DONG MOON CHEMICALS

28, Gimhae-daero 2694beon-gil, Gimhae-si, Gyeongsangnam-do, Republic of Korea
TeL : +82-55-321-3382~3 Fax : +82-55-322-5031 www.dongmoon.net kbj6422@dongmoon.net

www.dongmoon.net

DONGMOON CHEMICALS CORPORATION

Specialized Rubber Compound Additives Manufacturer

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DONG MOON CHEMICALS

DONG MOON Chemical has been recognized for its technology and quality by numerous domestic and international companies over the past 34 years, establishing itself as the only import-substitution company in the field of rubber compound additives in Korea.
From production to packaging and domestic and international delivery, the entire process is carried out directly at our own factory, providing competitive pricing and differentiated services across various rubber industry sectors.

HISTORY

1990~ 2000

From Start to Challenges

1990	Our Foundation
1995	Subsidiary Establishment
1997	Factory Expansion and Relocation
1999	Production of Homogenizing Agents Begins

2001~ 2010

Growth and Development

2002	Adhesive Brand Labels Development
2003	Subsidiary Expansion and Relocation
2003	Enhancing Adhesion: Tackifier Development
2004	Compound Labels Development
2009	Innovative Soundproof and Dustproof Pads for Vehicles

2015~

Becoming a Corporation

2015	Development of Thermal Transcription Brand Labels
2024	3,306 Square Meters Purchased for New Factory Development

ABOUT US

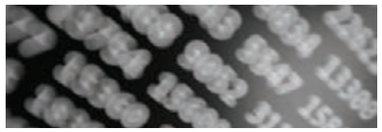
Business Areas

TR-100
1. INNERLINER
2. RUBBER INDUSTRY

HOMOMIX
1. TIRE
2. RUBBER INDUSTRY

MA-002
1. INDUSTRIAL TIRE
2. SHOE OUTSOLE

Sticker
1. COMPOUND
2. BRAND



Manufacturing Process

ABA Storage ▶ Preheating ▶ Air Blowing ▶ Check ▶ Molding

Cooling ▶ Cutting ▶ Drying ▶ Check

Packing

Eco-friendly

We utilizes natural resin to promote eco-friendly values.
Through this, we prevent adhesion and provide optimal physical properties.
Although biodegradation is challenging, it is more eco-friendly compared to synthetic chemicals. In line with global trends, we will continue to deeply consider environmental issues.

PRODUCT 1.

TR-100

Composition I Tackifier (hydrocarbon resins)		
Application	- TR-100 enhances green tack of rubber compound through a synergistic effect with tackifying resins. - TR-100 improves the homogeneity of polymer blends of different polarities or different viscosities. - TR-100 facilitates the fast incorporation of other compound ingredients. It is best added at the beginning of the mixing cycle to achieve the optimum wetting effect.	
Characteristics	- When TR-100 is added and mixed, viscosity may increase. - TR-100 increases the flexibility of polymer materials, reducing their hard or brittle properties. - TR-100 shortens the curing time, increasing productivity.	
Physical Properties	**Appearance**	Black Flake
	Specific Gravity	1.04
	Softening Point (°C)	95 to 105
	Ash Cotent (%)	MAX 3.0
	Heat Loss(wt%)	MAX 0.3
	Solubility	Soluble in aromatic solvents
Product Details	- TR-100 is used to reduce air permeability to improve air maintenance performance. - TR-100 improves extrusion, helping rubber to be processed into a desired shape more easily. - TR-100 increases flexibility and elasticity, making rubber tubes or tires more flexible and durable. In particular, it can contribute to crack prevention at low temperatures and improved shock absorption performance in SBR and NR mixed rubber. - TR-100 has high chemical stability, helping to extend the service life of tires and tubes by minimizing deformation, even when exposed to high-temperature environments and various chemicals. - TR-100 can be used as an alternative to oxidized petrolum oil, which is commonly used in large quantities for TBR and PCR innerliner compound. - TR-100 forms an unsaturated domain within butyl rubber, a low-unsaturated polymer, to enhance its adhesion to NR, a high-unsaturated polymer, and synthetic rubber.	
Dosage	- 3~15 phr	
Paking	- 20kg Polypropylene Bag - Small packaging is also possible depending on the usage.	
Storage	- Store the product in a well-ventilated place. - Store away from heat and moisture. - Store away from sparks and flames.	
Shelf life	6 months	

PRODUCT 2.

HOMOMIX

Composition I Mixture of aromatic & aliphatic hydrocarbon resins

Application	- HOMOMIX improves the homogeneity of polymer blends of different polarities or different viscosities. - HOMOMIX reduces viscosity, improving processability and dispersibility in the rubber compounding process. - HOMOMIX acts as a plasticizer, increasing molecular fluidity. - HOMOMIX facilitates the fast incorporation of other compound ingredients. It is best added at the beginning of the mixing cycle to achieve the optimum wetting effect.	
Characteristics	- HOMOMIX enhances the physical and chemical properties of the final compound. - HOMOMIX's fast curing speed reduces time and cost. - HOMOMIX is used to make rubber more flexible and longer-lasting.	
Physical Properties	**Appearance**	Black Flake
	Specific Gravity	1.04
	Softening Point (°C)	100 to 110
	Ash Cotent (%)	MAX 3.0
	Heat Loss(wt%)	MAX 0.3
	Solubility	Soluble in aromatic solvents
Product Details	- HOMOMIX makes rubber more flexible and prevents it from breaking or cracking easily, even when bent or twisted. - HOMOMIX helps the rubber remain soft and durable over time, preventing it from deteriorating easily after prolonged use. - HOMOMIX reduces the risk of tearing or puncturing during the calendering process, making the process easier and improving the quality of the results. - HOMOMIX reduces viscosity, making processing easier, and maintains stable hardness after vulcanization. - HOMOMIX can be used as an alternative to oxidized petrolum oil, which is commonly used in large quantities for TBR and PCR innerliner compound.	
Dosage	- 3~15 phr	
Paking	- 20kg Polypropylene Bag - Small packaging is also possible depending on the usage.	
Storage	- Store the product in a well-ventilated place. - Store away from heat and moisture. - Store away from sparks and flames.	
Shelf life	6 months	

PRODUCT 3.

MA-002

Composition I Multi-hydroxy acrylic ester polymer (epoxy resin)

Application	- MA-002 enhances the adhesion between rubbers with different polarity or viscosity, helping them bond more effectively. It is best added at the beginning of the mixing cycle to achieve the optimum wetting effect. - MA-002 is an essential chemical for increasing strength and stability by ensuring that layers stick together in a variety of rubber products, including components such as tire treads, sidewalls, and inner liners. ① Increase the adhesion between the tread and bead areas of industrial tires, preventing the rubber layer from falling off. ② It is used in a variety of rubber products to maximize adhesion and durability, thereby enhancing overall performance. ③ It is used to increase adhesion so that the outsole of the shoe does not fall off.	
Product Details	- MA-002 supports stable physical properties, ensuring that the rubber's physical characteristics remain unchanged after curing. - MA-002 provides adhesion between the tread and bead of solid tires. - MA-002 has excellent flexibility, enhancing the flexibility and elasticity of rubber.	
Physical Properties	**Appearance**	White Powder
	Ash Cotent (%)	MAX 47.0
	Heat Loss(wt%)	MAX 7.0
Characteristics	- MA-002 has excellent plasticity for rubber. - MA-002 reduces internal heat generation, minimizing the risk of separation at the adhesion surface due to internal heat during product use. - MA-002 increases adhesion strength and is especially effective for rubber products subjected to dynamic stress. - MA-002 does not cause contamination, leave stains, or affect the color of rubber products. - MA-002 is a blooming inhibitor that prevents blooming after curing, maintaining a clean surface. - MA-002 is compatible with incomplete buffing and can fully cover imperfections caused by incomplete surface preparation.	
Dosage	- 3~15 phr	
Paking	- 25kg Polypropylene Bag - Small packaging is also possible depending on the usage.	
Storage	- Store the product in a well-ventilated place. - Store away from heat and moisture. - Store away from sparks and flames.	
Shelf life	6 months	

PRODUCT 4.

RUBBER COMPOUND LABELS

Rubber Compound Labels	
Function	- It is a vulcanization sticker used for various purposes, such as logos, markings, and repairs. - It is a vulcanization sticker specially designed to be compatible with tire rubber through heat and pressure during the vulcanization process. - It is made of rubber material and designed to blend well with the physical properties of the tire even after vulcanization. - Various colors, sizes, and lettering can be customized.
Advantages	- It has excellent heat resistance, so it does not easily come off when exposed to heat. - It is durable and resistant to dynamic stress.
Storage	- Store the product in a well-ventilated place. - Store away from heat and moisture.
Shelf life	6 months

PRODUCT 5.

TIRE BRAND LABELS

Tire Brand Labels	
Function	- It is a brand sticker specialized for tires, providing excellent adhesion when applied to the sidewall. - A strong adhesive is applied to ensure compatibility with rubber and similar products. - It is easy to use as it can be strongly attached without the need for a separate adhesive. - Various colors, sizes, and lettering can be customized.
Advantages	- It has excellent heat resistance, so it does not easily come off when exposed to heat. - It is durable and resistant to dynamic stress.
Storage	- Store the product in a well-ventilated place. - Store away from heat and moisture.
Shelf life	6 months

PRODUCT FEATURES

TR-100 & HOMOMIX

Straight asphalt is oxidized at high temperatures to increase viscosity and hardness while enhancing high-temperature stability, making it suitable for various industries and applications.

Main Tasks	Contents	Details	Applications
Chemical and Rubber Processing	Rubber Compounding Process	Contributes to Adjusting the Flexibility and Strength of Rubber Materials	Tire Tread, Sidewall, Adhesives and Sealants, Automotive Interior Materials, Soundproof Pads and Vibration-Absorbing Materials
	Tire and Tube Manufacturing	Enhances Elasticity and Increases Durability When Mixed with Rubber	
Construction Industry	Roofing Adhesion	Adhesion and Sealing of Materials Such as Roofing Waterproof Sheets	Raw Materials for Rubber Compounding, Chemical-Resistant Products
	Building Material Production	Manufacturing of Materials Requiring Durability and Adhesion	
Packaging Process	Airport and Road Pavement	Provides High Durability and Thermal Stability	Surface Treatment for Roads, Runways, and Parking Lots
	Tasks Requiring Thermal Stability	Resistant to Deformation Even in Extreme Temperatures	
Electrical and Electronics Industry	Cable Coating	Maintains Electrical Stability and Prevents Impact and Chemical Damage	Protects Electrical Components with Excellent Insulation Properties
	Insulating Solution	Maintains Insulation Performance Even at High Temperatures	
Waterproofing Process	Rooftop Waterproofing	Maintains Waterproof Performance Even in Harsh Climates with High Thermal Stability	Waterproof Materials for High Temperatures and Extreme Environments
	Tank and Storage Waterproofing	Utilized for Protecting Industrial Storage with Chemical and Waterproof Properties	

MA-002

With three key advantages-enhanced adhesion, improved durability, and blooming prevention-this product is ideal for applications requiring a clean surface and high durability. It is particularly useful in the automotive, tire, and footwear manufacturing industries, making it an excellent choice for tasks that demand both a pristine surface and strong durability.

Main Tasks	Contents	Details	Applications
Tire Manufacturing Industry	Tire Tread and Bead Adhesion	Prevents Separation of Rubber Layers in Industrial Tire Joints and Enhances Durability	Enhances Tread and Bead Adhesion
Footwear Manufacturing Industry	Footwear Manufacturing and Adhesion Process	Maintains Surface Cleanliness and Enhances Durability in Outsole and Midsole Adhesion	Sports and Work Footwear Manufacturing
Rubber Product Manufacturing Industry	Rubber Composite Bonding Process	Provides Strong Adhesion Between Rubbers with Different Polarity and Viscosity	Manufacturing of Packing, Gaskets, and Oil Seals
Automotive and Transportation Industry	Automotive Parts Assembly Process	Enhances the Durability of Various Rubber Components	Manufacturing of Wipers, Engine Mounts, and Belts
Construction and Waterproofing Industry	Blooming Prevention Coating Process	Improves the Surface Quality of Rubber Products by Preventing Blooming After Curing	Manufacturing of Waterproof Rubber Sheets and Rubber Flooring
Sports and Leisure Industry	Waterproof Material Adhesion and Coating	Enhances Adhesion of Sports Rubber Equipment to Withstand Dynamic Stress	Manufacturing of Tennis Racket Handles and Rubber Grips

Q1

A1

Hydrocarbon Resin?

Organic compounds extracted from petroleum enhance the durability and elasticity of rubber, and improve adhesion between rubber components, allowing them to combine effectively with SBR/NR rubber.

The main raw material, Straight Asphalt, is heated at high temperatures to undergo dehydrogenation, polymerization, and condensation, transforming low-molecular hydrocarbons into high-molecular hydrocarbon resins.

Q2

A2

Why Hydrocarbon Resin is recommended in combination with SBR/NR

Hydrocarbon resin can be used in the production of tires and rubber tubes to enhance the flexibility, durability, and adhesion of rubber products, while also improving workability and physical properties.

1 Enhanced Flexibility and Durability

- Enhances the flexibility and elasticity of rubber, resulting in more flexible and durable rubber tubes and tires.
- In particular, it aids in crack prevention at low temperatures and enhances shock absorption performance in SBR and NR mixed rubber.

2 Superior Adhesion and Durability

- It enhances the adhesion of the rubber mixture and strengthens the bond between rubber layers, enabling tires to withstand friction and loads during driving.
- It also enhances the wear and friction resistance of rubber tubes, minimizing damage caused by external friction.

3 High-Performance Stability and Chemical Durability

- It offers advantages in shape retention under high-temperature conditions
- High chemical stability helps extend the service life of tires and tubes by minimizing deformation, even when exposed to high-temperature environments and various chemicals.

4 Enhanced Workability for Greater Efficiency

- When mixed with SBR and NR, processability and molding are improved, leading to increased productivity.
- This helps enhance the overall quality of the final product.

Q3

A3

Unleashing Synergy: Carbon Black and Blown Asphalt

The combination of Carbon Black and Blown Asphalt enhances the durability and stability of the product, particularly for high-temperature performance.

In particular, tires help absorb impacts during driving by enhancing grip and elasticity.

It ensures stability despite temperature changes, preventing tire deformation under various driving conditions.

[Technical References]

Carbon Black plays a crucial role in improving tire durability and strength, enhancing rubber's wear resistance as well as its resistance to external shocks and friction.

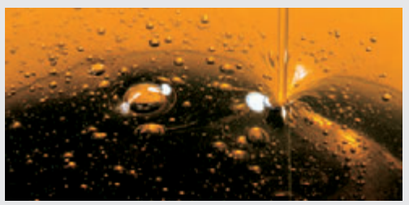
Blown Asphalt's plasticizer properties provide rubber with flexibility while preserving its strength. As a result, it ensures that the rubber retains both flexibility and strength even at high temperatures generated during tire driving.

Q4

A4

Asphalt?

It is a high-viscosity, high-density, black-brown residue left over during the crude oil refining process. Thanks to its sticky and viscous properties, it is widely used in adhesives, waterproofing agents, and various other industrial applications. Asphalt consists of asphaltenes, resins, oils, oxides, and trace impurities. Its hardness, viscosity, and flexibility may vary depending on the composition ratio.



Q5

A5

Understanding Asphalt: Types and Key Differences

1) Straight Asphalt vs Blown Asphalt

Classification	Straight Asphalt	Blown Asphalt
State	Semi-solid	Solid
Odor	None	None
Plasticity	Low	High
Temperature Sensitivity	High	Low
Heat Resistance	Low	High
Impact Resistance	Weak	Strong
Elongation(Tensile Strength)	High	Low(1~3)
Softening Point	Low(35~60°C)	High(70~130°C)
Electrical Insulation	Excellent	Excellent
Permeability, Absorptivity	Very low	Very low
Chemical, Water, and Corrosion Resistance	Good	Good
Weather Resistance	Good	Excellent
Oil Resistance(to Petroleum)	Poor	Poor
Emulsifiability	Good	Poor

2) Blown Asphalt vs Modified Asphalt

Blown Asphalt achieves high-temperature stability, viscosity, hardness, and water resistance through oxidation polymerization at high temperatures, with minimal flow or deformation caused by temperature fluctuations. Due to its high viscosity and oxidation stability, it is also used as an industrial lubricant or processing aid. Oxidized petroleum oil is polar, which improves interaction and adhesion with rubber or polymer materials.

The modified asphalt is an asphalt with improved chemical properties such as flexibility, durability, and adhesion by mixing ABA with chemical additives. There are similarities with ABA in the treatment method to improve the properties of asphalt, but there are differences in the manufacturing method, properties, and uses. In particular, it has excellent flexibility and elasticity, resistance to temperature changes, and high abrasion resistance and strength, which helps prevent uniformity issues and deformation.

Q6

A6

Configuration of MA-002

1) Acrylic Ester Polymer

It is a long molecular chain structure made of acrylic and esters, which makes the materials flexible and strong.

2) Epoxy Resin

It is responsible for strongly bonding multiple materials with excellent adhesion. In particular, it is a chemical component that increases the adhesion of rubber or plastic products, strengthening them and preventing them from falling off easily.

Q7

A7

Tire Composition: Key Elements for Performance and Durability

Main Component	Detailed Description	Material
Tread	The outer surface that directly contacts the road, determining the tire's wear resistance and grip.	Rubber, Reinforcing agents, etc.
Carcass	Serves as the tire's basic framework, maintaining internal air and tire shape.	Nylon, Polyester, etc.
Bead	The part that securely fixes the tire to the wheel.	High-strength steel wire, Rubber
Sidewall	The side part between the tread and the bead.	Rubber
Belt	The layer beneath the tread that connects the carcass and tread.	Steel cord or synthetic fibers
Innerliner	The sealing layer that maintains air inside the tire.	Butyl rubber

Main Raw Materials	Detailed Description
Rubber	Natural rubber / Synthetic rubber
Reinforcing Agent	Carbon black / Silica / etc
Plasticizer & Oil	Resin/ Aromatic oils / etc
Curing Agent	Sulfur / Activators / etx
Resin Antioxidant & Anti-aging Agent	Tackifier
Other Additives	Plasticizer / Catalyst / Filler / etc

Q8

A8

Optimizing Flexibility and Workability with Plasticizers

It is a material that is added to polymer materials to improve flexibility and workability.
It weakens the bonds between polymer chains, helping the material to become more flexible and smooth. The characteristics of plasticizers are as follows.

Feature	Details
Improved Flexibility	Makes rubber more flexible, allowing it to bend easily and stretch more.
Improved Processability	Enhances the processability of the material, aiding in mixing, extrusion, and molding processes.
Improved Cold Resistance	Increases cold resistance, maintaining flexibility in low temperatures.
Material Property Control	Easier control of properties such as hardness, elongation, and durability.
Heat Resistance Maintenance	Allows the creation of high-performance products usable in specific environments.

Q9

A9

Unlocking the Benefits of Talc Powder in Manufacturing

It is used as a filler or processing aid in various industries, such as rubber and plastics, and its role may vary depending on the specific application.

Function	Details
Filler	**Used as a filler in rubber products for the following purposes:** • Improves the physical properties of rubber, increasing hardness and durability. • Enhances resistance to wear, reducing the chances of the rubber thinning or getting damaged over time.
Processing Aids	**Used to improve the flexibility and processability of rubber:** • Adds softness and flexibility to the material, improving processability and moldability. • Helps rubber to easily separate from the mold during processing. • Reduces the tackiness of rubber, providing better processability and easier handling.
Others	• Improves the surface quality of plastic and rubber, enhancing the appearance of the product. • Increases resistance to cracking and deformation caused by repeated thermal expansion and contraction. • Strengthens electrical insulation properties, making it suitable for products where electrical properties are important.

Q10

A10

Is it possible to change the Ash Content (%) of 'TR-100 & HOMOMIX' to a MAX of 2.0?

We fully understand the customer's requirements, and the actual manufactured product maintains a level around MAX 1.5. The current specification of MAX 3.0 is a safety standard set considering variations across different batches.
It is difficult to change the explicit specification of our product from MAX 3.0 to MAX 2.0. However, please note that we manage the specification based on MAX 3.0 as a standard from a QC (Quality Control) perspective.

This standard reflects the fact that slight variations may occur between batches due to the characteristics of the main raw materials, Talc Powder and Gilsonite.
These two raw materials are essential for imparting the product's unique physical properties and performance, but they are also key factors influencing the Ash Content.
Lowering the maximum value (MAX) to 2.0 may not sufficiently account for variations in raw material characteristics, potentially reducing the stability of the manufacturing process.
Additionally, Ash Content (%) is one of the indicators for evaluating the quality of rubber compounding additives, but maintaining a balance with the overall performance of the product (e.g., adhesion, flexibility, durability) is even more important.
Our product is designed with all these factors comprehensively considered, and the current standards are set to optimize performance while meeting customer requirements.

Q11

A11

Processing Aid?

A processing aid is a substance added during the raw material processing to impart desired properties or enhance process efficiency. It refers to a chemical additive used in industrial manufacturing to assist or facilitate specific operations.

[References]

Examples of Use

1) Rubber Industry: Additives are used to reduce viscosity or improve workability during processing.
2) Plastics Industry: Plasticizers are used to ensure smooth molding operations.
3) etc

Q12

A12

Gilsonite?

❶ Purpose of Use

1) Provides balanced performance (adhesion, flexibility, durability)
2) Enhances the durability and stability of polymer products
3) Due to its low molecular weight, it reduces viscosity and improves processability when mixed with polymer materials.

❷ The role of Gilsonite in cases requiring molecular weight reduction

1) Used as an additive to increase the flowability of rubber compounds.
2) Provides adhesion and uniform blendability due to its low molecular characteristics.