

A new form of coating
Resisting stains actively.

iopro

ion protect coating



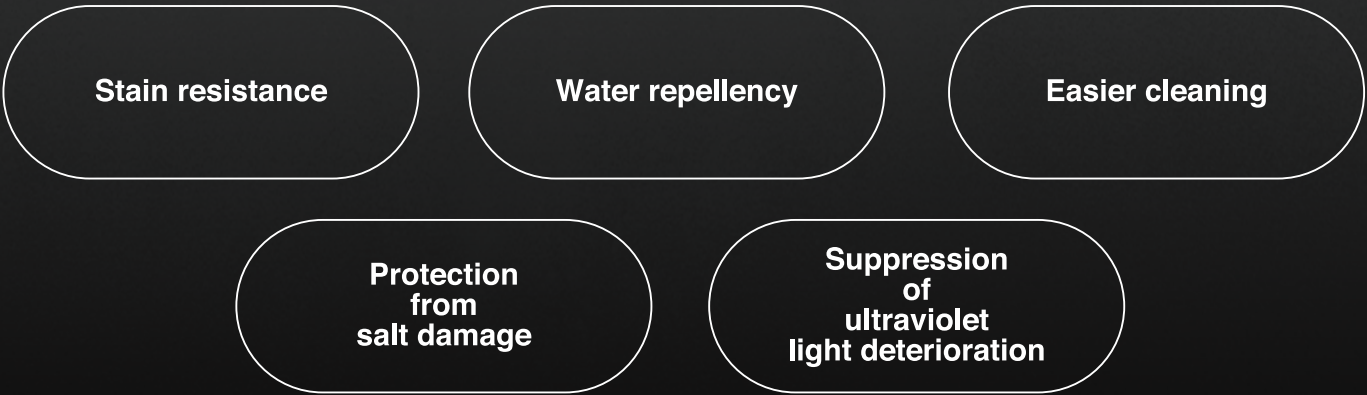
Save the Safety for People

A new form of coating—Resisting stains actively.

Make things water repellent, stain proof, and resistant to deterioration

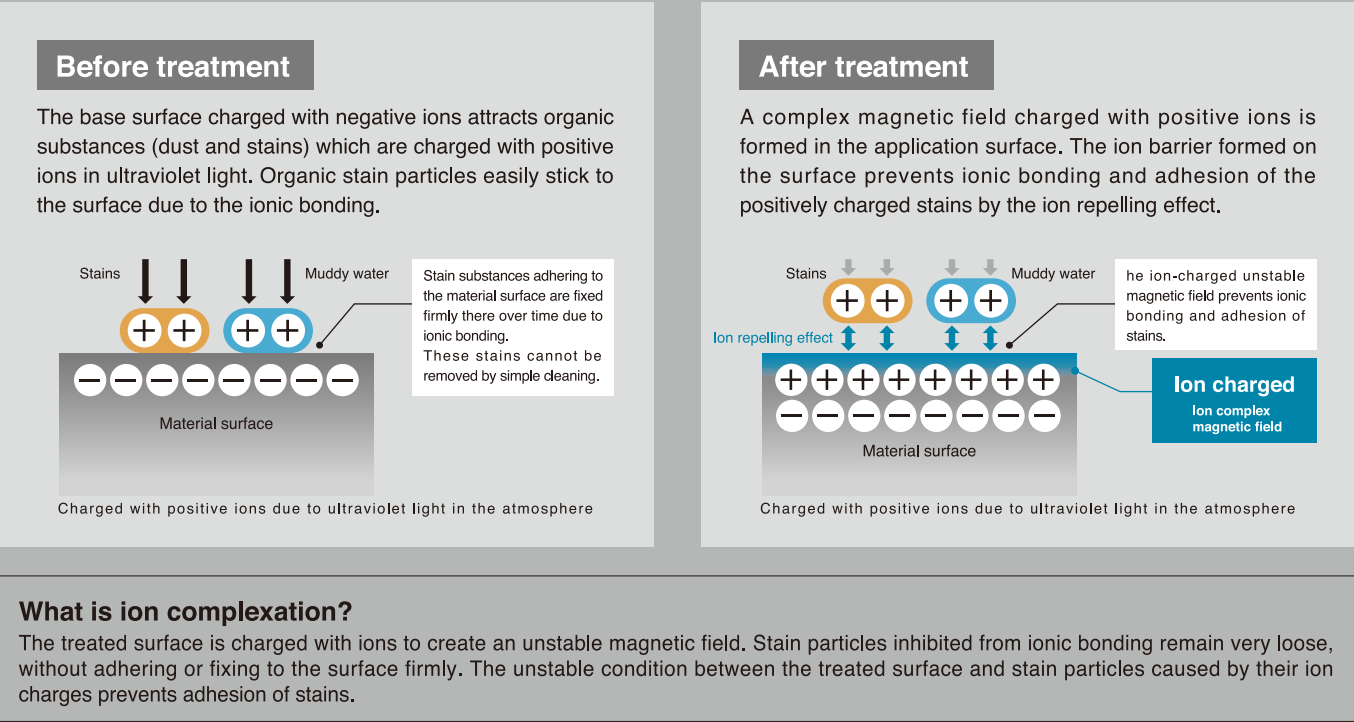
iopro has been developed by a new approach different from catalyst or film coating agents. It is neither a simple coating film formed on and bound to the base material surface, nor a catalyst coating whose organic matter decomposition capacity depends on chemical reaction with ultraviolet light in the sunlight. iopro turns the base surface into an ion-charged unstable magnetic field, without altering the texture or hardness of the material. The treated surface repels ions on stain particles and inhibits ionic bonding, thereby preventing contamination or adhesion of stains. This makes the surface less prone to stains and easily cleanable. Since silicone repels water, this product is also effective in preventing buildup of water spots and scales, hard sticking of bird droppings, and salt damage from salty air, seawater and calcium chloride. Moreover, this product has an effect of suppressing ultraviolet light deterioration. These effects last long, with regular cleaning and friction stimulation. iopro is a new and unprecedented coating product.

Major expectable effects



Mechanism of stain resistance and water repellency of iopro

Forms an ion-charged unstable magnetic field, and protects from stains and dirty water.



High water repellency achieved by the addition of silicone coating.

Silicone coating reduces frictional resistance of the treated surface and prevents adhesion and buildup of stains. Water repellency thus obtained further enhances the coating performance. With the synergy with the positive ion charging, a very thin coat of silicone achieves the best effect, requiring only a small amount per application. This product is easy to apply and very cost effective to use.

Ion charging combined with silicone coating protects from salt damage and ultraviolet light.

The synergy of the ion charge repelling effect and silicone protects the application surface from salt damage from salty air or seawater or corrosion by calcium chloride which is often used for melting snow in cold areas. It also reduces deterioration of resin and rubber products which are vulnerable to ultraviolet light. The protective features of the product are not limited to stain resistance and water repellency. Its wide allowable temperature range from about -50°C to about +300°C enables application to such environments where glass-based or fluorine coatings cannot be used due to the concern for thermal cracking or damage. iopro not only keeps the material surface clean under various conditions but prevents deterioration of the base material.

Features of iopro

1 Surprisingly high stain resistance

Stains do not penetrate or stick to the surface. Oil stains can be removed easily by cleaning with water or diluted neutral detergent. Unlike photocatalyst coating, Ion Multicoat works in both light and shade. Even self-cleaning is possible with the help of external aids like rain or wind.

*Do not use a hard brush or the like for cleaning because it may affect the effectiveness significantly.

2 Excellent weather resistance

The combined effect of silicone and ion charging inhibits penetration of ultraviolet light (UVA, UVB), acid rain, iron powders, calcium chloride or other corrosives, and prevents rust corrosion, salt damage and rubber hardening by ultraviolet light. Ion Multicoat provides a good protection from various environmental influences.

*Do not use on a water tank or where subjected to immersion in seawater for an extended time because the full performance will not be achieved.

3 High durability

Deterioration by ultraviolet light, salt or other harmful substances like exhaust gases, acids and alkali agents is prevented effectively, and these effects last long, ranging from several months to several years*. Regular maintenance, cleaning and friction stimulation can further increase the longevity of the effects.

*The time period over which the effectiveness decreases varies depending on the material of the surface and many environmental factors.

Why to use silicone?

■ Excellent weather resistance

Ozone and acid resistance test reports from various organizations suggest no problems in use. Silicone is often used for severe applications like inner materials of spacesuits. Silicone is also known for its inherent properties that could resist deterioration for over ten years.

■ High flexibility

Materials like glass and fluorine are excellent in repellency or resistance to foreign matter intrusion because of their high density and tight bonding. However, the small inter-atomic distances and coupling angles result in a lower flexibility compared to other materials and can cause damage in some cases. In silicone, bonding between the silicon and oxygen is strong, but with large inter-atomic distances and coupling angles. This allows loose movement of the atoms, providing an excellent flexibility.

■ Excellent thermostability

The silicon and oxygen forming the framework of silicone are in bonds, strongly attracting each other. Therefore, momentum of constituent molecules and atoms increases when exposed to temperature changes, becoming less liable to be cut. The high flexibility also leads to good followability to shrinkage of the base material. This feature prevents breakage or damage due to differences in shrinkage ratios.

■ Effective in static electricity control

Effective in static electricity control Silicone has a high electrical insulation. Once a stable charge state is reached, polarity change between positive and negative hardly occurs, with electric permittivity kept low. This allows for good control of static electricity.

■ Highly resistant to salt damage

Silicone and fluorine are often used for salt damage control. With a high durability of more than 5 years acknowledged for electrical equipment, silicone is used in wide applications including insulators. The use of silicone is also preferred from the viewpoints of its effects on coating films or electrical insulation properties.

4 Wide applicability to a variety of materials

Ion Multicoat is applicable to a variety of materials including metals, without altering the original texture of the material or hardening the material. Painted surfaces, metals, polycarbonate, glass, ceramics, tiles, stone, concrete, rubber, sealant—these are just examples of compatible materials.

*Do not use on animals or living things, in a place directly exposed to flame or fire, inside the heating/cooking equipment where food is placed, or on liquid materials.
*Do not use as a mirror defogger. This product is not intended for that use.

5 Easy maintenance

Original quality of the base material is retained after application, without any alteration to the hardness or texture of the material. When repainting is to be made for repair or other purposes, no extensive work like removal of existing paint films is required. The original surface before application can be restored by giving intense friction using rubber or abrasives like mirror finish agent. There is no need for removal of coating, or no interference from coating. Maintenance is easy with iopro.

6 Super water repellency

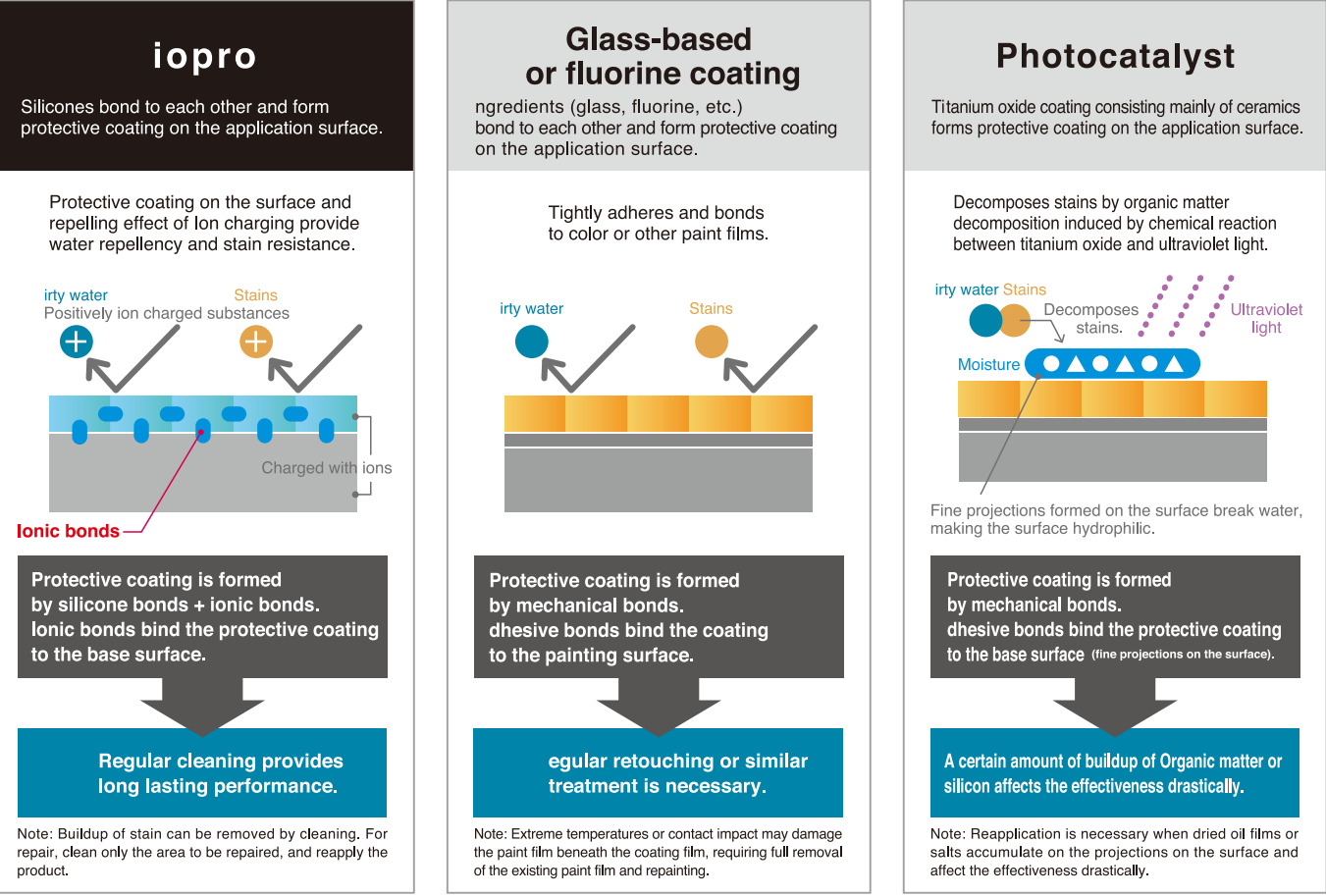
The combined effect of silicone and positive ion charging provides excellent water repellent performance in rain. The very smooth surface of the treated material allows water to flow down quickly together with stain particles, which contributes to the longevity of the effect.

7 Simple and quick application

The wide applicability enables application to a combination of different base materials like rubber and glass, with no need for any protective measures. Ion Multicoat spreads very well and dries fast. A thin coat is enough to obtain the full performance. Application is extremely easy and simple.

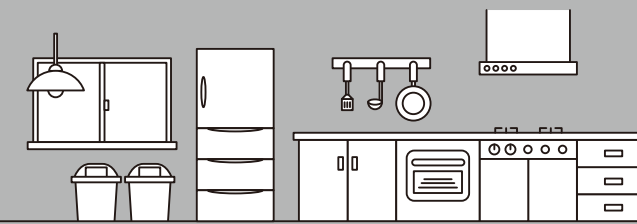
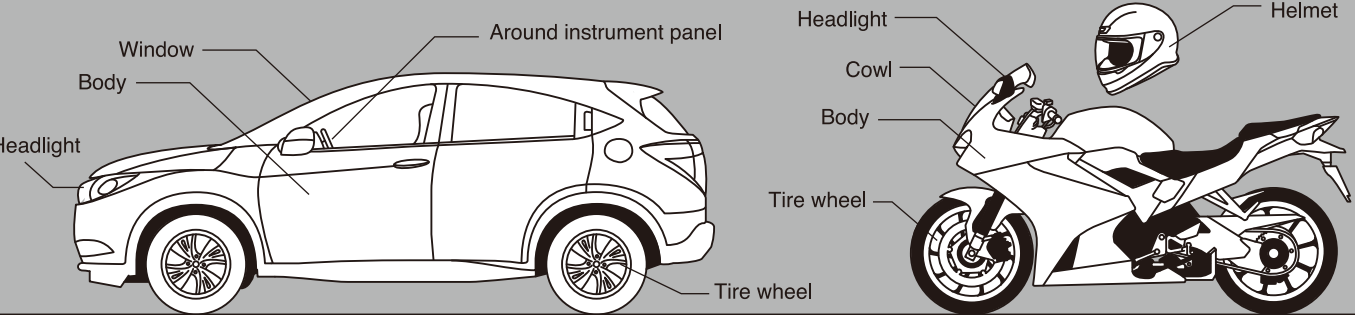
Comparison of features with major competitive products

	iopro	Glass-based coating agents	Fluorine coating agents	Photocatalyst
Applicability to materials	Very small restrictions in terms of hardness or properties of the base material as compared to common coating agents. Applicable to a wide range of materials.	Not suitable for soft materials due to hardening after application.	Not suitable for soft materials due to hardening after application.	May damage base materials containing acrylic, urethane or other organic resin due to decomposition of such resin.
Environmental applicability	Stable in a wide range from extreme cold to high temperature (-50°C to +300°C).	Cracks may occur in the coating when used under extreme temperatures or in cold areas.	Cracks may occur in the coating when used under extreme temperatures or in cold areas.	Performance varies depending on the environment. Little effect can be expected where there is no or only weak sunlight (ultraviolet light) which activates the photocatalyst.
After application	Almost no deterioration or discoloration of the treated surfaces.	May cause discoloration or texture alteration to the treated surfaces.	May cause discoloration or texture alteration to the treated surfaces.	Application is difficult and requires skills. An excessively thick coat may appear opaque.
Durability and maintenance	Provides water repellency and stain resistance to the base material itself. The effects last long, without concern for separation of coating films which could affect the performance. Maintenance, repair and repainting can be done on the base material.	Because of the tight bonds between the coating film and the painting surface, repainting may be very difficult when the paint film is damaged by external impact or the like. Repair to the painting surface beneath the coating may be also difficult. Partial repair is extremely difficult.	Relatively durable, but poor in crack followability because of the hardness of coating films. Coating films lack shrinkability and may fall off easily by various factors.	Decomposes the base material. This prevents adequate adhesion to the base surface and, consequently, affects longevity of the effect.
Application and cost	Sprayed to the base surface immediately after cleaning, and finished by wiping. No special skills are required. Applicable to a variety of materials, with no need for any protective measures. Application cost is reasonable.	Sprayed to the base surface immediately after cleaning, and finished by wiping. No special skills are required. Compatible materials are limited, requiring additional cost for protective measures.	Requires expertise in application. Training may be necessary. Compatible materials are limited, requiring additional cost for protective measures.	Requires expertise in application. Should be done by operators with special knowledge. Unit price is high, and compatible materials are limited, requiring additional cost for protective measures.



Major applications

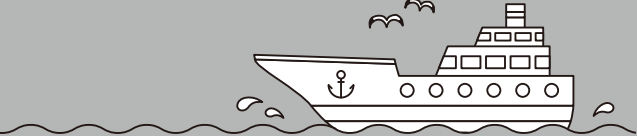
Recommend to the automobile and motorcycle



Houses, shops, restaurants and guest rooms
Useful in preventing water scales (white deposits) on doors and faucets of bathrooms, water scales on mirrors of washrooms, oil stains on fan units and other kitchen equipment, stains on lavatory equipment, dust buildup on home electric appliances, lighting apparatus and glass window panes. Also effective on glassware and showcases in shops.



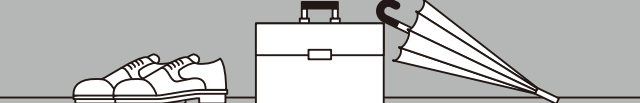
Metal equipment, indoor and outdoor facilities
Effective in preventing buildup of various stain substances not only on indoor equipment but on outdoor equipment, making cleaning very easy. Suitable for air conditioner outdoor units and other outdoor facilities which require hygienic attention to make them stain resistant and easy to clean. Also protects equipment from deterioration by ultraviolet light and salt damage.



Ships and watercraft
Effective in preventing salt damage and water scales. Useful on vehicles used in seaside areas and also on ships above the waterline.



Buildings and structures
Protects trackside buildings and structures from adhesion of iron powders. Effective on walls of buildings, glass window panes, automatic doors, elevators and others exposed to frequent contact with people, and equipment like outdoor lighting and solar panels which require regular cleaning maintenance. Also effective in salt damage prevention in seaside areas. Useful in suppressing ultraviolet light deterioration of sealing materials.



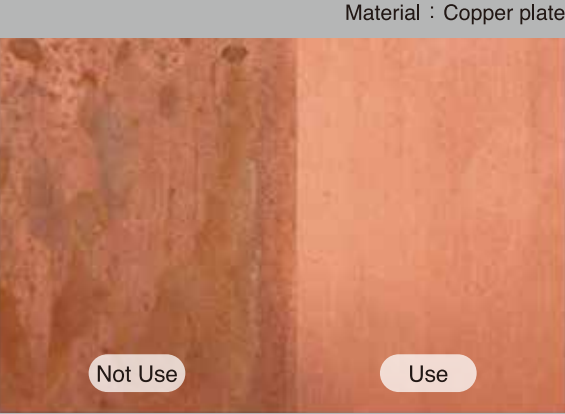
Daily commodities and others for long-term aesthetics
Makes umbrellas, bags and shoes water repellent and stain resistant. Protects precious furniture and household equipment from discoloration or deterioration by sebum or detergents, making them stain resistant and easy to clean.



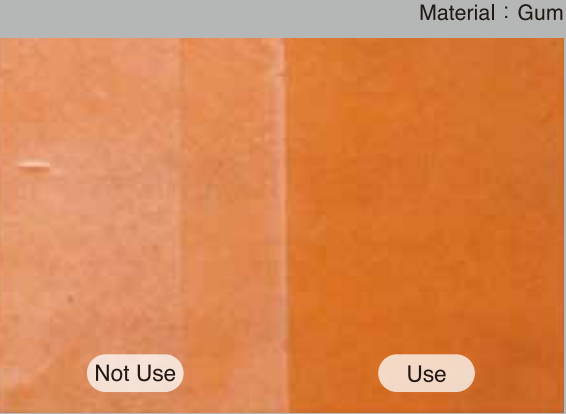
Waste disposal
Prevents buildup of stains or makes stains easily removable on bottom trays in pet toilets, toilets and waste boxes of public facilities, and others which are difficult to clean. Also effective in odor or infection countermeasures due to the microbial and viral invasion control effect.

Experimental result

Salt water corrosion experiment



Ultraviolet degradation experiment



Water-repellent experiment



Product basic data

Ingredients : modified silicone, isopropyl alcohol, PTFE and super-charged water
Appearance : opaque white
pH : 6.6
Density (15°C) : 0.85 to 0.90 g/cm3

Performance testing data

Weatherability (Gloss retention)			Contact angle			Adhesion test		
	150h	300h		0h	150h	300h	Type of adhesive	*Adhesive power [N/10 mm]
USE	102.5%	103.3%	USE	102.4	88.4	80.8	Before coating	Rubber 2.90 Acrylic 4.07
Not USE	100.7%	100.8%	Not USE	76.6	74.3	75.5	After coating	0.03 0.47

Test : Osaka Industry Laboratory

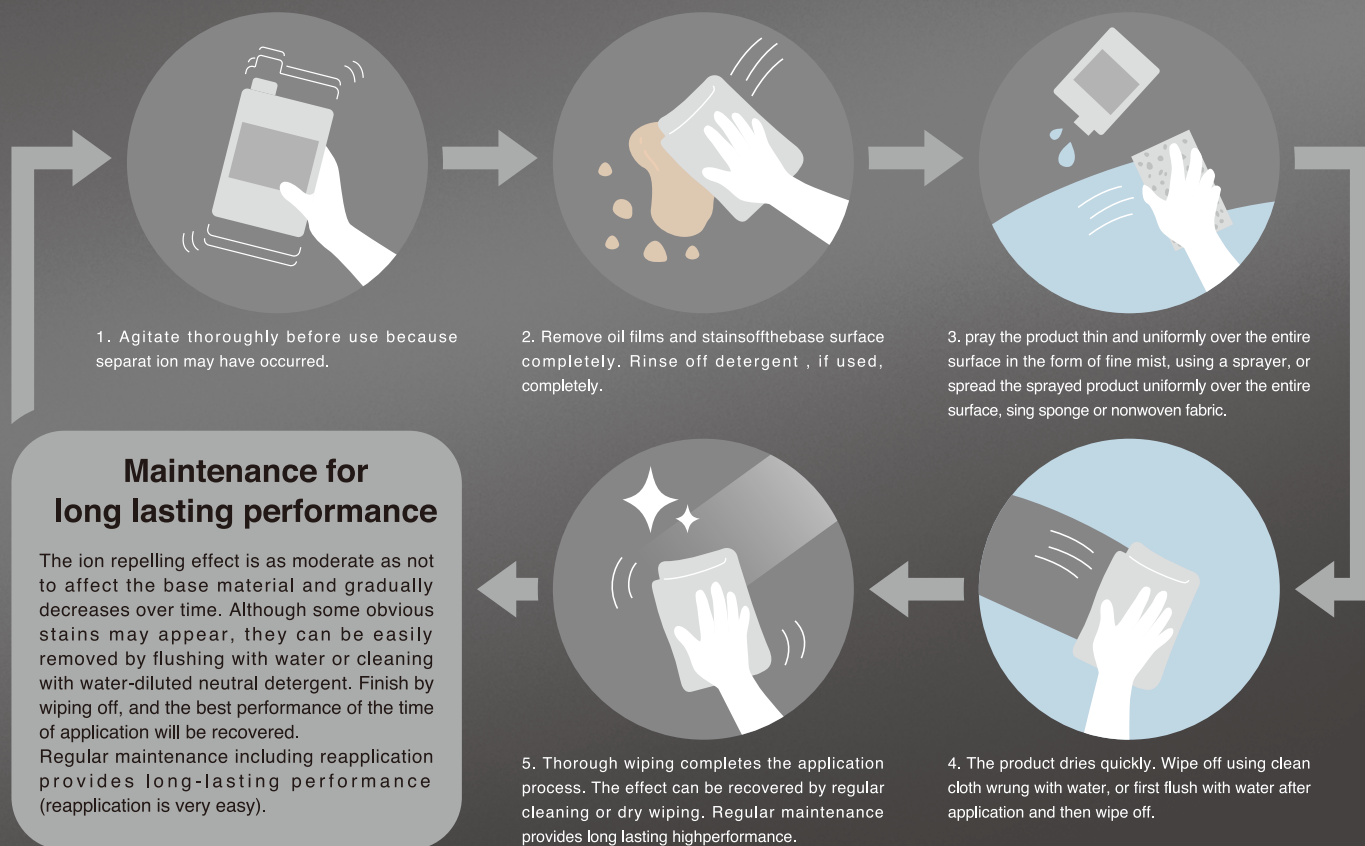
Precautions for use

- Be sure to agitate thoroughly before use because separation may occur.
- The effect gradually decreases over time, especially when exposed to intense physical friction or rubbing. Note that the effect may reduce earlier than expected when exposed to intense friction frequently or continuously.
- Clean the base surface thoroughly to remove stains completely before application.
- Completely or almost completely dry the base surface before application, and finish by thoroughly wiping off after application. Should it be difficult, apply the product to a slightly wet surface and wipe off moisture completely.
- When this product needs to be removed, the original condition can be recovered by cleaning using abrasive cleaner.
- Care should be taken not to drink or allow to enter the eyes. Should the product get into the eyes, rinse with water immediately. It is recommended to seek medical attention.
- Store this product in a cool and dark place, and avoid ultraviolet light and high temperatures during storage. After use, tightly close the stopper of the container because the content is highly volatile.
- This product contains alcohol. Do not store or use this product in the presence of fire. Do not use in a confined place. Ensure adequate ventilation during use.

How to use

Be sure to agitate the product before use because separation may occur. In order to obtain the best performance, thoroughly clean or remove stains, if any, off the base surface. When the surface is completely or almost dry, spray the product using a sprayer, and spread it thin and uniformly over the entire surface, using nonwoven fabric or hard sponge. Finish by thoroughly wiping with clean cloth wrung off with water.

Note: Thick application does not increase the effect or can even result in inadequate performance. Apply this product as thin as possible.



SSP Co.,Ltd.

〒306-0214 740 KOYA, KOGA-CITY, IBARAKI
Tel. +81-280-91-0350 Fax. +81-280-92-3454



<https://ssp-co.jp>