

# 善贞实业（上海）有限公司

Sane ZenChem (Shanghai) Co., Ltd.

## 上海玄珞新材料有限公司

Shanghai Powerflex New Material Co., Ltd

### 橡胶助剂产品—GreenThinking Additive for rubber



汪洋

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- **Product Definition:** A special additive designed for the production process of rubber products. It is mainly added or mixed within the rubber material (without the need to modify the formula, it can be directly added as a raw material auxiliary) to reduce the adhesion between rubber and molds. This allows rubber products to be smoothly separated from the molds during demolding without causing damage to the products or wear to the molds.



D986S



D981S



D985S



## ➤ Four functions

1. Lubrication: reduce the coefficient of friction between the rubber and the mold, so that the demoulding process is smoother.
2. Isolation: A layer of isolation is formed between the rubber and the mold to prevent direct contact and adhesion between the two.
3. Protection: Protect the surface of the mold from rubber corrosion and wear, extend the service life of the mold.
4. Improve appearance: reduce the damage and deformation of products in the process of demoulding, and improve the appearance quality of products.



## ➤ Function and application:

**Increased Production Efficiency:** Significantly reduces demolding difficulty, reducing production interruptions and manual interventions caused by difficult demolding, thereby improving the overall efficiency of the production line.

**Mold Protection:** The internal release agent forms an effective isolation layer between rubber and molds, reducing wear and corrosion on molds, thus extending the service life of molds. For high-value, high-precision molds, it can significantly reduce the cost of mold replacement and maintenance.

**Improved Product Quality:** Helps reduce deformation, tearing, or scratches on rubber products during demolding caused by external forces, thereby improving the appearance quality and dimensional accuracy of products.

**Reduced Production Costs:** By improving production efficiency and reducing mold wear, the application of internal release agents helps reduce the overall production cost of rubber products. At the same time, by reducing the scrap rate and improving the product qualification rate, it indirectly reduces the production costs of enterprises.

## ➤ Usage Method:

- Add it with small materials during mixing, the general formula recommendation is: 1-4 PHR based on the amount of raw rubber (in polar and halogenated rubbers, the amount should be appropriately increased. Adjust according to the demolding effect).



- **Product Definition:** A dispersant is a special additive used in the rubber processing process. It can uniformly disperse various additives in rubber (such as carbon black, white carbon black, other inorganic fillers, etc.) in the mixed rubber, reducing particle aggregation and sedimentation, thereby improving the processing performance of rubber and the quality of rubber products.



➤ Product Categories:

## Dispersant Series

Carbon Black  
Dispersant and  
Dfoaming Agent



DP86B

High efficiency white  
carbon black  
dispersant



DP25W



DP20W

Highly effective flow  
dispersant



DP21



DP26



## ➤ The principle of function:

1. Reduce Mooney viscosity and improve the fluidity of the compound.
2. According to the principle of similar dissolution, the surfactant in the composition strengthens the compatibility with the filler, eliminates the influence of the agglomeration phenomenon of the filler, reduces the aggregation and settlement between the filler particles, making the filler fundamentally dispersed. Our company develops different kinds of dispersants according to the different types of filler, so that the dispersion effect of the filler is better, improve the mixing efficiency and improve the physical properties of the product.





### ➤ Significant effects:

1. Effectively improve the affinity between raw materials, as shown by its good dispersion effect, smooth surface of the rubber, no pores, increased density, reduce the Mooney viscosity of the compound, improve the processability.
2. With the function of physical plasticizer, it can bring the lubricity between macromolecules to reduce the shear force required for mixing, greatly improve the mixing efficiency, save the mixing time and power consumption, improve the extrusion and calendering speed, and reduce the production cost.
3. The contribution of quality stability between batches of rubber material is the most prominent, which can improve the production rate of products to achieve the purpose of reducing the comprehensive cost.

### ➤ How to use:

In the mixing process and can be added with other compound small material, it is recommended to add in a period of mixing; Add 1 to 4PHR of raw glue (in polar and halogenated glue, the dosage should be appropriately increased).



## ➤ Characteristic performance:

1. DP86B has excellent compatibility with all kinds of rubber, and has no negative impact on the physical properties of rubber products under the recommended dosage. It can be widely used as an additive in a variety of rubber formulations.
2. DP86B can speed up the dispersion of carbon black and other fillers in the compound, shorten the mixing time to a certain extent, effectively improve the mixing effect of the compound, reduce energy consumption, accelerate the speed of subsequent extrusion and calendaring, and also reduce the production cost.
3. DP86B well improves the fluidity of the compound and reduces the Mooney viscosity of the compound. In the subsequent extrusion and calendaring process, the addition of DP86B also has excellent effects on eliminating the bubbles inside the compound and reducing the defects of the finished product, and further improves the appearance quality and pass rate of the product.



## ➤ Characteristic performance:

4. DP86B can increase the burning time and play a good role in ensuring the safety of the rubber processing operation. At the same time, the appropriate amount of addition can also improve the wear resistance and aging flexure properties of the rubber.

5. The addition of DP86B can obtain rubber products with more stable size and more delicate appearance, greatly improve the stability of products, reduce the unqualified rate of products, and achieve the goal of reducing the comprehensive cost.

## ➤ Application recommendation:

- Suitable for formula containing carbon black (tires and rubber products); Suitable for natural rubber, synthetic rubber and recycled rubber; Sulfur vulcanization and peroxide vulcanization are applicable.





### ➤ Characteristic performance:

1. It can significantly increase the fluidity of the compound and improve the processing performance by reducing the Mooney viscosity of the compound. This feature helps to improve the densification and surface finish of the product during extrusion and calendering, while reducing finished defects and improving the appearance quality of the product.
2. By accelerating the uniform dispersion of silica and other inorganic fillers, the mixing time is shortened, and the production speed of extrusion and calendering is increased, and the energy consumption is reduced. At the same time, it can also give the adhesive good demoulding performance, reduce the mold cleaning time, and further improve the production efficiency.
3. Among them, DP25W can show excellent brightening and brightening effect on rubber products whose surface requires bright color.



## ➤ Characteristic performance:

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5. Among them, DP25W can show excellent brightening and brightening effect on rubber products whose surface requires bright color.



## ➤ Characteristic performance:

1. Significantly enhance the mixing efficiency of the compound, effectively promote the uniform dispersion of carbon black and other fillers in the mixing process, further shorten the mixing cycle, but also speed up the subsequent extrusion and calendering process speed, reduce the energy consumption of the entire production process.
2. It can effectively prevent the adhesive roll phenomenon in the processing process, reduce the risk of early burning, can significantly improve the fluidity of the adhesive, and thus reduce the Mooney viscosity of the compound. At the same time, it can also improve the compactness of the pressed and calendered products, reduce the defects in the finished products, and then optimize the appearance quality of the products and improve the pass rate of the products.
3. Demonstrating excellent plasticizing properties, the compound can quickly fill the mold with low pressure during molding or injection molding, while ensuring excellent demoulding performance.



## ➤ Characteristic performance:

4. In rubber processing, there is no interference to the peroxide bridging system, and it can show excellent compatibility with various rubber materials. Under the premise of following the recommended dosage, it will not negatively affect the physical properties of the product, and can be widely used in a variety of rubber formulations.
5. DP21 is generally used in the rubber products industry, which in the extrusion products, increase the excellent flow, improve the extrusion speed and product surface gloss; DP26 is more widely used in the tire industry, reduces mennai fast, and promotes the dispersion of filler.





BD54

BD54 is mainly used for physical viscosification, which is used to enhance the adhesion of rubber and fiber skeleton materials. Directly added on the basis of the original formula, it can improve the adhesion by 15%-25%.



BD59

BD59 is mainly used for chemical viscosification, which is used for adhesive material and metal skeleton bonding system, replacing or partially replacing resorcinol formaldehyde series resin, and effectively reducing product cost under the premise of maintaining its bonding strength.



## ➤ Characteristic performance:

1. It can also optimize the mixing process, reduce energy consumption by improving mixing efficiency, and effectively prevent and reduce production defects such as tire shoulder space, delamination, and delamination problems of rubber products such as conveyor belts, tapes and hose, thereby improving the uniformity and overall quality of rubber mixing
2. It can significantly reduce the heat generated by the rubber material during processing and use, effectively inhibit the temperature rise phenomenon when the product is used, and then improve the heat resistance and durability of the product, and extend the service life of the product.

## ➤ Usage:

In the mixing process, it can be added together with other additive, and the effect of one-stage addition is better; It is recommended to add 3-7PHR of raw rubber material.



AB51

## ➤ Functional mechanism:

No matter what kind of spray, the main reason is because the solubility of small molecular substances with the same properties reaches saturation in the rubber material, and precipitates from the rubber products to form a layer of frost or oil on the surface. The role of this anti-spray cream is to be viscous, to pull such small molecules, to block and delay the precipitation of such small molecules.。

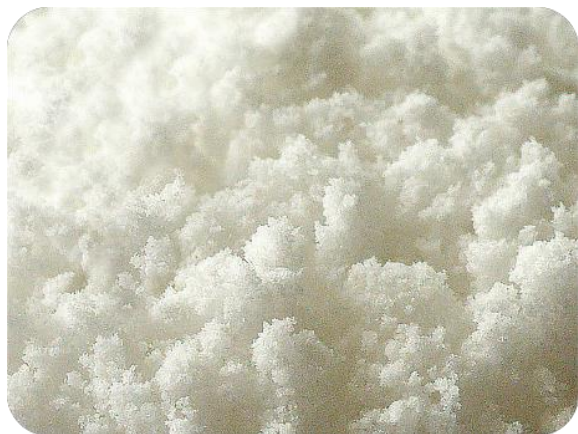


### ➤ Characteristic performance:

1. AB51 anti-spray frosting agent can significantly inhibit the frosting migration of small and medium-sized molecules and other auxiliaries in rubber products, showing excellent oil lock, and small molecule migration barrier function, and can also play a anti-spray blue effect.
2. AB51 anti-blowout frosting agent has excellent compatibility with most hydrocarbon rubbers (such as NR, SBR, BR, IIR, EPDM, etc.), and can also show excellent plasticity and viscosity increase in rubber and plastic products.
3. AB51 anti-spray cream provides excellent aging stability, durability and oxidation resistance.

### ➤ Usage:

In the mixing process and can be combined with other compound small material; It is recommended to add 3-10PHR according to the amount of raw glue, and the effect is better with the increase of the amount.



AB57

## ➤ Functional mechanism:

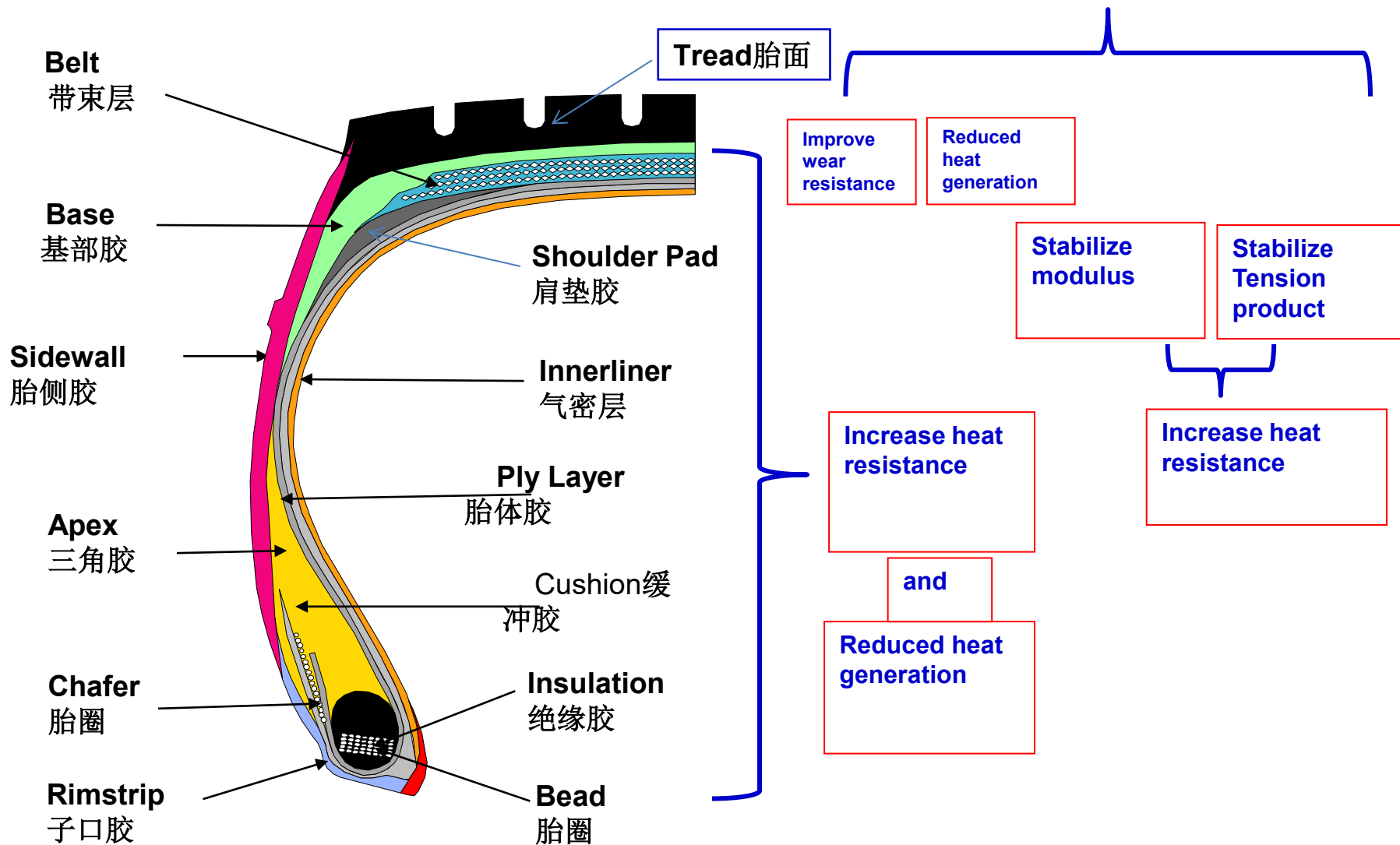
Alkene components participate in crosslinking reaction to improve crosslinking density. During rubber vulcanization, the crosslinked active agent usually acts synergically with other components in the vulcanization system (such as vulcanizing agent, accelerator, etc.). They can accelerate the vulcanization process and improve the properties of vulcanized rubber by promoting the formation and stabilization of free radicals and participating in the catalysis of crosslinking reaction

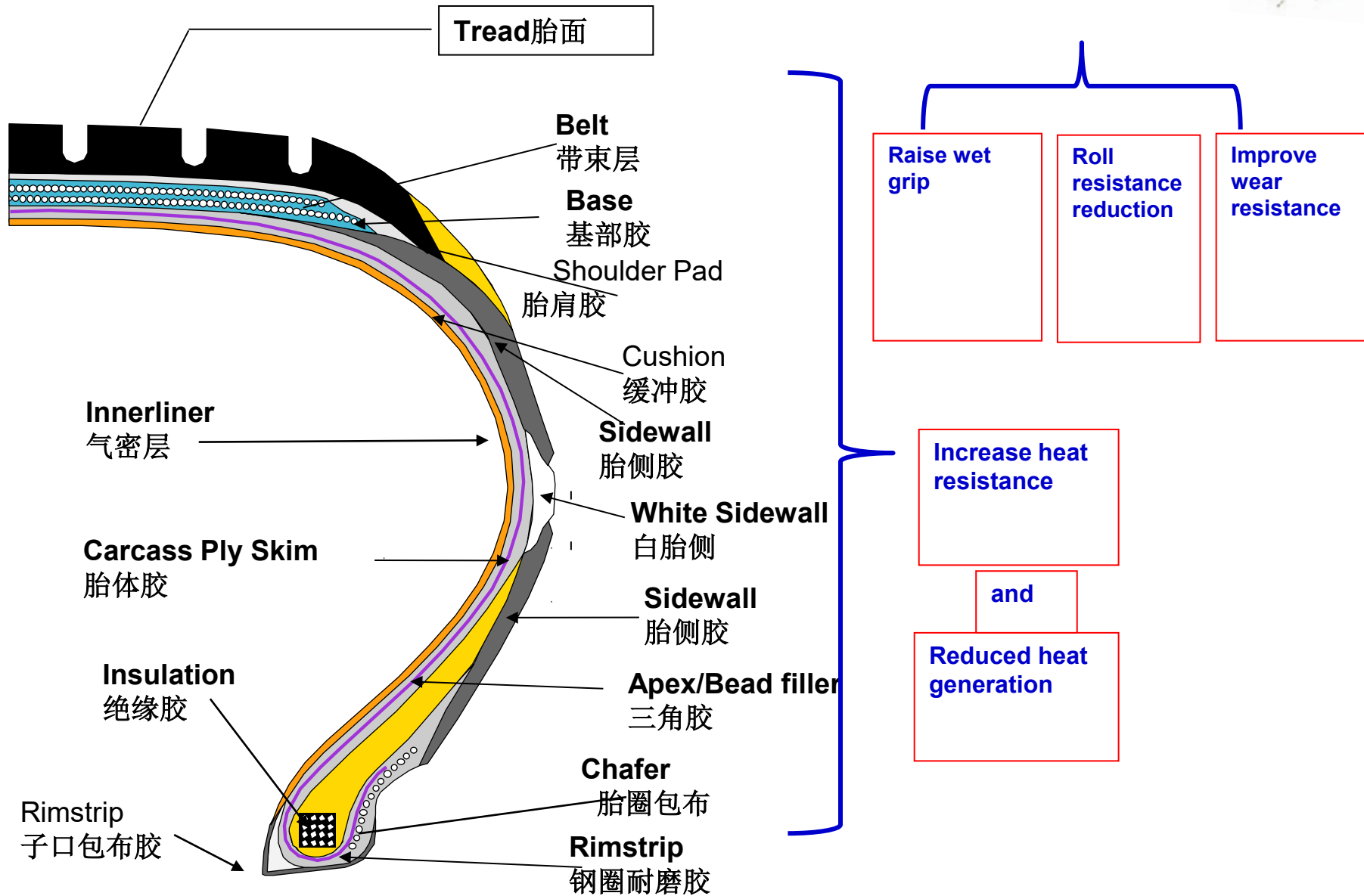


## ➤ Characteristic performance:

1. When AB57 is introduced as a key component of the formulation in rubber processing, it significantly increases the rate of vulcanization reaction and the efficiency of the crosslinking process, thereby enhancing the hardness, modulus and wear resistance of the vulcanized rubber material.
2. AB57 acts as a co-crosslinking agent in the peroxide-curing system of rubber. It reacts with the free radicals generated on the polymer chain by its own unique functional group, thereby introducing additional crosslinking points and effectively enhancing the overall cross-linking density of the polymer.
3. AB57 can significantly improve the compression permanent deformation of rubber products.
4. AB57 is particularly good for improving the performance of high-quality nitrile butadiene rubber (NBR) vinyl and high-carbon black-filled ethylene propylene rubber (EPDM) rubber.

Usage: In the mixing process with other rubber accelerator. It is recommended to add 1-3PHR raw glue.









Product application (type of applied material)								application	Product application (type of applied material)							
PCR car tire									TBR truck tire							
D985S	DP20W	DP25W	DP86B	DP26	BD54	BD59	AB51		D985S	DP25W	DP86B	DP21	DP26	BD54	BD59	AB51
				√				Ply Layer 胎体胶								
								Apex 三角胶		√		√				
√	√	√		√				Tread Glue胎面胶	√	√		√				
								Base 基部胶								
								Bead 胎圈								
						√		Belt 带束层						√		
								Cushion 缓冲胶								
								Innerliner 气密封胶								
								Rimstrip 钢圈耐磨胶								
			√	√				Rimstrip 子口胶		√		√				
								Shoulder Pad 肩垫胶								
					√			Shoulder 胎肩胶					√			
√				√			√	Sidewall 胎侧胶	√	√		√			√	
25		√						White Sidewall白胎侧		√		√				



Product	Grade	Application									
		Shock absorp tion	Rubber hose	Sealing strip	Motorcycle tires (tread) bicycle tires	Shoe material (rubber shoes)	Shoe material (Sports shoes)	Tape (conveyor, conveyor belt)	Oil seal	Washing machine door seal	Sealing element
Highly effective release agent	D986S						✓		✓		✓
	D985S			✓	✓	✓	✓		✓	✓	✓
	D981S			✓			✓		✓	✓	✓
High efficiency precipitated silica dispersant	DP20W						✓				
	DP25W						✓			✓	✓
Carbon black dispersant and defoamer	DP86B		✓	✓	✓	✓		✓			✓
Highly effective flow dispersant	DP21		✓	✓					✓		✓
	DP26		✓		✓	✓			✓		✓
Strong adhesive	BD54		✓		✓			✓			
	BD59		✓					✓			
Anti-spray frosting agent	AB51	✓		✓		✓	✓				
Crosslinking agent	AB57			✓							✓



## 共赢精进！ Better Together

天行健，君子以自强不息

Nature's course is unswerving; the noble person strives for relentless self-improvement.

地势坤，君子以厚德载物

Earth's foundation is receptive; the noble person carries the weight of virtue and nurtures all.

天行健，君子以自强不息，刚健有为；

地势坤，君子以厚德载物，包容万物。只有不断进取，才能不断进步。

