

CHALINE® R-170 & R-170S

TECHNICAL DATA SHEET

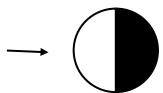
Product description

CHALINE® R (Powder) is the trade name of the resin powder of the acryl and silicone co-polymer, which was invented and developed by Nissin Chemical Co. CHALINE® R (Powder) provides sustainable slideness onto the surfaces of various resins

Product characteristics

Silicone group

Reduces friction



Acrylic group

Increases compatibility with other resins

Resins formulated with CHALINE R-170S

Decrease friction, anti-ablation creak, fricative noise, etc.
Prevent stickiness and stain of the surface, anti-blocking

Appearance: Fine powder with a light yellow color

Packaging:

Paper bag - Inside: polyethylene bag, single layer

Outside: paper bag

Net Wt.: R-170 –20kg

R-170S –25kg

CHALINE® R-170 & R-170S can be used to produce various polymer alloys with conventional resins.

- Both are available for making polymer alloys with various resins such as PVC, PE, EPDM due to their compatibility with acrylic functional groups.
- CHALINE® R-170 & R-170S create sustainable slideness onto the surfaces of many types of resins.
- Anti-ablation property—The slideness leads to anti-ablation effects and prevents uncomfortable creak or noise from vibration.
- Non-Blocking effects—CHALINE® R-170 & R-170S gives sticky-free and non-blocking properties to dirty surfaces.

Processing Information

Base polymer (PVC, PE, EPDM, etc.). Plasticizer, Stabilizer, etc. Other additives

CHALINE® R (Powder)

Kneading

Molding, Extruding, Sheeting

Specifications

Attributes	R-170	R-170S
Particle size (μm)	350	30
Form	Irregular	Spherical
Loss on drying (%)	≤ 5	≤ 5
Glide	When mixed with a resin, the surface becomes very smooth and a glide (slippery) property can be added.	
Transparency	When mixed with a transparent resin, it becomes clouded.	
Compatibility	Can be mixed with many resins, such as PVC, Polycarbonate, Polyurethane, etc. It cannot be mixed with some resin, such as Silicone rubber.	
Dispersibility	Disperses, uniformly in resins.	Disperses very well, and uniformly in resins.

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CHALINE R-170 & R-170S

Applications

Base polymers for application: PVC, various acrylic resins, EPDM, etc.

- Automotive: weather strips, side molding, glass run channels, head and arm rests, dashboards, mats, etc.
- Construction Materials: sash gaskets, packing material, etc.
- Sheets and Films: luxury synthetic leather, various sheets, table cloths, tarpaulins, floor material (top coat), Flexible containers, etc.
- Hoses: industrial grades, luxury garden hoses, hoses for household electric appliances.
- Electric cables: cables for machines, anti-abrasion cable, etc.

Technical Data

Effects of adding CHALINE® R-170S

Poly vinyl chloride (PVC)

Table 1 Flexible PVC	Addition rate of CHALINE® R-170S (PHR)			
	0	5	10	20
Coefficient of static friction	2.66	1.40	0.36	0.18
Coefficient of kinetic friction	1.53	0.64	0.15	0.11
Tensile strength (kg/cm ²)	300	285	270	245
Rate of extension (%)	350	350	340	320

Table 2 Rigid PVC	Addition rate of CHALINE® R-170S (PHR)		
	0	3	5
Coefficient of static friction	0.10	0.05	0.05
Coefficient of kinetic friction	0.08	0.05	0.05
Tensile strength (kg/cm ²)	615	560	515
Rate of extension (%)	160	160	140

Table 3 EPDM	Addition rate of CHALINE® R-170S (PHR)			
	0	2	5	10
Coefficient of static friction	1.00	0.80	0.60	0.40
Coefficient of kinetic friction	0.80	0.80	0.56	0.30

Formulation of Experimental Sample*

Flexible PVC	
PVC (P:1000, TK-1000)	100(PHR)
Tribasic lead sulfate (TS)	2
Lead stearate (Pb-St)	1
CHALINE® R-170S	3, 5, 10

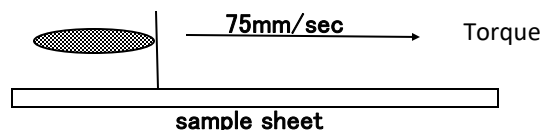
Rigid PVC

PVC (P:1300, TK-1300)	100(PHR)
Plasticizer (DOP)	2
Epoxidates soybean oil (o-130p)	3
Stabilizer (barium soap : RUP-10)	1
Stabilizer (barium soap : AC-186)	1
Calcium carbonate (NS-400)	10
CHALINE® R-170S	0,3, 5, 10,20

EPDM

EPDM	100(PHR)
Zinc white	5
HAF carbon	60
Process oil	20
Nockcerer TS	1.5
Accel M	0.5
Sulfur compound	1.5

Method of measuring coefficient of friction



- To make a flat sheet of these compounds PVC, (EPDM) wipe the surface of the sheet with gauze wetter with ethanol. If necessary, polish the surface with sand paper AA-180.
- Measure the torque, when the weight is slid on the sample sheet on following conditions. Weight: cylinder, 50g weight, 10φ *15mm size, made of sus. Tensile speed : 75mm/sec
- The coefficients are calculated by the following method.
Coefficient = measurement of the torque/the load
Coefficient of friction: substitute measurement of the torque at time the weight starts to move, to the expression.
- Coefficient of kinetic friction : substitute measurement of torque in time the weight are moving, to the expression.
- Surface characteristics measured on "Toraigia 140R" made by Shin-Etsu Chemical Co., Ltd.



Caution

- ◆ Follow the precautions in the material safety data sheet and technical references.
- ◆ CHALINE® is for industrial use only.
- ◆ The data in the this document does not include all specifications. Purchasers must conduct tests of their own before putting the product to practical use to verify its compliance, with their intentions for its employment.
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