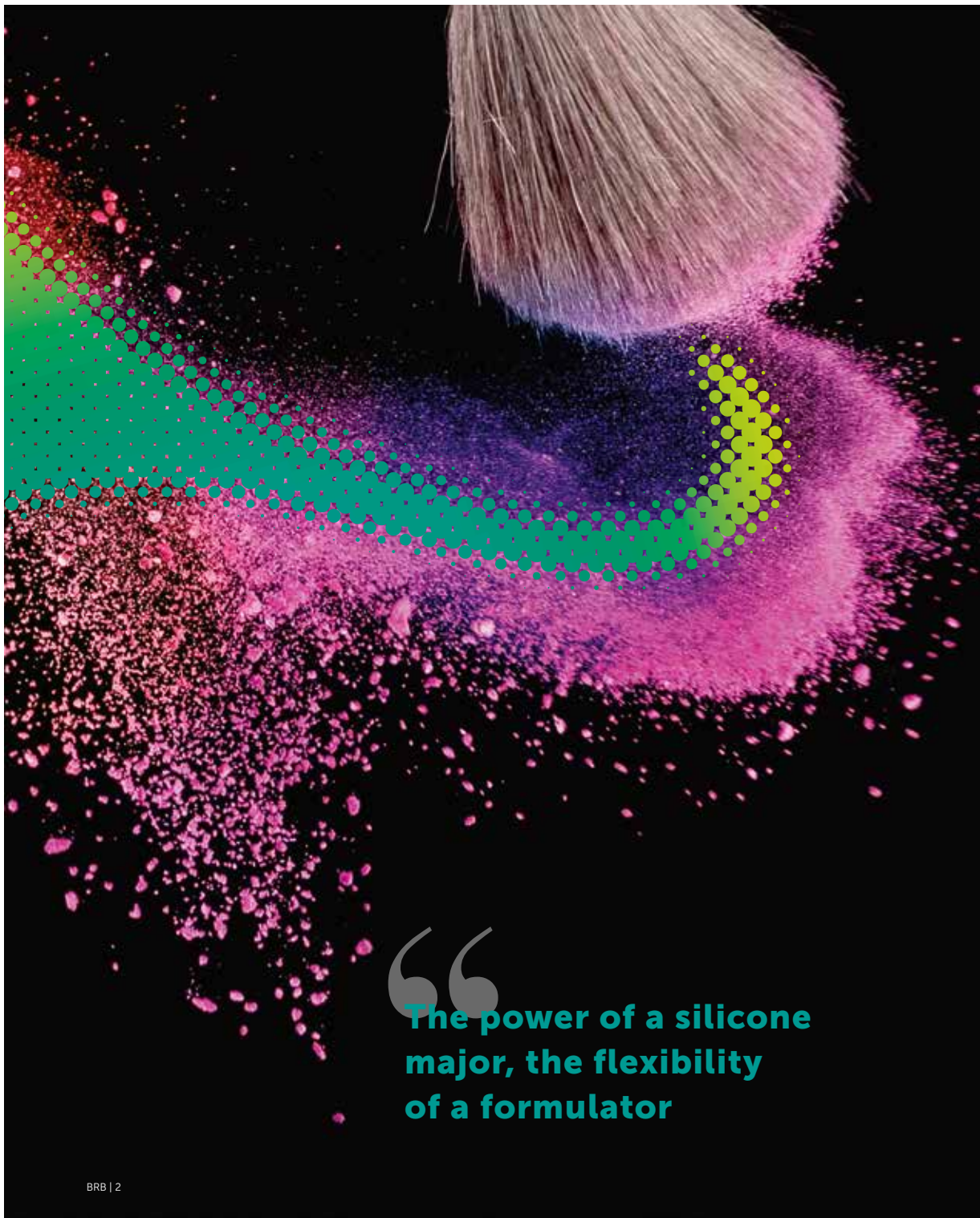




The power of smart ingredients

Silicones
for
personal
care



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**The power of a silicone
major, the flexibility
of a formulator**

Customer focused, innovate now and be enterprising

BRB Silicones, a business unit of BRB International B.V., is a producer of specialty silicones supplying to multi discipline of industries.



Established in 1981, headquartered in the south of the Netherlands, BRB International B.V. has created an effective worldwide supply chain network with offices and warehouses in the UK, Poland, South Africa, United States, Canada, Malaysia, China, Singapore, Turkey, Dubai and South Korea.

Our manufacturing sites are located in Europe, North America and Asia.

As a subsidiary of PETRONAS Chemicals Group Berhad, BRB now has even greater global presence and innovation resources.

Product range

The product range includes emulsions, antifoams, water repellants, elastomers, lubricants, silanes, resins, dimethicone & cyclomethicone blends, dimethicone copolyols, crosspolymers and customised products.

BRB Silicones also supplies a very broad range of core and specialty intermediates with an exceptional combination of product supply regularity and competitive pricing.

BRB Silicones enjoys continuous growth thanks to its flexibility and customisation capabilities.

Our commitments in the personal care market

The personal care market is a strategic market for BRB Silicones and we constantly invest in people and equipment to support our commitments to this industry.

Our continuously expanding range consists of a balanced mix of well-established large commodity products and smaller performant specialty silicones.

Our increasing technical service team is supporting our customers with new trendy formulations to support today's challenge of innovative, performant and cost effective formulations.

Silicones continuously gained popularity in personal care applications due to their capacity to develop more performant and attractive formulations. Benefits often obtained with small amount of silicones. This is the power of smart ingredients.



Silicone chemistry

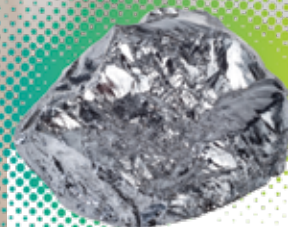
Silicones contain up to 60% silicon and oxygen, the most widespread elements in the earth's crust.

Because they are chemically inert and safe ingredients, silicones are used in the most exigent markets such as pharmaceutical, medical devices, personal lubricants and food with no evidence of unsafety or toxicity.

Silicones gained a huge popularity since their first introduction in personal care formulations in 1970's and are in the meantime present in every second new formulation launched.

With their enhanced performance, compatibility with other ingredients and unequal sensory, silicones are valuable for formulators and consumers to obtain performant and innovative formulations.

“
Because they are chemically inert and safe ingredients, silicones continue to be used in the most exigent markets with no evidence of unsafety or toxicity”



Real facts about silicones

Myths		Evidence
Silicones are petroleum derivatives	Origin	Silicones come from quartz, composed of the two most abundant elements on earth: oxygen and silicon
Silicones are occlusive and do not let skin breath	Occlusivity	Silicones are permeable to gas and water vapor. Some silicones are wetting agents
They are film formers which prevents water from evaporating off skin		They create a skin barrier which provides water resistance and permits skin pore to breath
They create a build-up effect on skin and hair	Accumulation	Silicones may deposit, but not permanently
They cannot be rinsed off		They can be easily washed off with standard cleansers
They cannot be degraded and they accumulate into the environment	Environment	Silicones chemically degrade into silica and carbon dioxide in soil and air
They accumulate in living organisms		Silicones are too large to be absorbed by biological membranes
They are toxic to skin	Safety	Silicones are inert and harmless due to their chemistry
		In vitro tests have been performed with no cytotoxic results
		Silicones have been dermatologically tested with no allergic reactions. They can be claimed as hypoallergenic
		Silicones do not present skin sensitisation under repeated use
		They are safe to use even in sensitive areas or mucosa

Silicones are the best unbeatable conditioners for hair care

Hair care

Silicone technology is known to offer pre-eminent multifunctional conditioning effects for all hair types.

These materials deliver unparalleled detangling, unique softness and excellent shine effects. They are the go-to technology to rejuvenate damaged hair, treat dryness, restore cuticle integrity, improve hair strength and protect from the effects of styling heat treatments. They are able to reduce flyaway problems, improve texture, minimise unwanted frizz effects and impart excellent color protection.

Silicones are easily formulated not to accumulate allowing a highly desirable non-greasy, silky touch. Our portfolio of silicones can meet all your hair treatment needs.

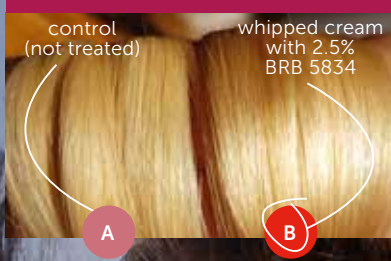
Benefits

- Supreme conditioning
- Softness / silkiness
- Shine
- Ease of detangling
- Dry combing force reduction
- Wet combing force reduction
- Thermal protection
- Color protection
- Frizz & flyaways reduction
- Volume
- Cuticle sealers
- Prevent hair breakage
- Reduce dry time

Applications

- Rinse off and leave on conditioners
- Shampoo
- Hairstyling
- Hair dyes

Shine



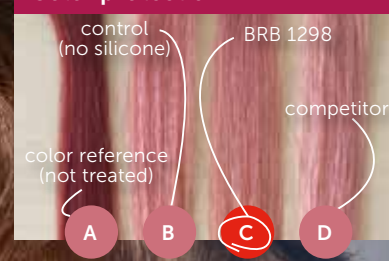
Thermal protection



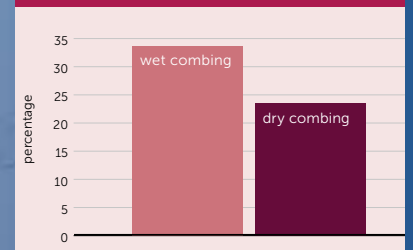
BRB 5446 protects from heat damage, preventing cuticle to crack.
A: Control versus B: 2% BRB 5446 + 1.5% BRB 1288 after 50 cycles of hair straightening at 230°C

Visible results after 15 cycles of washing, conditioning and styling using a shampoo and conditioner with 5.0% BRB 1298

Color protection

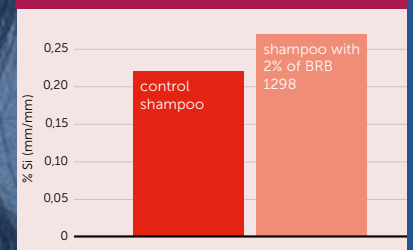


Combing force reduction



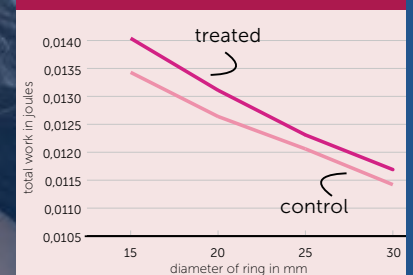
Shampoo and conditioner containing BRB 5446 shows a wet combing force reduction of 34% and dry combing force reduction of 24%, compared to control shampoo and conditioner

Build-up effect



BRB 1298 shampoo does not present significant build-up effect compared to control shampoo

Volume



The ring method for evaluation of tress volume. Shiner whipped cream (leave-in) which contains 3% of BRB 5834 compared with its control

Silicones can create a breathable shield which protects from external aggressions

Silicones deliver a flawless, highly desirable sensory effect which is silky smooth and velvety.

In AP/DEO formulations they impart an important tack-free, anti-whitening character together with non-cooling, rapid drying. Silicone's unique lubricity is important to uniformly spread and level the broadest spectrum of actives and UV filters in modern skincare systems.

They can form a powerful water resistant shield to protect skin from external aggressions, whilst simultaneously allowing pores to breath.

Besides creating innovative and luxury textures, they have an important role delivering immediate soft focus effects, masking wrinkles and skin imperfections.

Benefits

- Softness / silkiness
- Anti-whitening
- Moisturizing
- Thickening aid / texturizing agents
- Enhance spreading
- Reduce tackiness
- Water resistance
- Emulsifier
- Reduce dry time
- Soft focus & mattifying effect
- Wrinkle / imperfection masking
- Anti-pollution shield

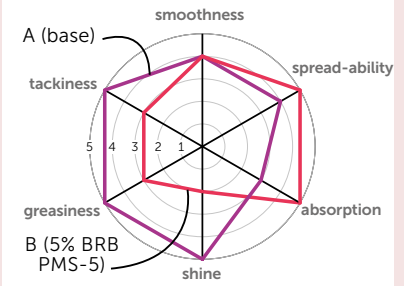
Application

- Moisturizers
- Cleansers, scrubs
- Body wash and shower gel
- Face and body treatments
- Face and body masks
- Eye care
- Sun care
- Self tanners
- Lip treatments
- Wet wipes
- Men care
- AP DEO
- Baby care
- Hair removal and shaving

Good for

- Sensitive skin
- Acne treatments
- Oil free formulas
- Hypoallergenic applications

Sensory results



Soft focus effect



Immediate visibly reduction of fine lines and wrinkles.
Skin close-up (x 1000)

Skin care

The perfect color formula can be remarkably improved by adding silicones, which ensure the right coverage, confer long-lasting effects and condition skin

Color cosmetics

Silicones disperse pigments and tints, delivering uniform coverage and color homogeneity. They ensure a long lasting color fixation effect with zero bleed and transfer issues.

They reduce a cosmetic's drying time and can be formulated to achieve water resistance, with limitless possibilities to impart gloss, sheen or matt effects. Silicones allow unparalleled wear comfort, eliminating the heaviness often associated with pigments or other additives, thereby improving final sensory.

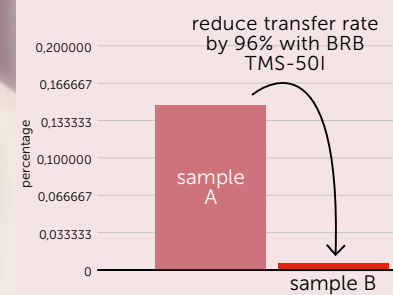
Benefits

- Softness / silkiness
- Gloss
- Pigment spreading enhancers
- Prevent pigment agglomeration
- Transfer resistance / long lasting
- Moisturizing
- Thickening aid / texturizing agents
- Emulsifier
- Soft focus & mattifying effect
- Wrinkle / Imperfection masking
- Reduce tackiness
- Reduce dry time
- Anti-pollution shield
- Water resistance

Applications

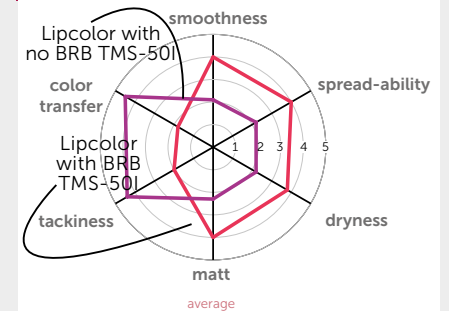
- Foundations, BB & CC creams, tinted moisturizers
- Face primers
- Concealers and color correctors
- Setting sprays
- Powders
- Highlighters and contours
- Cheek blushers and bronzers
- Eyeliners, eyepencils
- Eye mascaras and eye shadows
- Lipsticks, lipgloss, lipstains, lip plumpers, lip liners
- Nail polishes, nail base & top coats, nail dryers and treatments

Color transfer rate



No color transfer. Reduction of transfer effect after 10 min. Sample A: lipcolor with no BRB TMS-501. Sample B: lipcolor with 30% BRB TMS-501

Sensory results



Sensory results: Smoothness, good spreadability, matt result, reduce dry time, reduce tackiness

Product overview

BRB product	INCI	Viscosity (cSt)	Refractive index
Volatile fluids	Fast evaporation solvents and light emollients		
CM 40	Cyclotetrasiloxane	2.4	1.394
CM 50	Cyclopentasiloxane	4	1.397
CM 56-S	Cyclopentasiloxane (and) Cyclohexasiloxane	6	1.398
CM 60	Cyclohexasiloxane	6.8	1.402
DM 0.65	Disiloxane	0.65	1.375
DM 1	Trisiloxane	1	1.382
1417	Dimethicone (and) Trisiloxane	1.5	1.389
DM 1.5	Dimethicone	1.5	1.387
DM 2	Dimethicone	2	1.389
DM 55	Dimethicone	3.3	1.394
DM 66	Dimethicone	6	1.395
Dimethicone fluids	Soft emollients for the right spreadability	Viscosity (cSt)	Refractive index
DM 3	Dimethicone	3	1.392
DM 5	Dimethicone	5	1.396
DM 6	Dimethicone	6	1.397
DM 10	Dimethicone	10	1.399
DM 20	Dimethicone	20	1.400
DM 50	Dimethicone	50	1.402
DM 100	Dimethicone	100	1.403
DM 200	Dimethicone	200	1.403
DM 350	Dimethicone	350	1.403
DM 500	Dimethicone	500	1.403
DM 1000	Dimethicone	1,000	1.403
DM 5000	Dimethicone	5,000	1.403
DM 10000	Dimethicone	10,000	1.403
DM 12500	Dimethicone	12,500	1.403
DM 30000	Dimethicone	30,000	1.403
DM 60000	Dimethicone	60,000	1.403
DM 100000	Dimethicone	100,000	1.404
Phenyl modified silicones	Enhance gloss with good pigment compatibility	Viscosity (cSt)	Refractive index
PTM 20	Phenyl Trimethicone	22.5	1.460
Gum blends	Excellent conditioners with silky touch	Viscosity (cSt)	Gum (%)
1735	Cyclopentasiloxane (and) Cyclotetrasiloxane (and) Dimethiconol	5,500	14
1744	Cyclotetrasiloxane (and) Dimethiconol (and) Cyclopentasiloxane	7,500	18
1755	Cyclotetrasiloxane (and) Cyclopentasiloxane (and) Dimethiconol	7,500	16
1834	Cyclopentasiloxane (and) Dimethiconol	6,000	15
1844	Cyclopentasiloxane (and) Dimethicone	6,000	15
1934	Cyclopentasiloxane (and) Dimethiconol	10,000	15
1736	Dimethicone (and) Dimethiconol	4,000	13
1740	Dimethicone (and) Dimethiconol	1,500	12
1860	Dimethicone (and) Dimethiconol	4,500	15
1819	Dimethicone	3,300	14
1859	C11-13 Isoparaffin (and) Dimethicone	11,000	22
1861	C11-13 Isoparaffin (and) Dimethiconol (and) Isohexadecane (and) Dimethicone	16,000	26

BRB product	INCI	Viscosity (cSt)	Cross-polymer (%)	Water solubility
Cross-polymers	Velvety, powdery and mattifying touch			
SG 106	Cyclopentasiloxane (and) Dimethicone/Vinyl Dimethicone Crosspolymer	30,000	11	
SG 116	Cyclopentasiloxane (and) Dimethicone/Vinyl Dimethicone Crosspolymer	55,000	12	
SG 117	Cyclopentasiloxane (and) Dimethicone/Vinyl Dimethicone Crosspolymer	10,000	6	
SG 506	Dimethicone (and) Dimethicone/Vinyl Dimethicone Crosspolymer	30,000	14	
SG 516	Dimethicone (and) Dimethicone/Vinyl Dimethicone Crosspolymer	30,000	11	
SG 517	Dimethicone (and) Dimethicone/Vinyl Dimethicone Crosspolymer	10,000	10	
SG 210	Cyclopentasiloxane (and) Dimethicone Crosspolymer	450,000	<12	
SG 250	Dimethicone (and) Dimethicone Crosspolymer	400,000	<20	
Silicone copolyols	Cold processable emulsifiers/ co-emulsifiers for long stability emulsions	Viscosity (cSt)	Calculated HLB	Water solubility
523	PEG/PPG-18/18 Dimethicone	2,000	8	Yes
526	PEG-12 Dimethicone	300	13	Yes
423	Cetyl PEG/PPG-10/1 Dimethicone	1,250	5	No
6340, 6341	PEG-10 Dimethicone	600	4.5	No
6373	Cyclopentasiloxane (and) PEG/PPG-18/18 Dimethicone	30	2	No
Silicone emulsions	Supreme conditioners for hair care	Emulsifier type	Particle size (µm)	Silicone (%)
9719	Dimethicone (and) Laureth-4 (and) Laureth-23 (and) Salicylic Acid	Non-ionic	<1*	50
1018	Dimethiconol (and) TEA-dodecylbenzenesulfonate	Anionic	0.6*	60
1288, 1292	Amodimethicone (and) Trideceth-12 (and) Cetrimerium chloride	Cationic	<1*	35, 50
5446	Silicone Quaternium-17 (and) Trideceth-7 (and) Trideceth-5	Non-ionic	<0.1**	15
5834	Phenyl Trimethicone (and) Laureth-4 (and) Silicone Quaternium-17 (and) Laureth-23	Non-ionic	<0.1**	17
Amodimethicones	High stability oils for hair dyed protection	Viscosity (cSt)	N content (%)	
SF 240	Amodimethicone	4,000	0.2	
SF 430	Amodimethicone	3,000	0.4	
SF 242	Bis-Hydroxy/Methoxy Amodimethicone	5,000	0.18	
Alkyl dimethicones	Organic compatible emollients with unique sensory	Viscosity (cSt)	Refractive index	
2835	Cetyl Dimethicone	45	1.440	
Caprylyl Methicone	Caprylyl Methicone	3	1.413	
2836	Stearyl Dimethicone (and) Octadecene	100	1.447	
Silicone resins	Mattifying and soft focus powder agents	Particle size (µm)	Resin (%)	
PMS-2	Polymethylsilsesquioxane	2	100	
PMS-5	Polymethylsilsesquioxane	5	100	
Silicone resins	Long lasting emollients and water repellents	Viscosity (cSt)	Refractive index	Resin (%)
TMS	Trimethylsiloxy silicate	-	-	100
TMS-50C	Cyclopentasiloxane (and) Trimethylsiloxy silicate	200	1.405	50
TMS-50I	Isododecane (and) Trimethylsiloxy silicate	10	1.420	50
TMS-30D	Dimethicone (and) Trimethylsiloxy silicate	700	1.409	30
BRB Color lock	Isododecane (and) Trimethylsiloxy silicate (and) Dimethicone	4,000	1.415	25

*Macroemulsion

**Microemulsion



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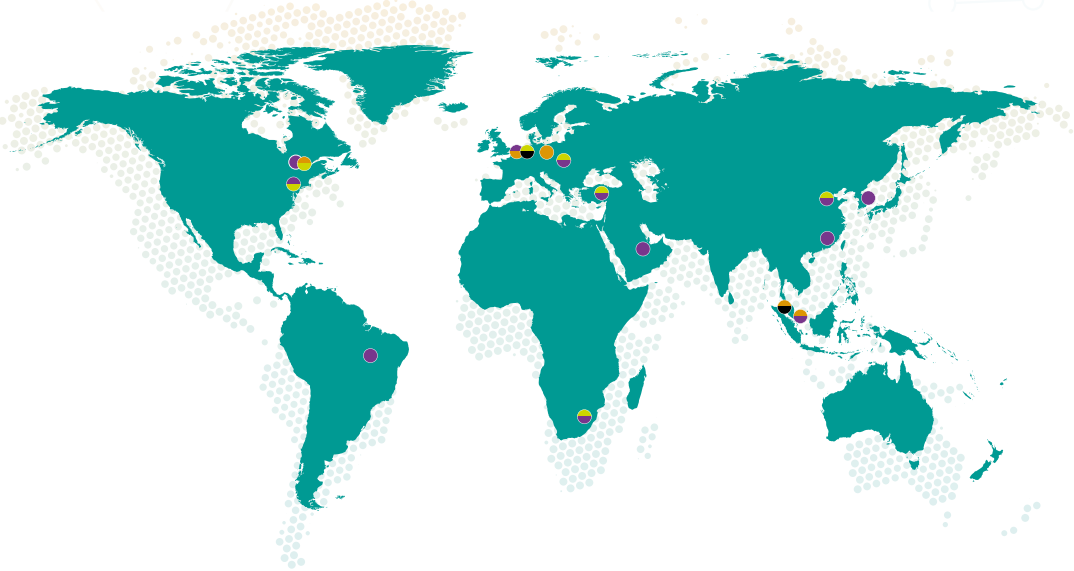
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