developed for lasting protection

Benefits

- Hydrophobising film former
- Very good durability and resistance to elements
- Gloss improvement and streak free finish
- Especially suitable for leather protection
- Easy to formulate into aqueous blends

Typical dosage: 0,5-5,0%.

BRB Sempure 422

Properties

- 22% active, micro-emulsion of phenyl modified silicone and silicone quaternium polymer
- Non-ionic emulsifier system
- Preservative free

Benefits

- Imparts excellent gloss enhancing benefits
- Imparts slickness to a treated surface
- Improves wipe-off with „no streak" effect
- Easy to formulate into aqueous blends
- Can be formulated in transparent products

Typical dosage: 1,0-5,0%.

Volatile Fluids - range

BRB CM 50
Cyclopentasiloxane, D5

BRB CM 40
Cyclotetrasiloxane, D4

BRB Silicone oil 0.65cSt
Hexamethyldisiloxane

Volatile Fluids - benefits

- Oil and alcohol solubility
- Volatile
- Non-greasy
- Good spreadability/wetting
- Leaves no residue
- Colorless/odorless
- Safe for most common surfaces

Volatile Fluids - applications

- Polishes - replace solvents as carriers (for „solventless” solvent formulations)
- Rinse and drying aids
- Car waxes and sealants

Silicone Glycols - range

BRB 526

PEG-12 Dimethicone

Emulsifier Si/W
HLB 13

BRB 6373

Cyclopentasiloxane (and) PEG/PPG-18/18 Dimethicone

Emulsifier W/Si
HLB 2

BRB 431

Modified trisiloxane

Superspreader, surface tension depressant

BRB 526 – classic silicone glycol

Properties

- Silicone surfactant based on ethoxylated dimethicone
- Good wetting and surface tension reduction
- Water soluble

Benefits

- Improves spreading
- Antifogging and sheeting properties
- Reduces surface tension
- Can also be used in car care formulations

BRB 431 – trisiloxane superspreader

Properties

- Superspreading surfactant based on trisiloxane ethoxylate
- Outstanding surface tension reduction
- Water soluble

Benefits

- Improves spray coverage
- Excellent penetration, antifogging and sheeting properties
- Reduces surface tension already at very low level (0,1%)
- Can also be used in car care formulations

Silicone Glycols - benefits

- Foam booster / foam quality
- Water/alcohol dispersible
- Spreading, wetting agents
- Antifogging
- Emulsifiers, dispersing agents

Silicone Glycols - applications

- Designed for formulating stable water in silicone emulsions or emulsions in which volatile silicones make up the oil phase. Emulsions based on silicone glycols are less greasy than typical water in oil products.
- Cleaners with antifogging properties
- Spreading additives in sprayable formulations

Silicone Resins - range

BRB TMS

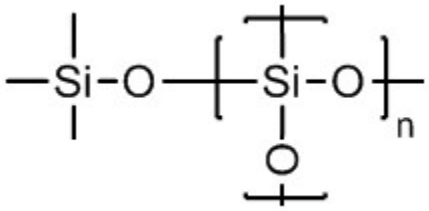
Trimethylsiloxysilicate in powder form

BRB TMS-50I

50% dispersion of Trimethylsiloxysilicate in Isododecane

BRB TMS-50C

50% dispersion of Trimethylsiloxysilicate in Cyclopentasiloxane



Silicone Resins- benefits

- Excellent film formers
- Wash-off and rub-off resistant
- Extraordinary water resistance
- Great durability

Silicone Resins - applications

- Leather protectants (shoes, upholstery, etc.)
- Exterior plastic and vinyl protectants
- Car waxes and sealants

Paintable Silicones

These silicones are capable of being over-painted. They do not require unusual or extraordinary cleaning operations prior to painting, plating or bonding. They are used in professional polishes in car body shops or custom paint shops.

BRB Sempure 5332
Paintable 50% non-ionic emulsion of alkyl aryl silicone

BRB Alkyl Aryl Fluid
For customers who want to emulsify by themselves

Also volatile fluids are over-paintable:

BRB CM 40
BRB CM 50
BRB Silicone oil 0.65 cst

Silicone Antifoams

BRB Snapsil TG 10, 20, 30

- Standard grade, silicone based antifoam emulsions
- Suitable for various home care applications
- Suitable for products with high salinity
- Good high temperature performance
- TG 10 : 14% active content
- TG 20 : 22% active content
- TG 30 : 30% active content

BRB Snapsil RE 10, 20

- Alkali resistant, silicone based antifoam emulsions
- Specifically developed for technical applications and to be used in a broad pH range
- Good high temperature performance
- Excellent knockdown as well as defoaming performance
- RE 10 : 15 % active content
- RE 20 : 30 % active content

Car Care - Product selector guide

	Water based	Solvent based	Wash and Rinse Aid	Exterior car polish/ conditioner	Glass Care	Tire/ Rim Care	Interior Trim/ Dashboard	Leather
Silicone oils		✓	X	X		X	X	X
Silicone emulsions	✓		X	X		X	X	X
Aminofunctional silicones (oils/emulsions)	✓	✓	X	X	X	X	X	
Alkyl Aryl silicones	✓	✓		X			X	
Volatile silicones		✓	X			X		
Silicone glycols	✓	✓			X		X	X

Home care - product selector guide

Product	Water based	Solvent based	Leather Care	Furniture Care	Hard Surface Care	Glass Care
Silicone oils		✓	X	X		
Silicone emulsions	✓		X	X	X	X
Volatile silicones		✓	X	X		
Silicone glycols	✓	✓		X	X	X
Aminofunctional silicones (oils/emulsions)	✓	✓	X	X	X	X
Silicone resins		✓	X	X		
Antifoams	✓				X	

Customer support

Formulation support

We can provide examples of formulations using our silicones

Ready-to-use products

BRB PTFE Clean & Shine

Polish for 2nd hand cars (abrasive)

BRB New Car Polish

Polish for new cars (mild)

BRB Glass Water Repellant

Windscreen polish

BRB Cockpit Shine

Dashboard polish

Laundry Care – product range

Silicone antifoams

BRB Snapsil TG 10/20/30
BRB Snapsil RE 10/20
BRB Snapsil 20LD

Silicone Glycols

BRB 526

Silicone Emulsions

BRB Sempure 35, BRB Sempure 60
BRB Sempure 3733
BRB Sempure 270

Volatile Silicones

BRB CM 50

Laundry Care – specific applications

Silicone antifoams

Foam control in liquid detergents & fabric conditioners

Antifoam systems for powder detergents (post-addition or spray on)

Silicone Glycols

Wetting agent, ease of ironing benefit in liquid laundry tablets

Silicone Emulsions

Softness, anti-wrinkle, ease of ironing and water absorbency for fabric softeners

Volatile Silicones

Dry cleaning solvent

BRB Snapsil 20LD – for Laundry Care

Properties

- 20% active, high performance, silicone based antifoam emulsion
- Optimized for use in surfactant-rich formulations and environments, as encountered in the detergent and textile industries

Benefits

- Effective and durable over a wide pH range
- Outstanding reliability and versatility
- Suitable for products with high salinity
- Available in easy-to-use emulsion form
- Good high temperature performance
- Excellent knockdown as well as defoaming performance.

BRB Sempure 270 – for Laundry Care

Properties

- 70% active, micro-emulsion of quat polyether terpolymer
- Specifically developed for fabric treatment
- Recommended for use in rinse-cycle laundry products
- Compatible with organic softeners (e.g. esterquats)
- Typical formulation contains 2.5% BRB Sempure 270 and 15% organics
- Post-addition with moderate agitation

Benefits

- Deposits onto fabric from the rinse cycle
- Enhance softness (silicones have a silky feel attenuating the 'greasier' organics)
- Promotes ease ironing
- Improve water absorbency

Laundry Care - product selector guide

Product	Liquid laundry detergent	Liquid laundry tablets	Powder laundry detergents	Fabric softeners	Dry Cleaning
BRB Snapsil TG 10, 20, 30	X			X	
BRB Snapsil RE 10, 20	X				
BRB Snapsil 20LD	X				
BRB 526		X			
BRB Sempure 35 & 60				X	
BRB Sempure 3733 & 270				X	
BRB CM 50					X


AMBITION / FLEXIBILITY / PASSION / INNOVATION
BRB
Powerful like a major,
flexible like a formulator
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