

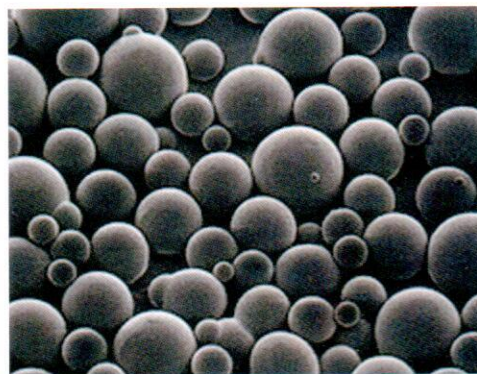
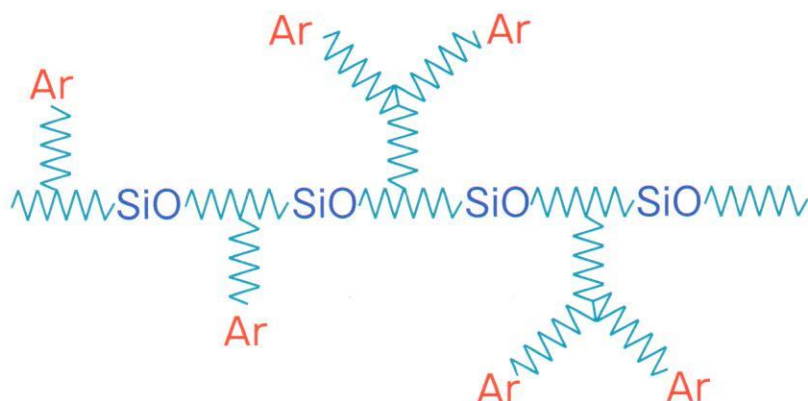
What is CHALINE® ?

CHALINE® 是什么

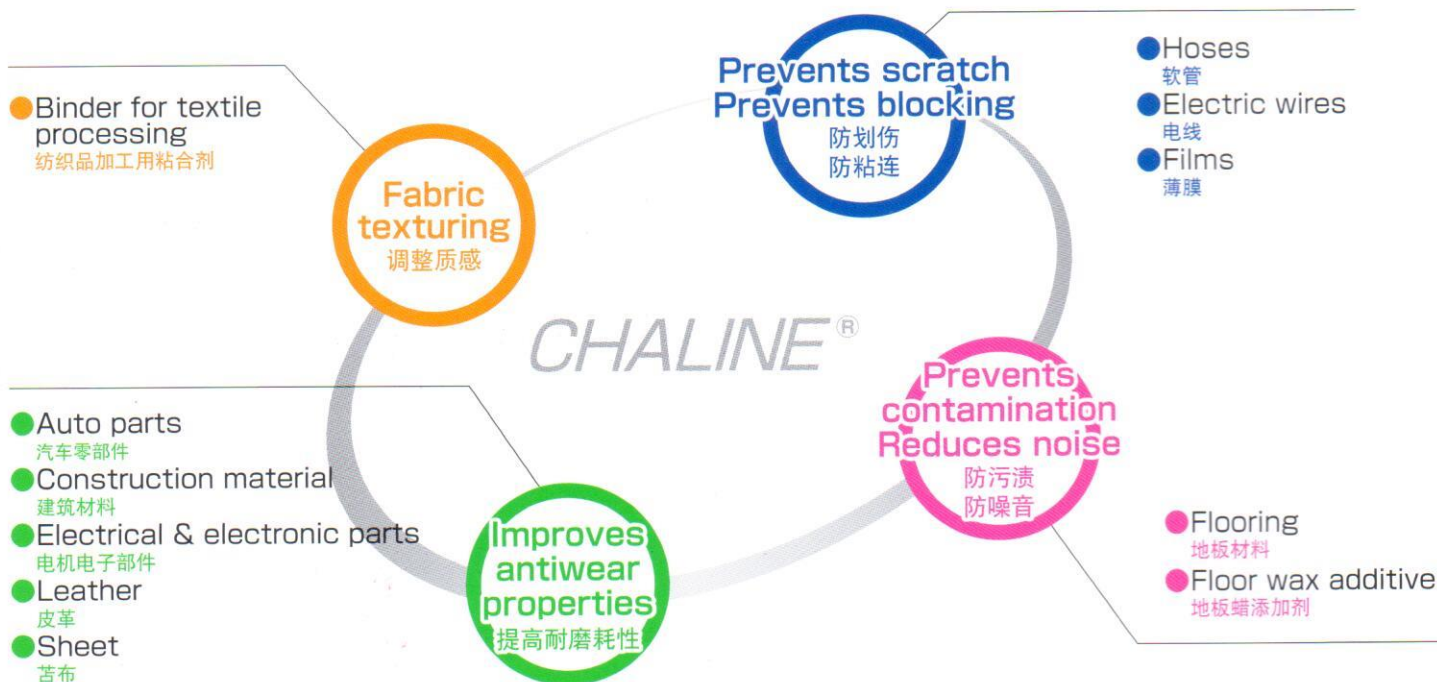
CHALINE® is a silicone/acrylic hybrid resin, which offers the superior tribological properties of silicone resin and acrylic resin's excellent compatibility with other types of resin. It realizes the long-lasting improvement of the sliding properties for a variety of resins. CHALINE® is available in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

“CHALINE®”是硅·丙烯的共聚合树脂,是融合了硅树脂出色的表面平滑效果与丙烯树脂出色的相溶性的类混合树脂。对于各种各样的树脂赋予其平滑性,并且效果能够持久。我们提供粉末状的CHALINE® R和乳胶状的CHALINE® E。

Structural Schematic Diagram 构造模式图



Electron microscope photograph of CHALINE® R-170S / CHALINE® R-170S的电子显微镜照片



CHALINE® R (Powder)

CHALINE® R (粉末)

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.

“CHALINE® R”为粉末状, 可使各种各样的合成树脂具备平滑性。

通过将有机硅进行丙烯酸变异, 使其与多种合成树脂相容, 并且形成聚合物合金。

1. Can be used with a wide range of synthetic resins 可以广泛应用于多种合成树脂

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

含有亲和性优异的丙烯酸基, 可适用于多种树脂。

2. Superior and long-lasting sliding properties 可以持续保持优异的平滑特性

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.

含有平滑性优异的硅醚基, 能提高平滑效果, 并能持续保持。

3. Superior abrasion resistance 优异的耐磨性

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.

通过其优异的平滑效果提高了其耐磨性。此外, 在防止振动声、摩擦声等噪音方面还可以发挥其作用。

4. Superior prevention of blocking 优异的防粘连性

Effective at preventing both blocking and adhesion.

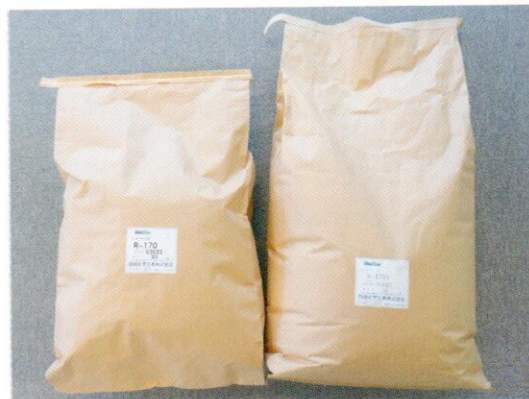
不仅可以防止粘连, 还具有很好的防附着效果。

Grade 产品型号	Silicone content 有机硅含量	Form 形状	Ave. particle Diameter 颗粒平均直径 (μm)	Volatile components 挥发性 (%)	Sliding properties 平滑性	Compatibility 相容性	Transparency 透明性	Dispersibility 分散性
R-170	70%	Irregular 不规则	350	5 or less 5以下	◎	○	△	○
R-170S	70%	Spherical 球状	30	1 or less 1以下	◎	○	△	◎

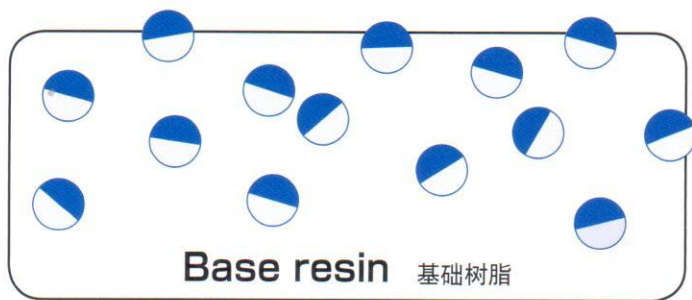
● Main component: acrylic-silicone resin ● 主要成分: 丙烯酸硅树脂 ● Appearance: white powder ● 外观: 白色粉末

● Packaging: R-170: 20kg heavy duty shipping sack R-170S: 25kg heavy duty shipping sack ● 包装: R-170: 20kg 牛皮纸袋 R-170S: 25kg 牛皮纸袋

Note) The primary particle diameter is approximately 0.2-0.3 μm 注) 原生颗粒直径 约0.2-0.3 μm



Functions 功能



Long-lasting improvement of sliding properties
持续的表面平滑性

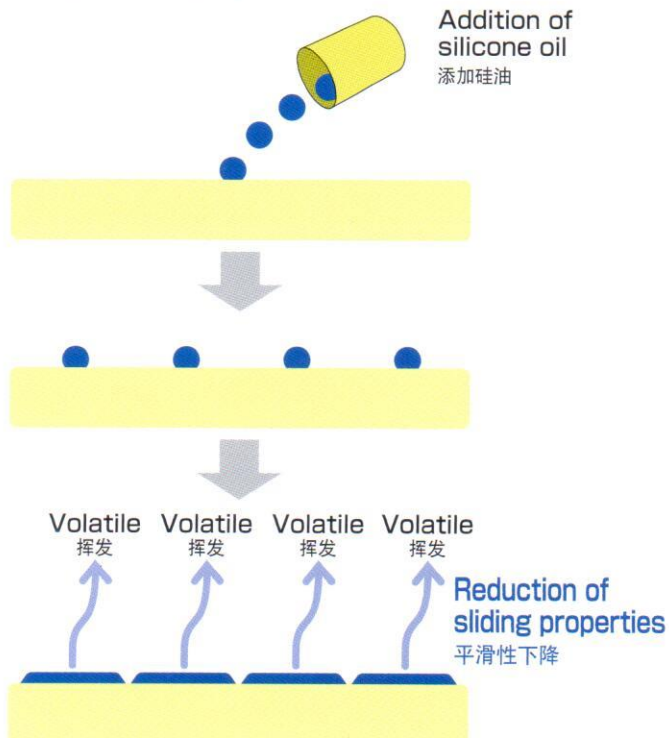
Reducing friction, increasing abrasion resistance, and preventing abnormal noises, such as the sounds of vibrations and squeaking
降低摩擦效果、耐磨性、防止发出噪音 (振动声、摩擦声等)

Preventing blocking, adhesion and contamination
防止粘连、防止附着、防止污渍

Features 特征

Conventional technology 过去的技术

Wax and oil 蜡和硅油

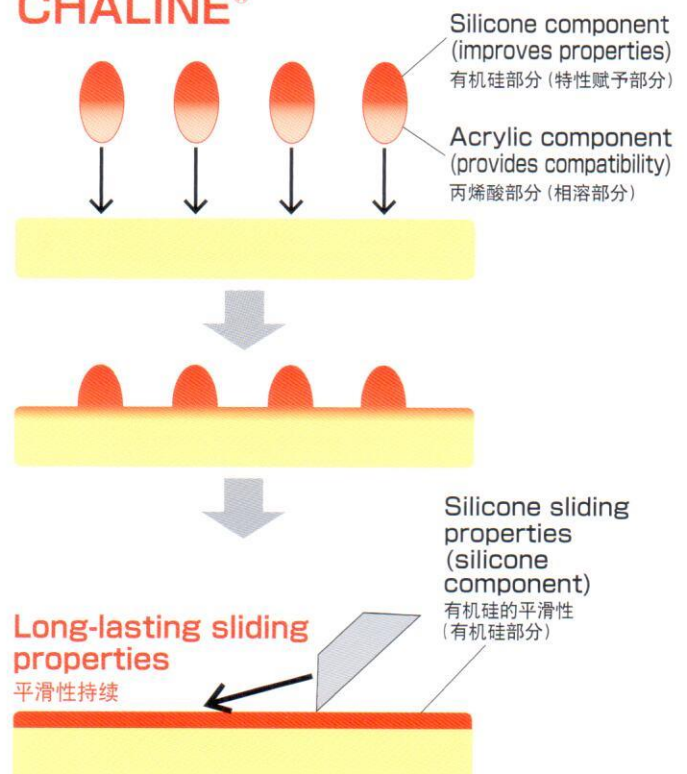


The silicone component bleeds out into the substrate.

有机硅部分渗透到对方一侧的基材中

New technology 新技术

CHALINE®



The substrate forms a polymer alloy with the acrylic component.

基材与丙烯酸部分进行聚合物合金化

Usage

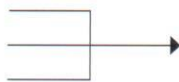
使用方法

Standard amount of additive 标准添加量 : 1~30 PHR

Plastics 塑料

Base polymer
Various additives
CHALINE®

基础聚合物
各种添加剂
CHALINE®



Double screw extruder
双螺杆挤压机

Pelletized
Compounds
颗粒化合物



Extrusion molding
Injection molding
挤压成形
喷射成形

Synthetic Leather 合成皮革

Base polymer
Various additives
CHALINE®

基础聚合物
各种添加剂
CHALINE®



Henschel mixer
亨舍尔混合机

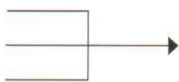


Calendar molding
压延成形

Synthetic Rubber 合成橡胶

Base polymer
Various additives
CHALINE®

基础聚合物
各种添加剂
CHALINE®



Open roll
Pressure kneader
Banbury mixer
开放式辊压机
压力式捏合机
班伯里密炼机



Useable Resins

适用树脂

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

聚乙烯、聚丙烯、氯乙烯、EVA、ABS、聚碳酸酯、聚酰胺、热塑性弹性体 (TPO、TPU、TPS)、EPDM、NBR



Examples of Products

应用产品

Use 用途	Product 应用产品
Automobile parts 汽车零部件	Glass run channels, weatherstrips, side moldings, various kinds of mats, headrests, armrests, dashboards, etc. 车窗玻璃导槽、挡风雨条、车侧装饰条、各种垫子、头枕、扶手、仪表盘等
Construction materials 建筑材料	Window frame gaskets and various kinds of packaging 窗框密封垫、各种填充物 / 材
Sheets and films 苫布、薄膜	High-grade leather, high-grade sheets, tablecloths, tarpaulins, floorings (top coat), flexible containers and curing sheets 高档皮革、高档苫布、台布、防水帆布、地板材料(面漆)、柔性集装袋、养护布
Hoses 软管类	Industrial hoses, civil engineering hoses, high-grade garden hoses, home appliance hoses (for washing machines, cleaners and shower), etc. 工业用软管、土木软管、高档园艺软管、家电用住宅软管(用于洗衣机、吸尘器、淋浴器)等
Electrical wiring 电线	Power line sheaths, cabtyre cable sheaths, wire harnesses and other abrasion-resistant electrical wires for equipment 电源线护套、绝缘护套、电线束等机器用耐磨性电线

CHALINE® E (Emulsion)

CHALINE® E (乳胶)

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.

CHALINE® E(乳胶)同时具有CHALINE® R-170S的平滑性能和丙烯酸树脂的皮膜形成性能, 是一种可增进平滑性的涂布型复合树脂。该产品可形成平滑且耐水的皮膜, 在发挥其耐磨耗性和耐候性的同时, 还能起到减少噪音、增进质感等效果。该产品属于水性乳胶型材料, 因此还可减轻环境负担。



Grade 产品型号	Silicone content 有机硅含量	Solid content 浓度 (%)	Viscosity/ Type-B 粘度 (mPa.s/20°C)	pH	Ionicity 离子性	Feature 特征
FE-230N	50%	30	≤500	6~9	Anionic 阴离子	Elastic impact resilience 柔软的反弹性
NE-500	30%	60	<1500	6~8	Anionic 阴离子	Tenacity, high solid matter content 强韧性、高固形物
R-170EM	70%	45	≤500	5~7	Anionic 阴离子	Lubrication 赋予平滑性

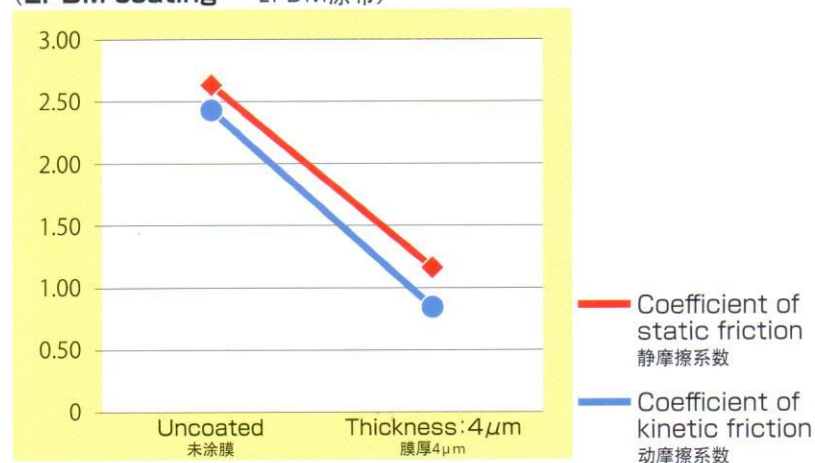
● Main component: acrylic-silicone resin ● 主要成分: 丙烯酸树脂 ● Appearance: white emulsion ● 外观: 白色乳胶
● Packaging: 18kg steel can ● 包装: 18kg铁桶

Examples of Products 应用产品

Rubber products / plastic products / miscellaneous films

橡胶产品、塑料产品及各种薄膜

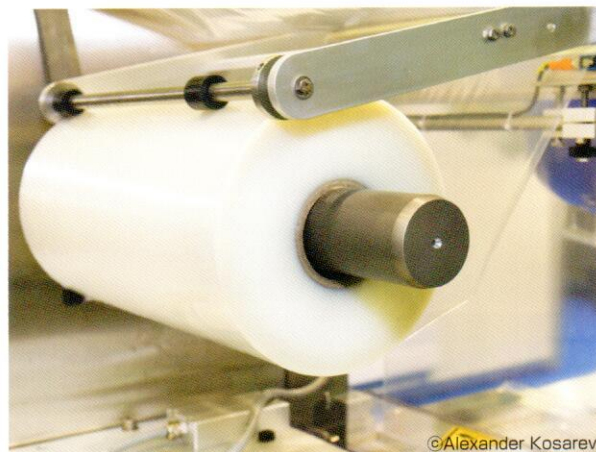
Friction Properties 摩擦特性
(EPDM coating EPDM涂布)



JIS D0202-1988 Compliance
JIS D0202-1988 标准

Usage 使用方法

- Bar coating
- Dip-dry coating
- Mix into base coat
- 刮片涂膜
- 浸渍干燥涂膜
- 添加至基础涂料



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The addition effect to resins 向树脂的加添效果

■ Polyolefin resin

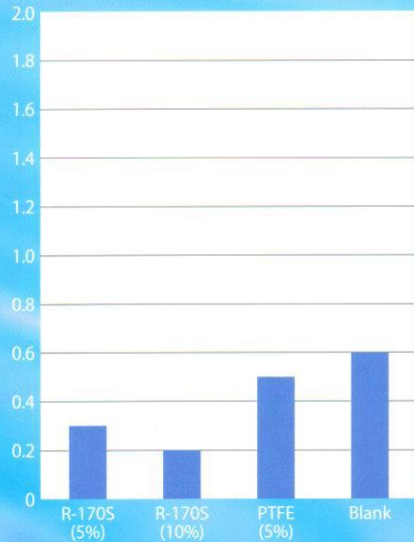
聚烯烃树脂

JISK7218 (Ring-on-disc test)

JISK7218 (环对盘磨耗试验法)

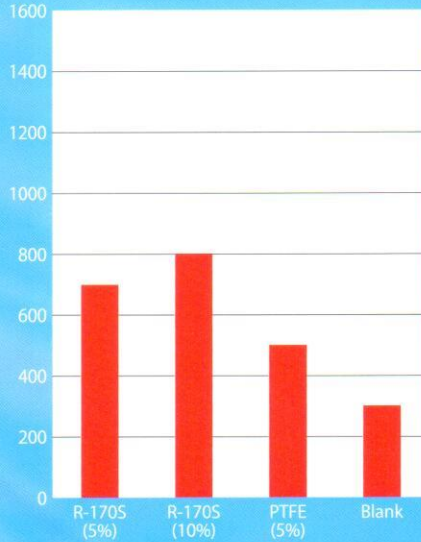
● Coefficient of kinetic friction

动摩擦系数



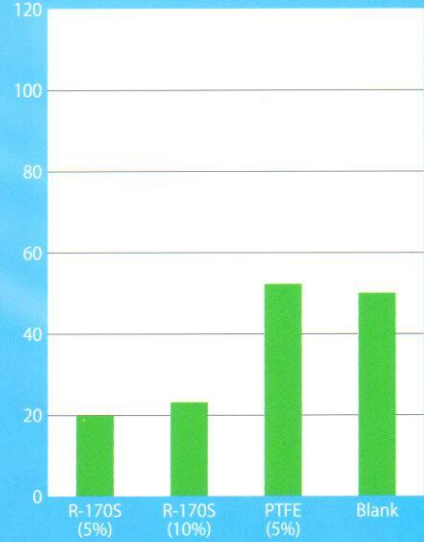
● Critical PV value

PV界限值 (Kpa·m/S)



● Abrasion loss

磨耗量 (mg)



■ Vinyl chloride resin

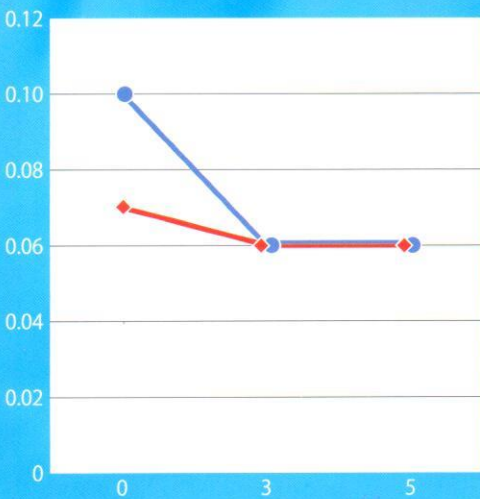
氯乙烯树脂

Measurement 测定: HEIDONTAIP14DR

● Physical strengths 物理性强度

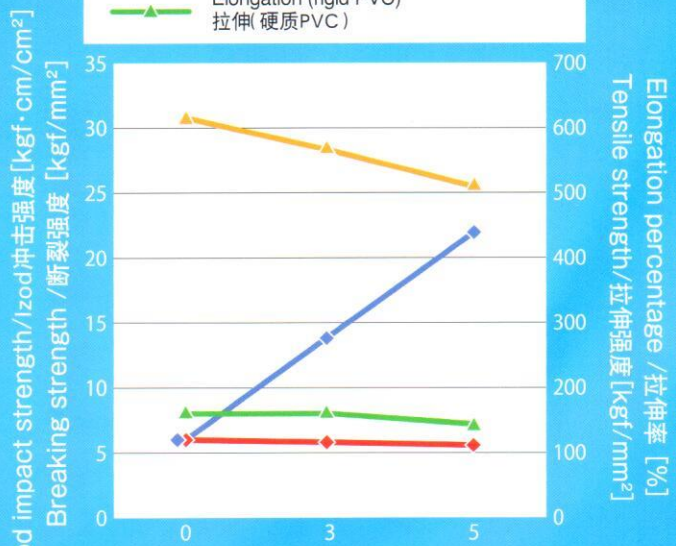
● Friction characteristics 摩擦特性

- Coefficient of static friction (rigid PVC/flexible PVC)
静摩擦系数(硬质PVC/软质PVC)
- Coefficient of kinetic friction (rigid PVC/flexible PVC)
动摩擦系数(硬质PVC/软质PVC)



Amount of additive / 添加量 [%] (R-170S)

- Izod impact strength (flexible PVC)
Izod冲击强度(软质PVC)
- Breaking strength (flexible PVC)
破断强度(软质PVC)
- Tensile strength (rigid PVC)
引张强度(硬质PVC)
- Elongation (rigid PVC)
拉伸(硬质PVC)



Amount of additive / 添加量 [%] (R-170S)

The addition effect to resins 向树脂的加添效果

Polycarbonate resin

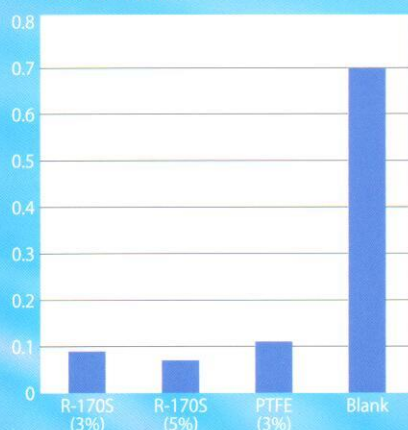
聚碳酸酯树脂

JISK7218 (Ring-on-disc test)

JISK7218 (环对盘磨损试验法)

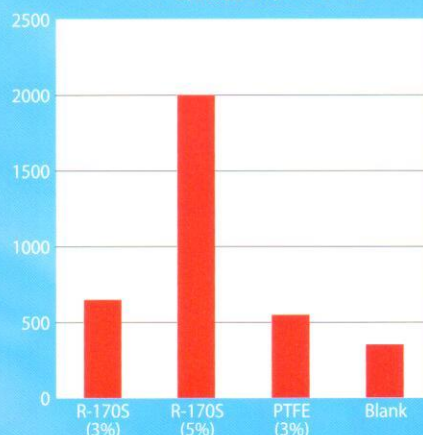
● Coefficient of kinetic friction

动摩擦系数



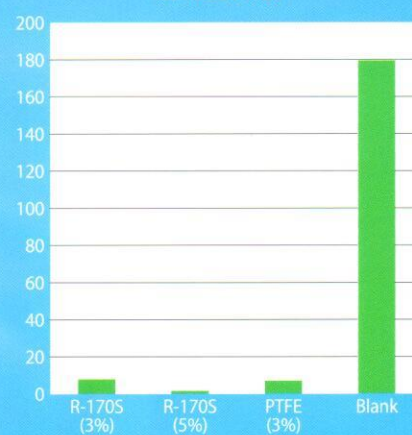
● Critical PV value

PV界限值 (Kpa·m/S)



● Abrasion loss

磨损量 (mg)



Polyurethane resin

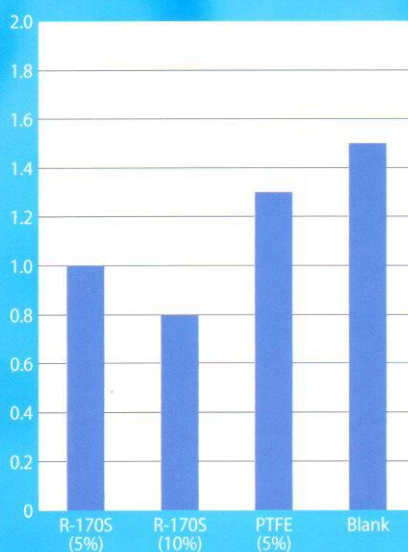
聚氨酯树脂

JISK7218 (Ring-on-disc test)

JISK7218 (环对盘磨损试验法)

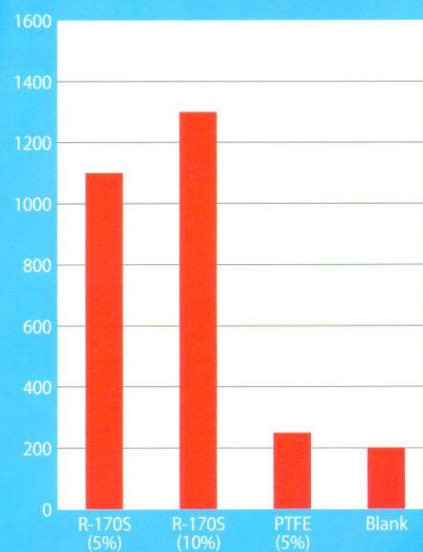
● Coefficient of kinetic friction

动摩擦系数



● Critical PV value

PV界限值 (Kpa·m/S)



● Abrasion loss

磨损量 (mg)

