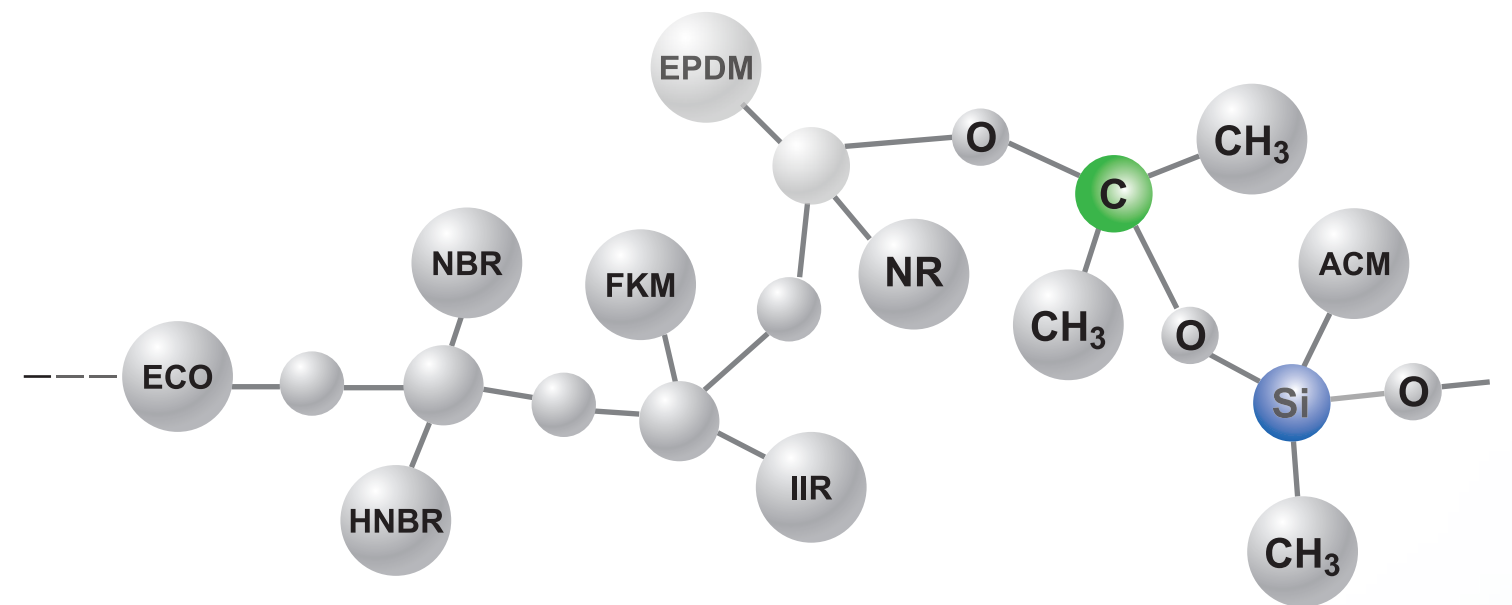


# 善贞集团

SANEZEN GROUP



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SANEZEN GROUP

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高端橡胶圈

## 低碳科技 引领未来

Low-Carbon Technology: Pioneering a Sustainable Future



## SANEZEN Group

**Company Profile:** SANEZEN is a global new materials enterprise specializing in green technology and smart manufacturing, we mainly serve the rubber and plastics industries including tire manufacturing, rubber products, and plastic products. and high-performance rubber compounds. Committed to reshaping a sustainable future for the industry through technological innovation, we deliver full-chain services from advanced material R&D to customized solutions. Driven by smart manufacturing, we establish green production systems to create efficient, clean, and low-carbon industrial ecosystems for global clients.

**Technology Innovation:** As the core DNA of SANEZEN Group, our Shanghai-based headquarters is supported by branches in Guangzhou, Changzhou, Shenyang, Chengdu, and Hong Kong, along with three production facilities in Xuancheng and Shanghai, and three R&D centers. Our market, sales, and technical teams comprise industry-leading professionals renowned for market acumen, technological ingenuity, and solution-oriented expertise. We relentlessly pioneer eco-friendly technologies and novel materials to deliver sustainable product and technical solutions.

**Products&Services:** Comprehensive offerings include: raw rubber systems, plasticizer systems, functional filler systems, silicone & fluorosilicon systems, functional additive systems, and full-range rubber compound services. With an extensive product lineup and robust supply chain, we serve diverse industries including automotive, rail transport, aerospace, electronics, construction, power, energy, healthcare, and household goods, positioning us as a true one-stop rubber solutions provider.

**Marketing Channels:** SANEZEN has a professional marketing team with rich knowledge and can respond to customers' complex needs and provide total solutions and package products in a timely manner. SANEZEN pays great attention to customer feedback and needs and keeps close communication with customers to meet their changing needs.

**Social Citizens:** SANEZEN is a virtuous company that pays attention to the corporate social responsibility, environmental protection, energy-saving, and emission reduction in every process of technology, production, and supply chain. SANEZEN actively participates in various public welfare activities and social organizations to make contributions to society and the environment.

**Sustainable Development:** SANEZEN never stops moving forward and continues upholding the spirit of "cultivate people, technology innovation, lean production, win-win cooperation". SANEZEN promotes technological innovation and product optimization to provide customers with better quality products and services and strives to become a respected partner in the rubber industry.

### SANEZEN Group – Beyond Materials, Committed to the Future

SANEZEN believe every technological breakthrough is a guardian's pledge to our planet, and every client's trust is a vote for sustainability.



## 善贞集团

### 公司简介

一家聚焦绿色科技与智能制造的全球化新材料企业，主要服务轮胎、橡胶制品、塑料制品等橡塑行业，致力于通过科技创新重塑行业可持续未来。我们不仅提供从新材料研发到定制化解决方案的全链条服务，更以智能制造为驱动，构建绿色生产体系，为全球客户打造高效、清洁、低碳的工业生态系统。

### 科技创新

善贞集团的核心灵魂，公司总部位于中国上海，在广州、常州、沈阳、成都、香港等设有自己的分支机构，在宣城、上海拥有三家工厂及三家研发中心，同时我们的市场、销售与技术团队由一批行业内的优秀专业人才组成，具备很强的市场敏锐度、技术创新和解决方案能力。不断探索环保应用的新技术和新材料，提供可持续发展的产品及技术解决方案。

### 产品服务

涵盖：生胶体系、增塑剂体系、功能填料体系、硅氟体系、功能助剂体系、全系列混炼胶服务。丰富的产品系列和完善的供应链，服务于汽车、机车、航天航空、电子电器、建筑、电力、能源、医疗卫生、家庭用品等众多行业，真正一站式橡胶解决方案的服务商。

### 营销渠道

覆盖全球多个国家和地区，拥有一支专业知识丰富的顾问式营销团队，能及时响应客户复合需求，为客户提供专业的解决方案和套餐式产品。我们非常注重客户反馈和需求，与客户保持密切沟通，及时满足客户不断变化的需求。

### 社会公民

是善贞人的标签，注重企业的社会责任，在技术、生产、供应链等每一个过程中注重环保和节能减排。积极参与各种公益活动和社会组织，为社会和环境做出贡献。

### 善贞脚步

从未停息，一直向前，持续秉承“以文化人、科技创新、精益生产、合作共赢”的企业精神。持续推进技术创新和产品优化，为客户提供更优质的产品和服务，努力成为橡胶行业受人尊敬的合作伙伴。

### 善贞集团-不止于材料，更关乎未来

善贞相信，每一次技术创新都是对地球的守护，每一份客户信任都是对可持续的投票。

## Strategic Framework of SaneZen Group

### SaneZen Group's Development Philosophy:

Fulfilling social responsibility while pursuing a balanced and sustainable creation of value for customers, employees, shareholders, and society as a whole

● <b>兄弟公司：</b> Brother Company：	善贞实业(上海)有限公司 Sane Zenchem (Shanghai) Co.,Ltd	善贞国际(香港)有限公司 Sanezen International (HK) Limited
	上海玄珞新材料有限公司 Shanghai Powerflex New Material Co.,Ltd	安徽立信橡胶科技有限公司 Anhui Lixin Rubber Technology Co., Ltd
	安徽善信高分子精细材料有限公司 Anhui Sanexin Polymer Fine Material Co.,Ltd	韶湃实业(上海)有限公司 Shaopai Industry (Shanghai) Co.,Ltd
	昇信橡胶(安徽)有限公司 Shengxin Rubber (Anhui) Co., Ltd	

- **Core Mission:** To become the most innovative and respected group in the rubber and plastics industry.
- **Serve Customers:** Provide customers with suitable products and comprehensive services, honoring our commitments.
- **Empower Employees:** Create development platforms and guide employees toward a fulfilling and enriched life.
- **Reward Shareholders:** Achieve sustainable growth and enhance corporate value.
- **Contribute to the Nation:** The rise and fall of the nation concerns us all; we are duty-bound with integrity and goodwill.



### Sane:

**1.Benevolence:** The highest goodness is like water. Water benefits all things without competing. — Laozi, Chapter 8

**2.Excellence in Skill:** Emperor Qin cherished those who were skilled at playing the zhu (a percussion instrument). — Records of the Grand Historian, Biographies of Assassins

**3.Praise for Goodness:** What the ministers and people admire as good, the ruler should also embrace. — Han Feizi, Eight Villains.

### Zen :

**1.Integrity:** To be consistent in word and deed is called steadfastness. — Zhenzi's Taoist Teachings

**2.Loyalty:** To admire the loyalty and chastity of the ancients. — Ode to the Mysterious

**3.Foresight:** Zhengui (divination by turtle shell; practiced by the ancients); Zhenbu (divination or consulting the oracle).



SANZEN Group is a global pioneer in tire material innovation. With the mission of “Technology-Driven Sustainable Future,” the company focuses on the R&D and production of high-performance tire materials. Relying on three major technology centers in Shanghai, Anhui, and Changzhou, SANZEN has built a strong R&D network and a full-industry-chain innovation system, providing environmentally sustainable solutions for tire manufacturers.

In new material development, the fully bio-based filler enhancers (EG series) and nano silicon-aluminum alloy (NSA series) improve wet grip performance and reduce rolling resistance;

carbon nanotubes (CNT series) enhance thermal conductivity and optimize tire performance for electric vehicles;

fully bio-based nano-lignin (LG series) partially replaces carbon black, reducing CO<sub>2</sub> emissions and increasing tear strength. The company reduces carbon emissions and mixing energy consumption through core technologies. By utilizing the “dynamic reinforcement model,” SANZEN optimizes filler networks and lowers heat generation.

SANZEN Group practices the ESG philosophy. Its products comply with EU REACH and ROHS standards, achieving a higher proportion of low-carbon emissions. The focus of new material development is shifting toward bio-based materials. The product line covers tire performance additives, bio-based materials, and green solutions. With the dual engine of “material innovation + process excellence,” SANZEN is driving the tire industry toward a high-performance and sustainable future.



## SANZEN Group : Join the Green Revolution. Redefine the Future with SANEZEN.



### Overview:

GreenThinking® EG22 is a 100% bio-based filler enhancer that promotes silanization reactions, suitable for rubber compounds containing silanes and highly filled reinforcements, particularly those with high-surface-area fillers (e.g., silica). It improves the degree of silanization in fillers (such as silica) and enhances compatibility and dispersion within the rubber matrix due to its unique chemical structure. This facilitates the formation of a more effective network structure, thereby enhancing overall material performance.

### Applications:

GreenThinking® EG22 is widely used in rubber formulations containing silanes and highly filled reinforcements, meeting the demand for low rolling resistance, improved wet grip, reduced heat build-up, and eco-friendly, low-carbon tires. It reduces the Payne effect of fillers, aids in filler dispersion, lowers compound Mooney viscosity, and improves rubber processability. It also enhances tear resistance and other performance characteristics.

### Key Features:

#### 1. Dynamic Performance Optimization

Improves filler dispersion and promotes silanization, effectively enhancing rolling resistance and wet grip performance.

#### 2. Filler Dispersion & Mixing Performance

Accelerates filler incorporation and dispersion, significantly shortening mixing cycles.

Reduces compound Mooney viscosity, improving flowability and subsequent processing performance.

#### 3. Filler (e.g., Silica) Treatment Effect

Reduces filler (e.g., silica) particle aggregation, effectively lowering the Payne effect and maintaining mooney viscosity stability.

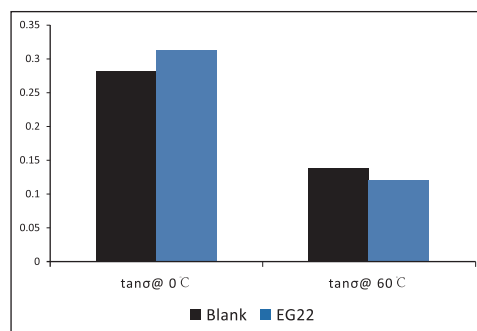
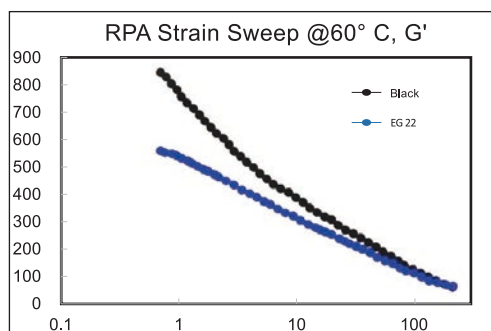
#### 4. Enhanced Physical Properties

Improves tear resistance without negatively affecting other properties or abrasion resistance.

Low compression heat build-up, contributing to extended tire service life.

### Technical Data:

No.	Material Name	Blank	EG22
1	Oil-extended SSBR	96	96
2	BR9000	30	30
3	PT702	80	80
4	N330	6.4	6.4
5	SI-69	6.4	6.4
6	EGEG22(Bio-based)	-	4
7	ZnO	3	3
8	SA	2	2
9	RAE Environmental Oil	10	10
10	Microcrystalline Wax	1	1
11	4020	1.5	1.5
12	S	1.5	1.5
13	CZ	1.5	1.5
14	DPG	2	2
	Total	241.3	245.3



### Usage Guidelines:

Addition Method: EG22 is typically added in the first mixing stage.

Recommended Dosage: 3-8 phr, adjustable based on actual processing requirements and performance needs.



**Packaging:**  
25 kg/bag.

**Storage:**  
Store in a dry, cool (around 25°C), and sealed environment.  
Shelf life: Approximately 2 years.



Overview:

GreenThinking® NSA04 is a nano silica-alumina ( $\text{Al}_2\text{SiO}_5 \cdot n\text{H}_2\text{O}$ ) functional material specifically designed to enhance tire performance in wet grip, wear resistance, and rolling resistance. With an average particle size below 500 nm, NSA04's mechanism lies in its unique physicochemical properties, forming Al-O-Si bonds. This bonding mechanism not only effectively disrupts the water film between the tire and road surface, improving wet traction, but also enhances interfacial adhesion with the rubber matrix, boosting wear resistance, reducing heat buildup, and improving fatigue resistance. NSA04 is widely applicable across tire types, including passenger, commercial, and high-performance racing tires. In high-performance tires, it significantly improves overall performance, delivering superior wet grip, extended tread life, and lower rolling resistance for better fuel efficiency.

Applications:

GreenThinking® NSA04 nano silicon-aluminum alloy is used in tires for the following key benefits:

1. Superior Wet Grip Performance:

NSA04 synergizes with silane coupling agents to break water films, enhancing friction on wet roads and ensuring safer rainy-day driving with reduced skidding risks.

2. Enhanced Wear Resistance:

Its high surface area and dispersion form micro-reinforcing particles in the rubber matrix, distributing stress evenly to extend tire life—critical for commercial and racing tires.

3. Reduced Rolling Resistance:

Optimizes rubber molecular structure and interfacial bonding to lower rolling resistance, improving fuel economy and reducing emissions for eco-friendly driving.

4. Mechanical Performance Boost:

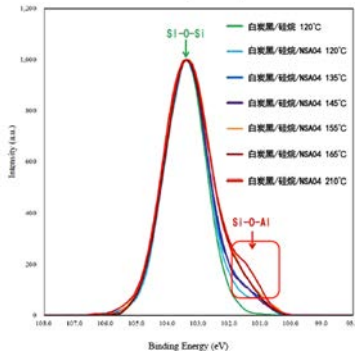
Increases tear and fatigue resistance, ensuring stability during high-speed driving and frequent braking, vital for tire durability and safety.

Technical Data:

Material Name	Formula 1	Formula 2	Formula 3
SSBR充油 (27%)	96	96	96
BR	30	30	30
PT702 (Precipitated Silica)	80	80	67.5
N330	6.4	6.4	6.4
SI-75	6.4	6.4	6.4
ZnO	3	3	3
SA	2	2	2
RAE (Environmental Oil)	10	10	10
Microcrystalline Wax	1	1	1
4020	1.5	1.5	1.5
EG22 (Bio-based)		4	4
NSA04(Nano-silicon aluminum alloy)			12.5
S	1.5	1.5	1.5
DPG	2	2	2
CZ	1.5	1.5	1.5
Total	241.3	245.3	245.3

Compression Heat Build-up	Final Temperature Rise (°C)
Formula 1	11.13
Formula 2	8.63
Formula 3	8.87

DMA Data	tan 0°C	tan 60°C
Formula1	0.2933	0.2124
Formula2	0.3117	0.1969
Formula3	0.2976	0.1922



Usage Guidelines:

Addition Method: NSA04 is typically added during the first mixing stage, usually together with silane coupling agents and other additives.

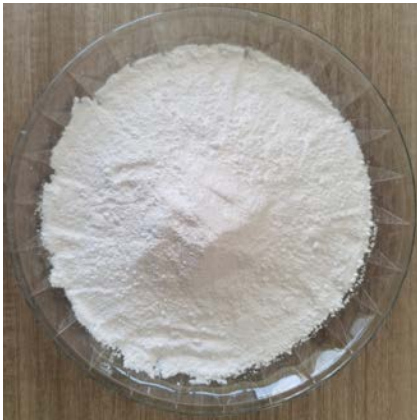
Recommended Dosage: 10-30 phr (adjustable based on specific processing requirements and performance targets).

Packaging:

20 kg/bag.

Storage:

Store in a dry, cool (around 25°C), and sealed environment. Shelf life: Approximately 2 years.



Overview:

GreenThinking® RT88 is a novel rubber heat resistant agent, crosslinker and anti-reversion agent, primarily used in natural rubber and synthetic rubber products.

Applications:

Suitable for tires, shock absorbers, conveyor belts, transmission belts, wiper blades, rubber rollers, motor brackets and other scenarios requiring enhanced heat resistance and dynamic aging performance.

Key Features:

1. Forms Stable Crosslinked Structures

RT88 participates in forming carbon-sulfur hybrid crosslinks during vulcanization. These crosslinks combine the stability of mono-sulfide and di-sulfide bonds with the flexibility of polysulfide bonds. RT88 improves the thermal stability of vulcanized rubber, especially under over-vulcanization or high-temperature vulcanization conditions, maintaining stable mechanical properties.

2. Compensates for Polysulfide Bond Breakage

As part of a compensatory vulcanization system, RT88 can compensate for lost sulfur crosslinks due to vulcanization reversion, maintaining crosslink density.

3. Enhances Anti-Reversion Performance

By forming thermodynamically stable flexible crosslinked structures, it significantly improves the anti-reversion properties of vulcanized rubber, reduces polysulfide bond breakage during vulcanization, maintains crosslink density, and remarkably enhances the rubber's anti-reversion and heat aging resistance.

4. Reduces Rolling Resistance

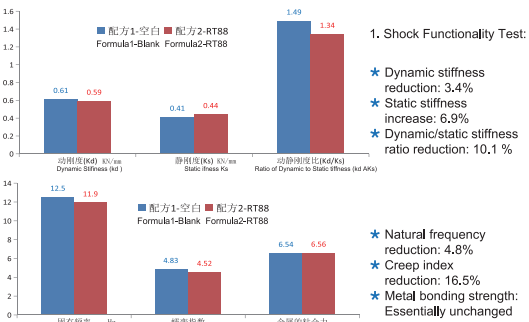
In tire applications, RT88 helps reduce rolling resistance, improving tire durability and high-speed performance.

5. Improves Adhesion Properties

RT88 can enhance the adhesion between rubber and steel cords, playing a critical role in tire durability and stability.

Technical Data:

No.	Raw Material Name and Specification	Manufacturer	Formula 1-Blank	Formula-RT88
1	Natural Rubber	3L	100	100
2	Sulfur		1.8	1.8
3	Zinc Oxide		5	5
4	Stearic Acid		1	1
5	Accelerator CZ	CZ	1.3	1.3
6	Carbon Black N774	N774	70	70
7	Paraffin Oil		5	5
8	Antioxidant	4010NA	2	2
9	Antioxidant	RD	1	1
10	Paraffin		1	1
15	RT88-Heat and Anti-Sulfur Reversion Agent	Powerflex		0.8
	总计		188.1	188.9



NO.	Test Items	Unit	Standard	Formula 1-Bank	Formula 2-RT88	
	Cure characteristics 160°C X 6min					
1.1	Hardness, Shore A	Point	ASTM D2240	64	64	Rubber:Same day test
1.2	Tensile Strength	Mpa	ASTM D412	23.1	22.74	Rubber:Same day test
1.3	Elongation	%	ASTM D412	488	474	Rubber:Same day test
1.4	100% Modulus	Mpa	ASTM D412	3.64	3.91	Rubber:Same day test
1.5	Gravity	g/cm3	GB/T 533	1.158	1.17	Rubber:Same day test
1.6	Compression Set ( 160C X 12min)			54	58.5	Rubber:Same day test
2	air aging 70°C X 72hours					
2.1	Hardness, Shore A		ASTM D573	68	67	
2.2	Tensile Strength	%		21.75	22.01	
2.3	Elongation	%		403	438	
	Hot air aging 70°CX72 hours (rate of change)					
2.4	Hardness, Shore A	Point	ASTM D573	4	3	
2.5	Tensile Strength	%		-5.8%	-3.2%	
2.6	Elongation	%		-5.8%	-7.6%	
3	Compression Set 70°CX24h (Compressed by 25%)	%	GB/T7759	18.09	16.86	

NO.	Test Items	Unit	Standard	Formula 1-Bank	Formula 2-RT88	
1.1	Hardness, Shore A	Point	ASTM D2240	65	64	Rubber:tested after 6 days
1.2	Tensile Strength	Mpa	ASTM D412	21.7	21.9	Rubber:tested after 6 days
1.3	Elongation	%	ASTM D412	404	389	Rubber:tested after 6 days
2	Hot air aging 100°C X 72hours					
2.1	Hardness, Shore A	Point	ASTM D573	71	69	
2.2	Tensile Strength	Mpa		16.3	18.5	
2.3	Elongation	%		251	293	
	Hot air aging 100°CX72 hours (Hot air aging)					
2.4	Hardness, Shore A	Point	ASTM D573	6	5	
2.5	Tensile Strength	Mpa		-24.9%	-15.5%	
2.6	Elongation	%		-37.9%	-24.7%	

Usage Instructions:

RT88 can be mixed in rubber using internal mixers or open mills. Recommended to add during the final mixing stage along with sulfur and accelerators.



Recommended Dosage:

When used with sulfur and accelerators: 0.5-3.0 phr. When used alone (without sulfur): dosage should be increased to 7.0 phr.

Packaging:

25KG/bag.

Storage:

Store in dry, cool (around 25°C) and sealed conditions. Shelf life: approximately 2 years.



Anti-fatigue Agent: AF28 - Reduces rolling resistance, prevents vulcanization reversion, decreases compression heat buildup, and extends service life.



**Overview:** GreenThinking® AF28 anti-fatigue agent effectively improves carbon black dispersion. Its surface-active groups react with corresponding groups at the chain ends of natural rubber molecules, significantly reducing dynamic heat generation in natural rubber-carbon black systems. It enhances the dynamic mechanical properties of compounds and reduces rolling resistance, while improving tire heat aging resistance, decreasing compression heat buildup, and extending service life. Proper addition of AF28 can increase compound hardness, elasticity, and modulus without significantly affecting tensile strength.

**Applications:** In tires, AF28 effectively reduces rolling resistance and heat generation while partially preventing vulcanizate reversion during high-temperature or prolonged use (i.e., degradation of crosslinked networks leading to physical property deterioration). AF28 minimizes thermal degradation of polysulfide bonds, thereby improving vulcanizate thermal stability. The use of AF28 is crucial for enhancing tire quality, safety, and longevity.

- Key Features:**
- 1. Reduces Heat Buildup:** Modifies molecular chain ends to significantly improve vulcanizate hysteresis loss and reduce dynamic heat generation.
  - 2. Enhances Elasticity:** Noticeably improves rubber elasticity.
  - 3. Lowers Rolling Resistance:** Improves dynamic mechanical properties and reduces rolling resistance. Prevents Vulcanization Reversion: Protects against reversion during high-temperature or extended use.
  - 4. Accelerates Vulcanization:** Increases production efficiency.

**Technical Data:**

No.	Raw material	Formula 1 (None)	Formula 2 (With anti-fatigue agent)	Test	Formula 1	Formula 2	Project	Test	Formula 1	Formula 2 (+AF28)	Test condition	Standard					
1	SCR 10	100	100	ML(dN.m)	1.92	2.56	Physical property	Mooney	ML(1+4) 100℃	62	75	100℃	ASTM D1646				
2	N234	47	47					Hardness	Shore A	65	66	151℃×30min	ASTM D412				
3	ZnO	3	3	M100%	Mpa	2.9		3	ASTM D624								
4	SA	3	3	M300%	Mpa	14.8		15.5		151℃×30min	GB/T 1681-2009						
5	Wax	1	1	Tensile Strength	Mpa	33.3		32.9						ASTM D2240			
6	4020	1.2	1.2	Elongation	%	551		529		ASTM D412							
7	RD	1	1	Tear Strength	m/kN	95		94	ASTM D624								
8	S	1.5	1.5	Rebound%		43		49		GB/T 1681-2009							
9	NS	1.1	1.1	Aging performance	4.91	3.88	Hardness	Shore A	70		69	100℃×48hrs	ASTM D412				
10	AF28		1				M100%	Mpa	3.5	3.2	ASTM D2240						
合计:		158.8	159.8				M300%	Mpa	16.6	15.8				ASTM D624			
							Tensile Strength	Mpa	25.4	26.9	GB/T 1681-2009						
Vulcanization condition of rubber:151℃ X 60min Test standard: GB/T 16584-1996							Elongation	%	438	456				ASTM D2240			
							Tear Strength	m/kN	52	55	ASTM D412						
												Rebound %		48	51	ASTM D624	
													the volume of abrasion /cm3	0.141	0.144		151℃×30min
				Fucion	E'/MPa	0℃	22.01	17.67	DMA 151℃×30min	ISO-23337							
											tanα	60℃	12.45	10.57			
															0℃	0.129	0.126
						Improvement rate%	100	81.6									

**Recommended Dosage:** For natural rubber or NR-dominant compounds: 1~1.6 phr  
Must be added during the first mixing stage in NR-based formulations for optimal performance



**Packaging:** 25 kg/bag  
**Storage:** Store in dry, cool (~25°C), and sealed conditions. Shelf life: approximately 2 years.

Modified Lignin: LG Series — Carbon Reduction, Aging Resistance, Lower Rolling Resistance, and Low Heat Generation



**Overview:** GreenThinking® LG Series is a high-performance, eco-friendly reinforcing agent based on 100% natural plant lignin. Through nano-modification and activation of lignin's reactive groups, it is specifically designed for green tires and rubber products. It exhibits excellent dispersion and compatibility with rubber matrices, enabling partial or full replacement of traditional reinforcing agents (e.g., silica, carbon black). It enhances reinforcement while imparting aging resistance, adhesion, tear resistance, and reduced carbon emissions. Sourced from renewable plant biomass, lignin aligns with global carbon neutrality goals.

- Key Features:**
- 1. High Reinforcement:** Lignin's hydroxyl/methoxy groups form hydrogen bonds or crosslink with rubber molecules, enhancing interfacial bonding. Nano-modification further boosts reinforcement.
  - 2. Superior Aging/UV Resistance:** Phenolic hydroxyl groups scavenge free radicals, suppressing oxidative chain reactions and mitigating UV-induced ardening/cracking.



**Applications:** GreenThinking® LG Series is suitable for key tire components and scenarios:  
**Tread Reinforcement:** Replaces partial carbon black/silica, improving aging resistance and reducing rolling resistance.  
**Sidewall Anti-Aging:** Absorbs UV via aromatic rings and inhibits oxidation via phenolic hydroxyl groups, delaying cracking.  
**Inner Liner Gas Barrier:** Forms a dense network with butyl rubber, reducing gas permeability.

- 3. Enhanced Adhesion:** Polar groups (e.g., phenolic hydroxyl) form hydrogen/chemical bonds with fibers/metal, improving rubber-to-reinforcement adhesion.
- 4. Reduced Rolling Resistance & Heat Buildup:** Optimized viscoelasticity minimizes internal friction during dynamic deformation. Lignin particles reduce irreversible polymer chain slippage, lowering hysteresis loss.



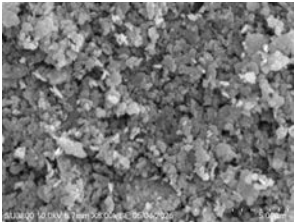
Functional Filler: PF Series — High Gas Barrier, Reinforcement, and Processability



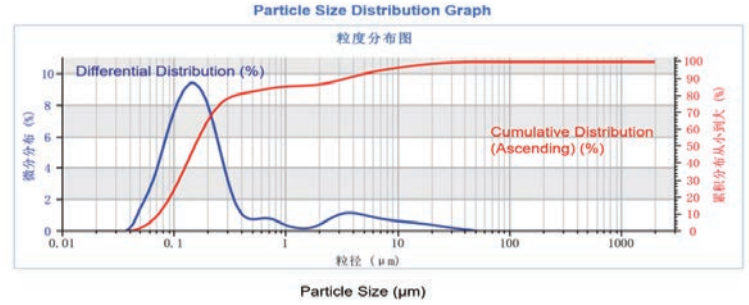
**Overview:** GreenThinking® PF Series is a flaky, soft nano-reinforcing agent derived from selected natural mineral composites. Processed via advanced nano-refinement and surface treatment, it offers uniform purity and stable particle size distribution (primarily ~100 nm, comparable to silica). It excels in reinforcement, gas barrier properties, abrasion/oil resistance, flex fatigue resistance, thermal aging performance, and flowability, making it ideal for high-demand tire applications.

**Applications:** A versatile nano-reinforcing material for synthetic/natural rubber tires, PF Series can replace conventional fillers (carbon black, silica, kaolin) while delivering superior processing (smooth calendaring, low Mooney viscosity) and cost efficiency.

- Key Features:**
- 1. Reinforcement Comparable to N550:** Improves abrasion, oil, flex fatigue, and thermal aging resistance.
  - 2. Excellent Gas Barrier:** Ensures low air permeability, smooth extrusion, and reduced compression set/heat generation.
  - 3. Cost-Effective High Loading:** High filler loading with minimal impact on Mooney viscosity/hardness or flowability.
  - 4. Superior Processability:** Enhanced flow, dimensional stability, extended scorch time, and shorter curing time.
  - 5. Physical Properties:** Flaky structure, high porosity, ultra-nano scale, lightweight, soft, and optimized particle distribution.
  - 6. Chemical Stability:** Low impurities, non-toxic, odorless, and chemically stable.



















Particle Size Test Report			
Sample Name: PF87	SOP Name: 2024/11/8-1841	Measurement Time: 9 seconds	Sample Code: 0001
Tester: Tiangong Laboratory	Background Sampling Time: 9 seconds	Single Sampling Time: 9 seconds	Result Type: Volume (V)
Sample Material: Nano Reinforcing Agent	Refractive Index of Sample Material: 1.5	Absorption of Sample Material: 0.01	Dispersion Medium: Water
Refractive Index of Dispersion Medium: 1.33	Analysis Mode: General Mode	Extinction (%): 6.69	Analysis Range (µm): 0.02 ~ 2000
D10 (µm): 0.073	D25 (µm): 0.102	D50 (µm): 0.153	D75 (µm): 0.26
D90 (µm): 3.394	D97 (µm): 11.36	D99 (µm): 43.609	D99.3 (µm): 1.273
Span: 21.642	Specific Surface Area by Volume (sq. m/c.c.): 43609.43	Specific Surface Area by Weight (m²/kg): 43609.43	Residue on Sieve (%): 3.614
Drain Setting Value: 0.005	Concentration (%Vol): 0.0057	C. V. (%): 304.12	





Shanghai Powerflex New Material Co., Ltd. is an innovation-driven expert in functional rubber additives. Our R&D team consistently overcomes traditional technical bottlenecks and has pioneered a series of high-performance functional additives. With uniquely engineered molecular structures, these additives significantly enhance the performance and quality of rubber products, delivering cutting-edge solutions that drive innovation and sustainable development in the rubber industry.

Product List

Product Series	Grades	Appearance	Key Properties & Applications
Highly Dispersed CNT	CNT36/CNT28		CNT (Carbon Nanotube) material specifically designed to reduce tire heat build-up, improve mechanical properties, wear resistance, and thermal conductivity. Reduces micro-cracks/defects within the tire, enhances overall wear resistance, and extends service life.
High-Efficiency Internal Release Agent	D981S		Focuses on demolding performance and prolonged mold cleaning cycles.
	D985S		1. Cost-effective solution with stable quality. 2. Preferred for budget-conscious customers; not recommended for reclaimed rubber formulations.
	D986S		1. Optimized demolding performance. 2. Exceptional efficacy with ACM rubber.
	D987G		Dual-function agent: Release agent + brightener. Enhances surface gloss and color vibrancy of rubber products.
High-Efficiency Dispersant	DP86B		Suitable for carbon black formulations; simultaneously provides defoaming effects.
	DP20W		Ideal for precipitated silica & light-colored inorganic filler formulations. Zinc-free, eco-friendly, and more cost-effective.
	DP25W		Designed for silica & light-colored inorganic filler formulations; enhances brightness and color richness.
	D212		Universal type: Optimizes flow dispersion and brightness. Suitable for extrusion processes and high-demand molded products.
	DP26		Universal type: Primarily used in molded parts.
Strong Adhesives	BD54		Primarily physical tackifier. Improves adhesion between rubber compound and reinforcement skeleton. Enhances product quality, prevents shoulder separation and delamination.
	BD59		Primarily chemical tackifier. Improves adhesion between rubber compound and reinforcement skeleton. Enhances product quality, prevents shoulder separation and delamination.
	CB10		Novel reactive acrylic acid metal salt modified adhesive resin. Suitable for reinforcement adhesion in peroxide-cured systems.
Active Crosslinker	AB57		High active content. Increases crosslink density, improves scorch safety, and enhances compression set resistance.
Anti-Blooming Agent	AB51		Effectively mitigates blooming risk. Inhibits migration and blooming of small molecules/other additives in rubber products. Acts as a barrier.
Eco-Friendly Multipurpose Accelerator	AG60		Low-odor, high-efficiency, eco-friendly multipurpose accelerator. Low odor, good aging & fatigue resistance. High vulcanization activity - fast curing without blooming. In EPDM formulations with heavy hydrotreated paraffinic oil, odor level can reach VDA 270 class 3.5.



ColorRubber NC55 Tire Sidewall Marking Compound: Durable ,Scratch-Resistant |,Weather & UV Resistant

Overview:

ColorRubber NC55 is an eco-friendly compound primarily based on white natural rubber (NR). Utilizing a dual-cure system, it delivers superior comprehensive performance including: Abrasion resistance·Scratch resistance·Weather resistance · UV resistance.

Applications:

Primarily used for tire sidewall markings. Co-extruded with black NR sidewall compounds or applied to sidewall groove patterns for high-visibility identification.

Key Features:

- High Rubber Content:** Ensures excellent overall mechanical properties.
- Premium Durability:** Outstanding resistance to abrasion, scratching, weathering, and UV degradation.
- Anti-Aging Performance:** Prevents discoloration and degradation under high-temperature sunlight exposure.
- Optimized Processing Safety:** Secure scorch time with excellent processing characteristics.
- Eco-Compliance:** Meets international environmental standards including RoHS & REACH.

Core Competencies:

- Full-Range Rubber Compounds: Covering 33+ Rubber Types
- 150,000+ Metric Tons Production Capacity
- 10,000+ Validated Rubber Compound Recipes
- More Than 20 Years of Professional Rubber R&D+ Production Experience
- Specialty Rubber-Dedicated Lines
- Dedicated Independent Colored Rubber Compounding Factory
- 26+ Professional Rubber Compound Production Lines

Product Performance:

Testing Items	Specification	Typical	Test Method
Curing Condition	160°C*30min		
TC30 (Sec)	250-380	305	ASTM D5289
TC90 (Sec)	600-780	622	ASTM D5289
ML, (1b-in)	1.0-2.3	1.46	ASTM D5289
ML, (1b-in)	7.5-9.5	8.05	ASTM D5289
Curing Condition	160°C*30min		
Hardness, Shore A	55±3	54	ASTM D2240
Modulus 300%, Mpa	3-5	3.21	ASTM D412
Tensile Strength, MPa	≥12	13.58	ASTM D412
Elongation, %	≥550	721	ASTM D412
Specific Gravity, g/cm3	1.27-1.33	1.318	ASTM D297
Mooney ML, (1+4) @125°C	37-45	39.6	ASTM D6204
Scorch T5/Min, 125°C	16-26	19.42	ASTM D6204

