



# Agri-Pure™ Tire Extender Oils



Tires and Rubbers

# Driving the Tire Industry's Performance, Safety, and Sustainability Goals Forward

The tire industry is committed to reaching important sustainability goals. This includes shifting away from petroleum-based oils and increasing the use of bio-based oils in rubber formulations while achieving net zero carbon emissions by as early as 2030. Although petroleum-based products have been around for decades, bio-based oils are renewable, may contribute to lower CO<sub>2</sub> emissions and can be non-hazardous to human health.

Cargill offers multiple nature derived solutions across various botanical sources, and technical expertise to support tire customers in achieving these sustainability goals, while also creating a safer manufacturing process and maintaining or even increasing the tire's performance characteristics. Cargill's global access to a wide variety of feedstocks and manufacturing capabilities around the world also mean a reliable, consistent, high-quality product across the globe.

## Why Cargill Agri-Pure™ Tire Extender Oils

Cargill tire extender oils help improve the processability of rubber and make it easier and faster to manufacture tires. They can be more uniformly mixed with other ingredients in the manufacturing process, helping ensure high tire function and performance.

### Increase the use of renewable, bio-based content in products

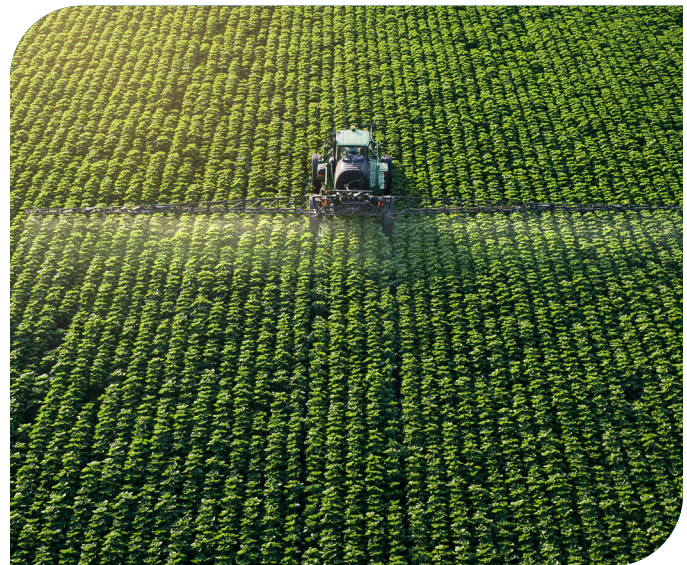
Replace petroleum-based extender oils with bio-based Agri-Pure™ oils.

Up to 100% bio-based from a renewable resource.

### Improved tire performance

Agri-Pure™ extender oils have a lower Glass Transition Temperature (Tg) than conventional petroleum-based oils, which contributes to better traction, especially in winter conditions.

Agri-Pure™ products help increase the amount of silica that can be incorporated in the rubber compound and ensure it is uniformly distributed, which helps increase the performance of the tire.



Agri-Pure™ extender oils increases tire service time and gives tires a longer life because it results in better abrasion and tear resistance of the tire compared to petroleum-based oils.

### Reduce tire road wear particles

The improved abrasion resistance\* of Agri-Pure™ can help reduce Tire Road Wear Particles (TRWP), which is hazardous to the environment as well as to human and wildlife health.

### Creates a safer manufacturing process

Agri-Pure™ products are made from bio-based nonhazardous raw materials, making it safer to use during the manufacturing process\*.

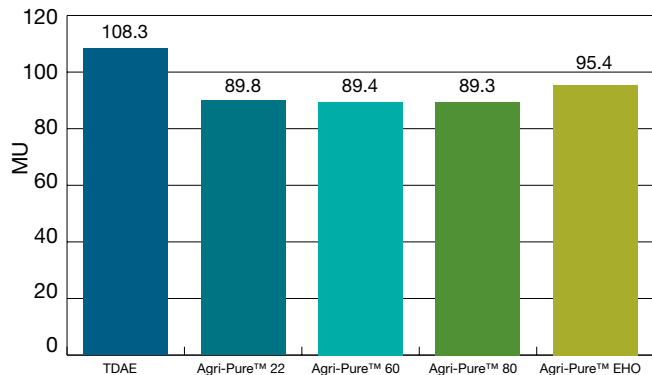
Agri-Pure™ products do not have any added hazardous substances like polycyclic aromatic hydrocarbons (PAHs) that are known as non-desirable impurities to the tire industry.



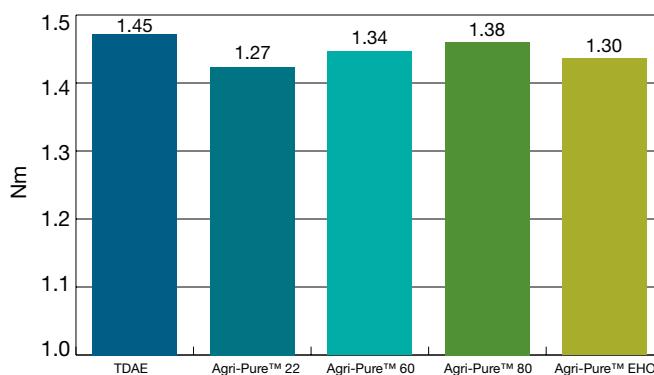
## Featured Products

	DENSITY 25°C, G/CM3	VISCOSITY 40°C, cps	VISCOSITY 100°, CPS	FLASH POINT °C	WATER CONTENT %	POUR POINT °C
Agri-Pure™ 22	0.91	30	8	Min: 305	Max: 0.1	-8
Agri-Pure™ 60	0.92	35	8	Min: 320	Max: 0.1	-17
Agri-Pure™ 80	0.91	40	8	Min: 320	Max: 0.1	-19
Agri-Pure™ EHO	0.87	8	4	Min: 180	Max: 0.1	-25

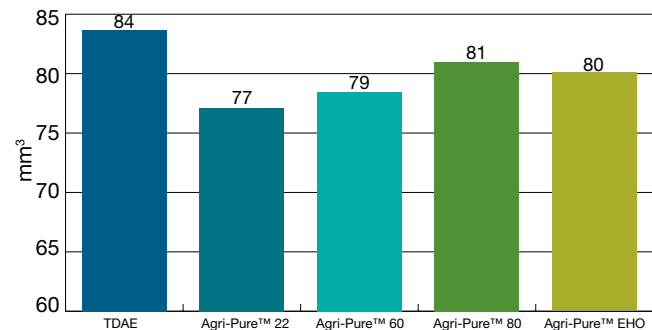
Mooney Viscosity @ Max



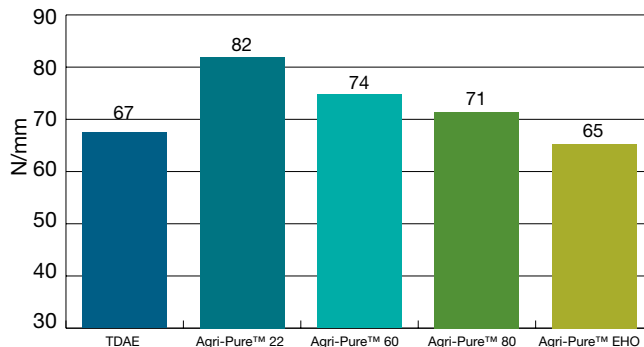
Max Torque, MH



Abrasion Resistance



Tear Resistance



\*compared to petroleum-based oils

## Frequently Asked Questions

### 1. What kinds of products do Agri-Pure™ products typically displace?

A: Cargill's Agri-Pure™ products typically replace mineral oil based extender oils like Treated Distilled Aromatic Extracts (TDAE). They are designed to be easily integrated into tire formulations.

### 2. How can Cargill help increase my bio-based content and sustainability goals?

A: Cargill equips customers with solutions derived from nature to help redesign or develop products with high performing bio-based products with a lower carbon footprint and reduce the use of fossil-based materials while maintaining or even exceeding the performance of petroleum based products. Agri-Pure™ products replace petroleum derived mineral oil with a product from a renewable resource.

### 3. Do you have abilities to supply product around the world?

A: Cargill is uniquely positioned to serve both regional and global customer footprints with its extensive supply chain network and wide access to renewable, bio-based feedstocks. Cargill serves as a trusted partner for customers in more than 70 countries, with manufacturing and research sites located on six continents.

### 4. Can you partner on innovation and new product development projects?

A: Cargill's R&D and technical teams lead the industry in developing new ways to convert renewable agricultural inputs into next-generation, bio-based solutions. Cargill has technical experts located around the globe with extensive experience collaborating with customers to develop innovative solutions, transcending beyond the chemistry to also help achieve customers' business needs, including managing cost and reliability. Cargill often partners with customers to solve their toughest challenges to support sustainability goals, and bring higher performing solutions to the market.

### 5. Are Cargill's Agri-Pure™ tire extender oils ready to integrate into formulations?

A: Yes, Cargill's Agri-Pure™ products can be used in the same way petroleum-based oils are used. They are designed to easily integrate into formulations to help improve sustainability and performance.

## Contact us - Cargill

### USA

P.O. Box 5700, MS 66  
Minneapolis, MN 55440-5700  
Customer service:  
1-800-842-3631

### Brazil

Avenida Dr. Chucri Zaidan,  
1240 - Torre Diamond - 6º andar  
CEP 04711-130  
São Paulo, SP - Brasil  
+55 11 4718-8170

### China

10F, One ICC, Shanghai International  
Commerce Center 999 Huaihai Road  
(M) Shanghai, China 200031  
021-33327888

### Canada

300-240 Graham Avenue  
Winnipeg, Manitoba R3C 0J7  
Canada  
204 947-6417



[cargill.com/bioindustrial](https://cargill.com/bioindustrial)

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