

SOLVAY way

The way we do business

Solvay puts into practice a sustainable development policy called **Solvay Way** because we are convinced our future is dependent upon the responsible way in which we conduct our current activities — a way that reflects our commitment to each of our stakeholders. **Solvay Way** encompasses three interlinked, equally important spheres: the Environment Sphere, the People Sphere and the Economic Sphere.

Based on a framework of responsibilities, **Solvay Way** allows Solvay sites and businesses to conduct self-assessments of their practices and establish action plans that promote continuous progress. At Solvay, the way we do business creates sustainable value for all our stakeholders through innovation and partnership.



> Responsible Care is the chemical industry's voluntary continuous improvement initiative to promote safe handling of products. (1987)



> The UN's Global Compact aims to ensure that heads of companies promote and uphold 10 universal principles concerning human rights, working conditions, respect for the environment and anti-corruption. (2003)



> The International Federation of Chemical, Energy, Mine and General Workers' Unions. (2005)



> Solvay Novocare has achieved world-wide ISO-9001 Quality Management System Multi-Site Certification. (2008)



North America

Solvay Novocare – 504 Carnegie Center Drive – Princeton, NJ 08540 – USA
Phone: +1-800-973-7873 – Fax: +1-609-860-0463 – NovocareCC@solvay.com

Europe

Solvay Novocare – 40, rue de la Haie-Coq – F-93306 Aubervilliers Cedex – France
Phone: +33 (0) 1 53 56 50 00 – Fax: +33 (0) 1 53 56 53 90

Asia Pacific

Solvay Novocare – 1, Biopolis Drive – #05-01/06 AMNIOS – Singapore 138 622
Phone: +65 - 6291 1921 – Fax: +65 - 6394 3376

Latin America

Solvay Novocare – Centro Empresarial – Avenida Maria Coelho Aguiar, 215, Bloco B-1° Andar
Cep: 05804-902 – São Paulo-SP Brazil
Phone: +55 11 3741-7505 – Fax: +55 11 3741-8378

www.solvay.com

While the information herein is believed to be reliable, we do not guarantee its accuracy. Customers (direct and indirect) are urged to make their own tests with products described herein. Various patents owned by Solvay or others may be pertinent to their use and to compositions containing them. Nothing contained herein is intended as a recommendation to use our products so as to infringe any patent. We assume no liability for any intellectual property rights violation by customers (direct or indirect). Customers (direct and indirect) should make their own patent investigation related to the freedom to operate for any specific intended use. If a relevant patent is identified, customers (direct and indirect) should secure a license from the patent owner. Customers (direct and indirect) should evaluate the products to determine notably their strength, performance and safety. All applicable laws and regulations should be consulted. All the names mentioned are registered trademarks of Solvay, its subsidiaries or affiliates.

Make Your Life Easier with Mirapol® Surf-S



MIRAPOL®
Surf-S

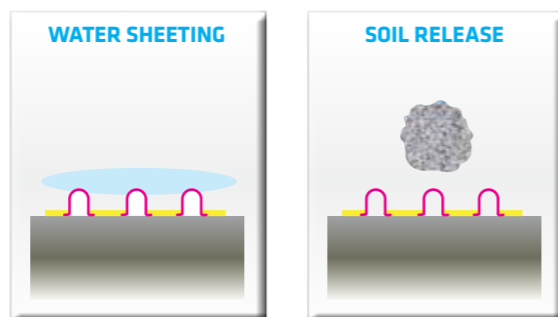
Mirapol® Surf-S product range

Hard Surface Cleaning Polymers designed to answer your needs

Discover our range!

A broad range, specifically designed to answer your needs for various applications. From Surface Cleaning to Dish Care, let's invent the cleaning of tomorrow

Our Mirapol® Surf-S Polymers use our unique hydrophilizing technology to adsorb on surfaces and form a protective barrier that is resistant to rinsing and bring several benefits through water sheeting and soil release mechanisms.



Suitable to surfaces such as:



Ceramic Tiles



Glass



Stainless Steel



Painted Metals



Application	New Mirapol Surf-S grade	Product form	Recommended dosage as is
Hard Surface Cleaners	Mirapol® Surf-S 110	pH 3.5 - 4.5 MIT/BIT & IPBC	0.5-1%
	Mirapol® Surf N HSC	Naturally derived polymer, free-flowing powder	0.1%-0.5%
Automatic Dishwashing Detergents	Mirapol® Surf-S 480 PF	pH 6-7 MIT/BIT & IPBC* *Also exists preserved with Phenoxyethanol	0.6-2.5%
	Mirapol® Surf-S P-free Power	Granular Powder MIT/BIT & IPBC	0.5-1%
Vehicle Cleaners & Dilutables	Mirapol® Surf-S 310	pH 6-8 MIT/BIT & IPBC	2-5%
Acidic Toilet Bowl & Bathroom Cleaners	Mirapol® Surf-S 900	Aqueous solution pH 4,0-5,0 Preservative free	0.5-2%

MIRAPOL®
surf-s

Long-Lasting cleaning performance
Prevent soil adhesion and scale encrustation

Faster-drying
Thanks to water sheeting mechanism, water forms a thin and homogeneous film

Easier Cleaning
Effortless next time cleaning thanks to reduced soil-surface affinity

Shinier Surfaces
Prevent streak and spot-like residues
Anti-fog on glass & mirrors

Hard Surface Cleaning

Bathroom, Kitchen & Glass



Mirapol® Surf N HSC

The perfect addition for modern surfaces!



Surfaces stay clean and shiny longer with **Mirapol® Surf-S 110**.

Durable cleaning effect, thanks to the polymer substantivity for the surface:

- Water sheeting
- Fast drying: thinner & uniform water film for accelerated drying
- Shiny surfaces, spot and streak free
- Soil release & easy cleaning: prevents soil adhesion by changing surface energy. Makes subsequent cleanings easier due to reduced soil attraction
- Anti-scale
- Effortless soap scum removal: the polymer avoids soap scum to adhere on surfaces for an easier cleaning

Surfactants Tips:

Mirataine® H2C-HA: Moderate foam, good hydrotrope, good electrolyte solubility, good wetting & detergency

Mackam® OIP-40 and Mirataine® JC-HA: Low foam, alkali stable, good hydrotrope, wetting

Mirataine® CBS: Excellent wetting and detergency with hydrotrope properties and electrolyte solubility

Antarox® L series: Low foam, excellent wetting and rinsing aid properties

Surfaces Tips

Mirapol® Surf-S 110 is particularly suited for use on glass and ceramic surfaces

Sustainability Tips

Low recommended usage level in formulation to help reduce level of harsh chemicals per wash

Long-lasting effect to reduce the number of wash cycles needed and water usage

Formulation Tips

Product Form: **Aqueous Solution**

Solids: **19 - 23%**

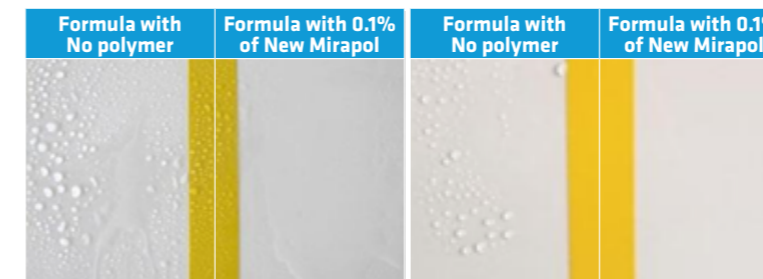
Recommended formulation pH range: **pH 1 to 12**

Recommended dosage: **0.5-1.0% wt. as is**

Preservative: **MIT/BIT & IPBC**

Today having products cleaning traditional ceramic or glass surfaces is not enough. Plastics have revolutionized our homes! Melamine or PMMA have replaced furnitures in kitchens and bathroom for their particular glossy aspect. Polycarbonate, PE and SAN have also replaced glass structures in your shower cabins for instance.

Shiny surfaces and faster drying with Mirapol® Surf N HSC!



On white PMMA surface - after 10 minutes
Half of the surface was pretreated with a formulation containing 0.1% Surf N HSC and 2.5% APG surfactant

Shiny surfaces and faster drying with Mirapol® Surf N HSC!



After 3 soiling cycles
The surface is pre-treated once with the cleaner formulation and then soiled and rinsed several times

The Natural and Efficient Solution

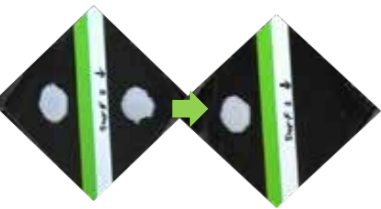
- Naturally derived polymer
- 100% active
- Free-flowing powder
- Extremely low dosage needed to have benefits (0.1% recommended)
- Recommended neutral formulation pH (5-9 but better at 7)
- Clear formulation is possible
- No build-up
- Can be used in combination with Mirapol® Surf-S

Exceptional Benefits

- Water Sheeting (renders surface hydrophilic and improves water drainage)
- Fast and uniform drying (thinner water film for accelerated drying)
- Shiny surfaces, spots and streak-free (avoid dried spots and streaks by preventing beading)
- Anti-resoiling effect for easier next time cleaning (prevents soil adhesion)
- Can also be of interest for other surface cleaners such as whiteboards, lab desks, etc.

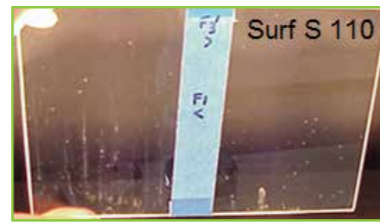
Effortless Soap Scum removal

Residue-free drying



Left: Commercial Cleaner
Right: Commercial Cleaner + 1% Surf-S 110

After 30min drying, tile is rinsed with cold tap water



Left: Non-treated surface
Right: Treated glass surface

Treatment: 3 times wiped with a simplified glass cleaner formulation containing 1% Surf-S

Formulation Guide



Glass Cleaner	
Ingredients	% w/w
Mirataine® H2C-HA	0.3
Isopropanol	7
Mirapol® Surf-S 110	0.8
Propylene Glycol	1
N-Butyl Ether	1
Mackamine® 654	0.45
Fragrance	0.15
NaOH	Qs
Water	Up to 100



Wet wipes for Kitchen	
Ingredients	% w/w
Mirataine® H2C-HA	0.5
Isopropanol	3
Mirapol® Surf-S 110	1
Propylene Glycol	1
N-Butyl Ether	1
Water	Up to 100
Citric Acid	Qs



Acidic Shower Cleaner	
Ingredients	% w/w
Mirataine® CBS	4
Mirapol® Surf-S 110	1
Isopropanol	2
Propylene Glycol	1
N-Butyl Ether	1
Citric Acid	Qs
Preservative	Qs

Formulation Guide

Kitchen Cleaner		Shower Cleaner	
Ingredients	% w/w	Ingredients	% w/w
Rhodoclean® EFC	1%	Mirapol® Surf N HSC	0.10%
Mirapol® Surf N HSC	0.10%	Mirataine® CBS	4%
Mirataine® H2C-HA	0.90%	Isopropanol	2%
Isopropanol	3%	Dowanol PnB	1%
Dowanol PnB	1%	Water	To 100%
Water	To 100%	Citric Acid	Adjust to pH 3-4
NaOH	Adjust to pH 10		



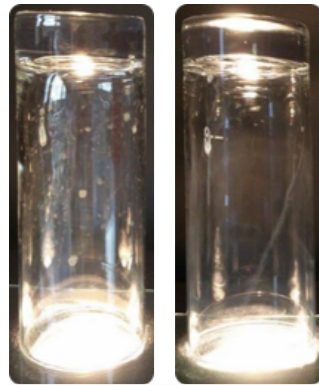
Automatic Dish Washing

Powder & Liquid-form detergents

Go spot-less with **Mirapol® Surf-S P-free Power** & **Mirapol® Surf-S 480PF**.

- Bring superior performance in Phosphate-free formulations
- Avoid spot & streak residues on your dishware
- Rinse-aid multi-benefits for all-in-one detergents
- Easy process: liquid or granulated polymer easy to introduce
- No polymer build-up

Spotless dishes

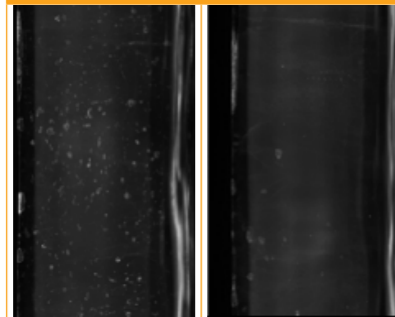


MGDA Formula
0% Mirapol® Surf-S

MGDA Formula
1% Mirapol® Surf-S P-free Power

Versatile solution

Mirapol® Surf-S P-free Power is also compatible with citrate formulations



Citrate Formula
0% Mirapol® Surf-S

Citrate Formula
1% Mirapol® Surf-S P-free Power

Formulation Guide

All-in-one P-free tablet detergents			
	Economical Formula	Standard Formula	Premium Formula
Sodium Citrate	30	15	0
MGDA	0	15	30
Sodium Carbonate	20	20	20
Sodium Silicate	10	10	10
Sodium Sulfate	11.5	11.5	11.5
Phosphonate Chelant	1	1	1
Antarox® LF-54	3	3	3
Acrylic dispersant	8	8	8
Mirapol® Surf-S P-free Power	1	1	1
Sodium Percarbonate	10	10	10
TAED	2.5	2.5	2.5
Protease	1.5	1.5	1.5
Amylase	1.5	1.5	1.5



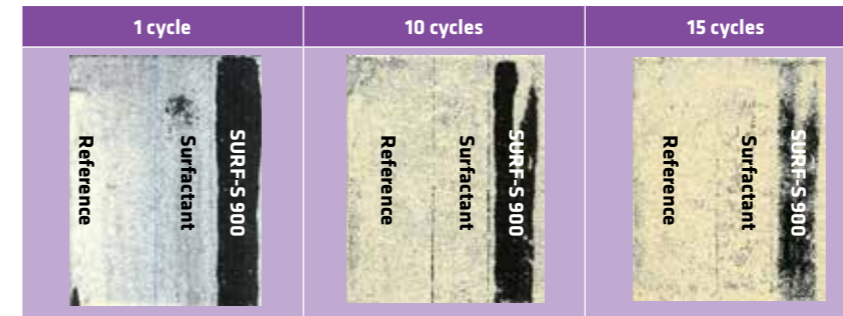
Acidic Cleaning

Toilet Bowl and Bathroom Cleaners

No need for scrubbing with **Mirapol® Surf-S 900**.

- Improved removal of visible soil from the first wash
- Continuous cleaning action until depletion
- Long-lasting effect due to polymer substantivity, resistant to several flushes
- Easier next-time cleaning with no follow-up scrubbing needed:
 - Soil-release effect
 - Prevention of limescale encrustation

Long lasting protective action



Formulation Guide

Toilet Bowl Cleaner	
Ingredients	% w/w
Rhodameen® O2V/LD	7
Mackamine® LA	3
Hydrochloric Acid (30%)	10
Mirapol® Surf-S 900	0.8
Sodium Chloride	5
Fragrance, Dye	Qs
Water	74.2



Surfactants Tips:

Mackamine® LA and **Mackamine® CS**: Good foam, wetting, acid stable and will also thicken acid systems

Mirataine® CBS and **Mirataine® BB-FLA**: Good acid stability, good foam in acid conditions, wetting and detergency

Surfaces Tips

Mirapol® Surf-S 900 is designed to be effective on ceramic, stainless steel and glass surfaces

Sustainability Tips

Mirapol® Surf-S 900 is compatible with **EU Ecolabel for Hard Surface Cleaners**

Long-lasting effect to reduce the number of wash cycles needed and water usage

Formulation Tips

Product Form: **Aqueous Solution**

Solids: **20-24%**

Recommended dosage: **0.5 - 2.0% wt. as is**

Recommended formulation pH range: **pH 1 to 6**

Preservative: **Free**

Vehicle Wash & Dilutables

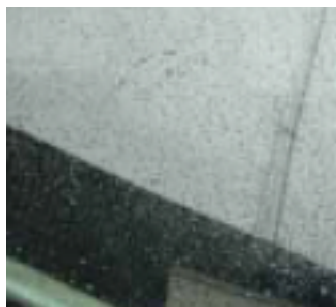
Professional detergents & Dilutables



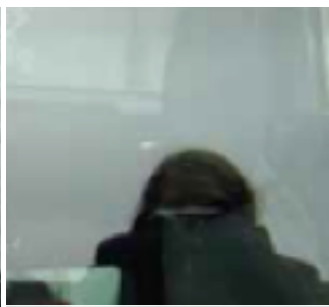
Clean faster and go shiny with **Mirapol® Surf-S 310**.

- ▶ Prevents water drops formation on your vehicle
- ▶ Homogeneous water film (water sheeting), even after a rainy day!
- ▶ Fast drying (thanks to water sheeting effect)
- ▶ Easy to process and to dilute
- ▶ Quicker cleaning, Soil release and protection of your vehicle

Shinier surfaces even after a rainy day



Formulation without
Mirapol® Surf-S 310



Formulation with 5%
Mirapol® Surf-S 310 as is

Dilution rate: 3% in cold tap water

Surfactants Tips:

Mirataine® H2C-HA: High foam, wetting, hydrotrope, electrolyte solubility

Mackamine® LA or CS: Foam stabilizer & booster, wetting, electrolyte solubility

Mackam® OIP-40 & Mirataine® JC-HA: Low foam, alkali stable, good hydrotrope, wetting

Surfaces Tips

Mirapol® Surf-S 310 is particularly suited for use in glass, ceramic and painted metals surfaces

Sustainability Tips

The most effective grade, also allows preparation of high active dilutables

Long-lasting effect to reduce the number of wash cycles needed and water usage

Formulation Tips

Product Form: **Aqueous Solution**

Solids: **19 - 21%**

Recommended dosage: **2.0 - 5.0% wt. as is**

Recommended formulation pH range: **pH 0.5 to 12**

Preservative: **MIT/BIT & IPBC**

Formulation Guide



Streak-free Wash & Wax

Ingredients	% w/w
Mackamine® CS	10
Mirapol® Surf-S 310	4
MGDA (78% active)	2
Mackam® OIP-40	5
Preservative	Qs
Fragrance	Qs
Water	To 100



Truck/Bus Cleaner

Ingredients	% w/w
Rhodoclean® EFC	5
Mackamine® LA	4
Mirataine® H2C-HA	5
Mirapol® Surf-S 310	2
Dipropylene Glycol Methyl Ether	4
Sodium Nitroacetate (40%)	10
Sodium Metasilicate	2
Water	To 100



Shampoo for Automatic Wash

Ingredients	% w/w
Sodium Laureth Sulfate (27%)	5
Mackam® CAB 818	4
Mirataine® H2C-HA	5
Mirapol® Surf-S 310	2
MGDA (78% active)	4
Citric Acid (50%)	10
Water	2
Preservative	To 100