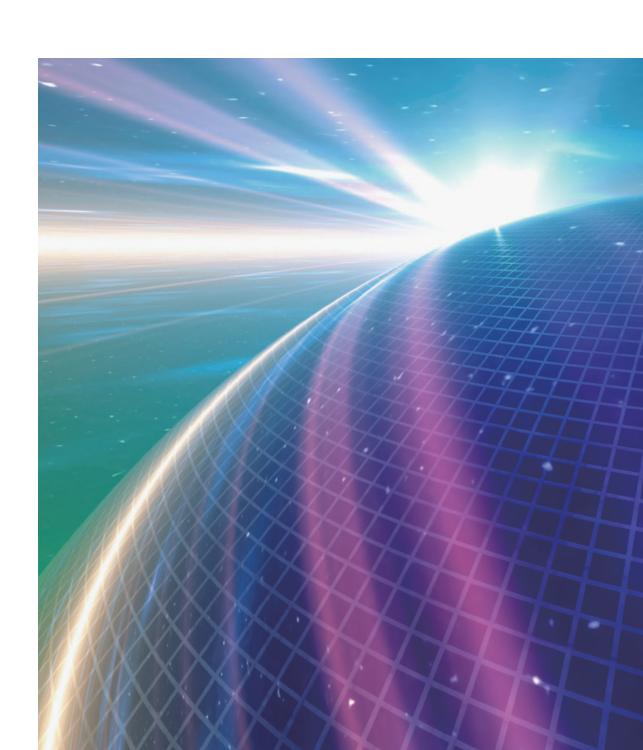


Nissin Chemical Industry Co.,Ltd.

CHALINE®

Silicone/Acrylic Group Hybrid Resin

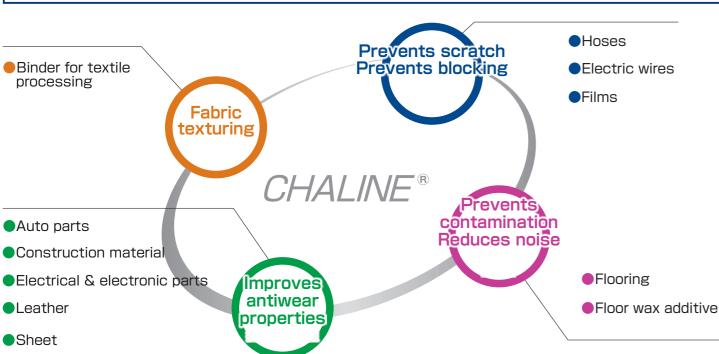


What is CHALINE®?

CHALINE®

CHALINE® is a silicone/acrylic hybrid resin, which offers the superior tribological properties of silicone resin and acrylic resin's excellent compatibility with other types of resin. It realizes the long-lasting improvement of the sliding properties for a variety of resins.

CHALINE® is available in two types: CHALINE® R in powder form and CHALINE® E in emulsion form.



CHALINE® R (Powder)

CHALINE® R

CHALINE® R is a powder-type product that maximizes sliding performance for a variety of resin. It is compatible with many synthetic resins due to it being acrylic-modified silicone, and forms polymer alloys.

1. Can be used with a wide range of synthetic resins

Features a high level of compatibility, which is provided by acrylate groups, and therefore can be used with many different resins.

2. Superior and long-lasting sliding properties

Features a high level of sliding properties, which is provided by its silyl groups, and therefore realizes the long-lasting improvement of the sliding properties of resins.

3. Superior abrasion resistance

Provides improved wear resistance due to superior sliding properties, and is also effective for preventing abnormal noises, such as the sounds of vibrations and squeaking.

4. Superior prevention of blocking

Effective at preventing both blocking and adhesion.

Grade	Silicone content	Form	Ave.particle Diameter (μm)	Volatile components (%)	Sliding properties	Compatibility	Transparency	Dispersibility
R-170	70%	Irregular	350	5 or less	0	0	Δ	0
R-170S	70%	Spherical	30	1 or less	0	0	Δ	0

- Main component: acrylic-silicone resin
- Appearance: white powder
- ●Packaging:R-170:20kg heavy duty shipping sack R-170S:25kg heavy duty shipping sack

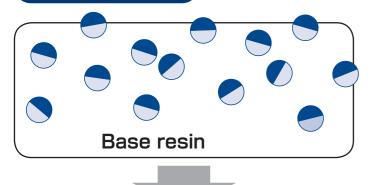
Note) The primary particle diameter is approximately 0.2-0.3 μ m





● CHALINE® R

Functions



Silicone resin (improves sliding properties)

Acrylic resin (provides compatibility)

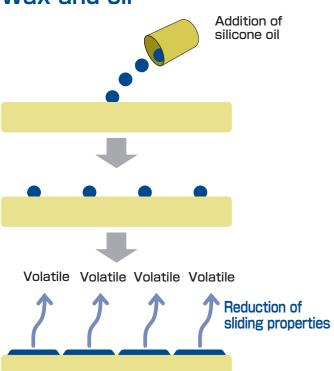
Long-lasting improvement of sliding properties Reducing friction, increasing abrasion resistance, and preventing abnormal noises, such as the sounds of vibrations and squeaking

Preventing blocking, adhesion and contamination

Features 特征

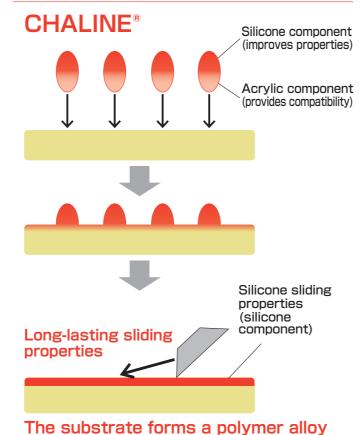
■ Conventional technology





The silicone component bleeds out into the substrate.

New technology



with the acrylic component.

Usage

Standard amount of additive: 1~30 PHR

Plastics

Base polymer Various additives CHALINE®

Double screw extruder

Pelletized Compounds



Extrusion molding Injection molding

Synthetic Leather

Base polymer Various additives CHALINE®

Henschel mixer



Calendar molding

Synthetic Rubber

Base polymer Various additives CHALINE®

Open roll Pressure kneader Banbury mixer



Useable Resins

Polyethylene, polypropylene, vinyl chloride, EVA, ABS, polycarbonate, polyamide, thermoplastic elastomers (TPO, TPU and TPS), EPDM and NBR



Examples of Products

Use	Product					
Automobile parts	Glass run channels, weatherstrips, side moldings, various kinds of mats, headrests, armrests, dashboards, etc.					
Construction materials	Window frame gaskets and various kinds of packaging					
Sheets and films	High-grade leather, high-grade sheets, tablecloths, tarpaulins, floorings (top coat), flexible containers and curing sheets					
Hoses	Industrial hoses, civil engineering hoses, high-grade garden hoses, home appliance hoses (for washing machines, cleaners and shower), etc.					
Electrical wiring	Power line sheaths, cabtyre cable sheaths, wire harnesses and other abrasion-resistant electrical wires for equipment					

CHALINE® E (Emulsion)

CHALINE® E

A lubricant coating derived from our experience of adding sliding properties to CHALINE® R-170S, together with the acrylic resin's film forming ability. It builds a lubricating water-resistant film which improves wear resistance as well as weather resistance, reduces noise, refines the texture and more. The emulsion is environment friendly too, as it is water-based.



Grade	Main ingredient	Solid content (%)	content Type-B		lonicity	Feature	
LC-190	Silicone:acrylic 90:10	42-45	≦500	5~8	Anion	High wear resistance. Enhanced resistance properties in architectural paints.	
E-790	Silicone:acrylic 95:5	42-45	≦500	5~8	Anion	Boosted wear resistance. Highest silicone content among emulsion grades.	
E-370	Silicone:acrylic 70:30	43-46	≦500	5~8	Anion	Noise reduction. Anti-fouling. Anti-blocking. Scratch-resistance.	

Appearance: white emulsion

Packaging: 16kg canisters - LC-190 & E-790 18kg canisters - E-370

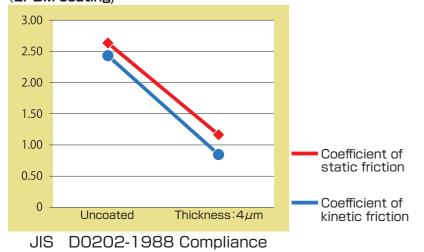
Usage

Bar coating / Dip-dry coating / Mix into base coat

Examples of Products

Rubber products / plastic products / miscellaneous films

Friction Properties (EPDM coating)

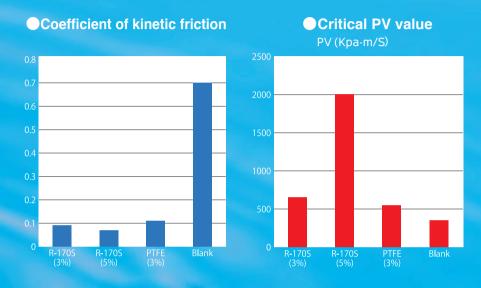






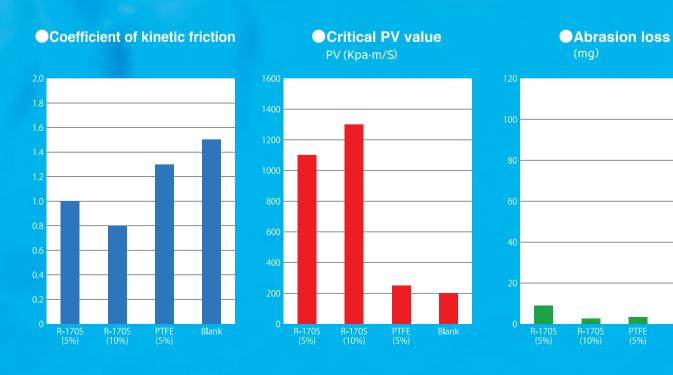
The addition effect to resins

Polycarbonate resin JISK7218 (Ring-on-disc test)



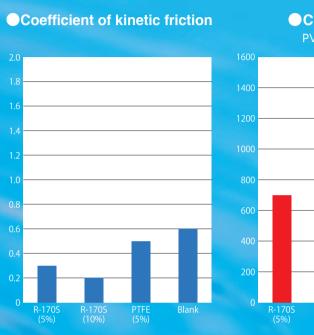


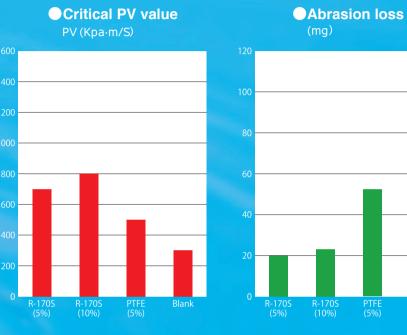
Polyurethane resin JISK7218 (Ring-on-disc test)



The addition effect to resins

Polyolefin resin JISK7218 (Ring-on-disc test)

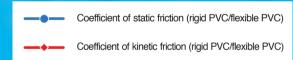


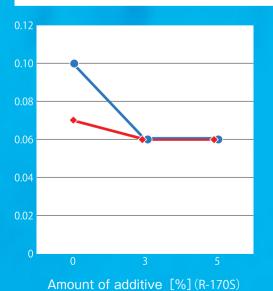


■ Vinyl chloride resin

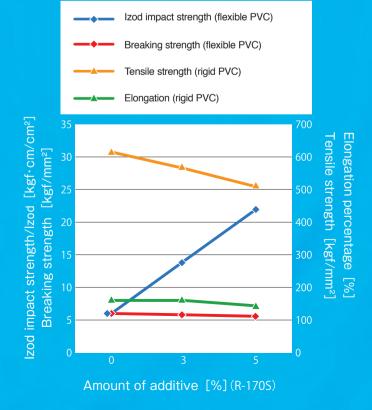
Measurement: HEIDONTAIPE14DR

• Friction characteristics





Physical strengths







For more information on CHALINE® please contact:

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