



WALNUT SHELL POWDER



SHELLED WALNUTS OUR SPECIALTY



Company Profile

The Crain family in the Sacramento Valley since 1960.

In 1995, **ECO-SHELL, Inc.** evolved allowing the opportunity to provide a full spectrum of walnut shell products.

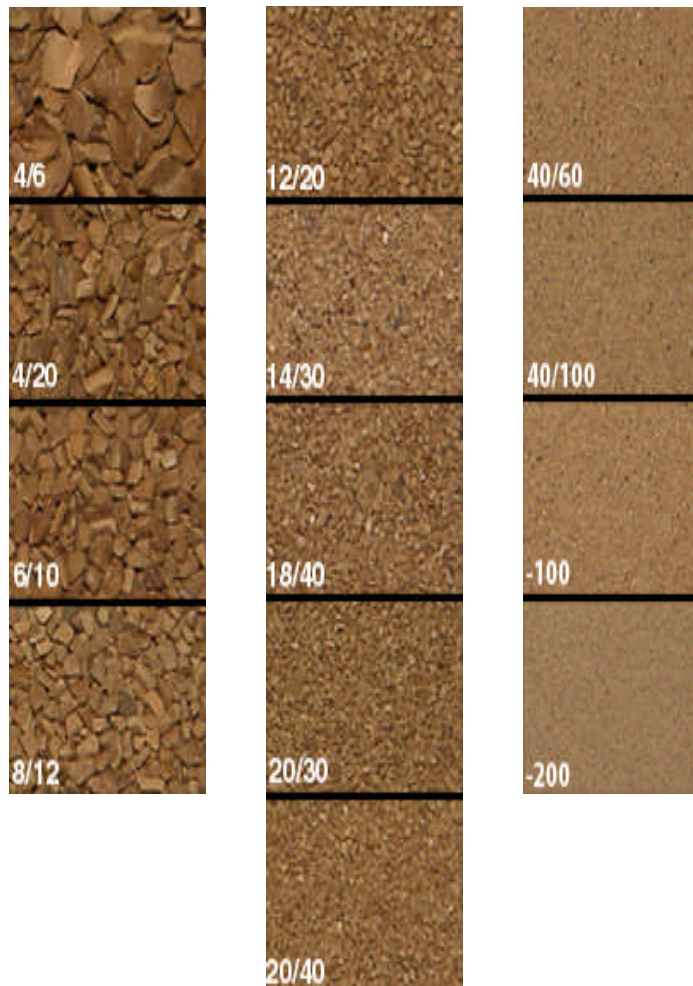
ECO-SHELL - the premier suppliers of walnut shell media to industrial markets around the world.
Facilities - the **finest state of the art milling and processing equipment**

- Quality assurance
- The highest sanitation standards
- Providing the complete documentation on all process controls and Quality Control analysis data of every lot or shipment

ECO-SHELL



Inventoried Media Sizes



4/6	12/20	20/40	60/100	-100
6/10	14/30	35/60	60/200	-200
8/12	18/40	40/60	60/200 -10.5	-325
4/20	20/30	40/100	70/200	

Advantage of Walnut shell powder



- **Biodegradable**
- **Non-toxic**
- **Environmentally safe**
- **Cost effective**
- **Not cause silicosis**



Applications of Walnut Shell Powder



- I. Wood Plastic Composite**
- II. Snow Tire**
- III. Abrasive**
- IV. Polishing**
- V. Filler & Extender**
- VI. Oil Industry**



I. Wood Plastic Composite

Special Qualities for Walnut Shell Powder



Excellent Hardness: 25~30(Vickers No.)

Excellent Mohs Scale: 3~4

Excellent Modulus Elasticity: 22,900

High Specific Gravity: 1.2~1.5

Low Free Moisture: 3~9%(80℃, 15h)



I. Wood Plastic Composite

Wood Plastic Composite with Walnut Shell Powder



- Improve mechanical Properties
- Long lasting Durability



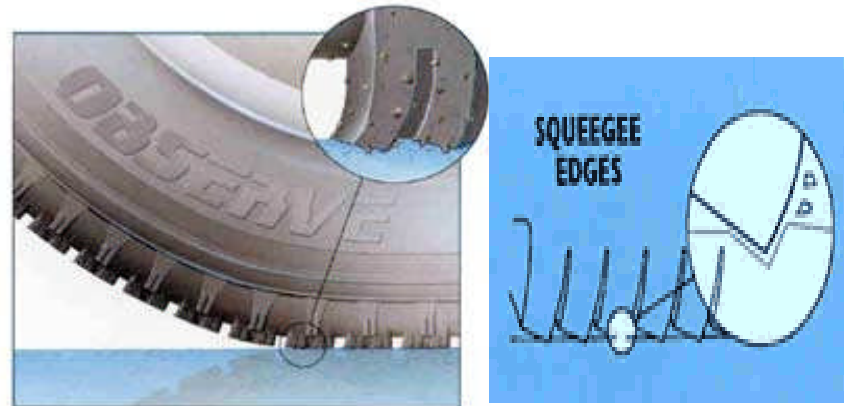
Johnsonite®



II. Snow Tire



It's like driving with thousands of tiny steel spikes on your tire.



They're one of the 'studless' winter tires. The real magic in these tires is ground up walnut shells in the thread compound.

One of the world's hardest substances, **Walnut shells** actually dig into ice and snow like miniature steel spikes, providing exceptional gripping power and handling in treacherous winter driving conditions. All with minimal tire and road surface wear.



II. Snow Tire

Especially Sport Utility Vehicle (SUV) and Cross Country Vehicle (CCV).



Winter
TRANPATH S1

Features and Benefits

Arrangement of various sipes

To have edge effect in any direction, WINTER TRANPATH S1 takes "Armor sipes" and especially in lateral direction "Circumferential sipes".

Each sipe collaborate into contact patch and bring excellent handling on ice and snow surface.

Suction rubber with Walnut shell and new silica Compound

Suction rubber absorbs the water layer on ice surface and then walnut shell catch the ice surface.

Even on the surface of low temperature, new silica compound contact closely.

Wider contact patch (CCV sizes)

Contact patch of "CCV" sizes designed 5% wider than "SUV" sizes. It enables more traction and braking.



II. Snow Tire

TOYO TIRES
TIRES THAT FIT YOU.



Toyo Observe Garit G30

Features and Benefits

With advanced technology, GARIT G30 has been developed for the high power vehicle on winter condition.

GARIT G30 takes advantage of Walnut shell like cat's claws to catch more grip on ice surface and the strong tire body construction enables handling stability.

This is a winter tire evolution.

More sipe density with one way pattern

The sipe density enables water suction and one way pattern improve traction performance on ice.

Suction rubber with Walnut shell and new silica compound

Suction rubber absorbs the water layer on ice surface and then 7 million Walnut shell catch the ice surface.

Even on the surface of low temperature, new silica compound contact closely.

Wider contact width

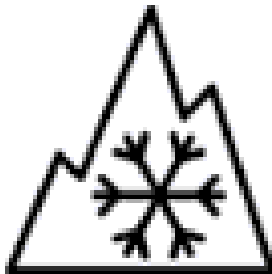
To improve handling performance on ice, the tread width widened.



II. Snow Tire

EXCEEDS TRANSPORT CANADA'S PERFORMANCE STANDARDS

The result is a standard of performance in severe winter conditions that's certified by Transport Canada. Which means you'll be in better control when the weather gets really nuts.



Exceeds
Transport
Canada's
Standards

GET GROOVED ON ICE AND SNOW

In addition to our revolutionary Microbit technology, our Observe Series light truck winter tires have thousands of traction grooves in the actual tread block.



Transport Canada

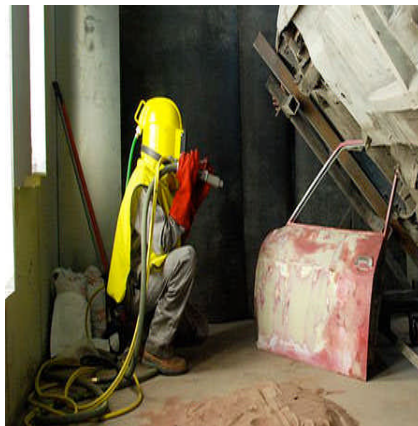


III. Abrasive - Blasting

What is Walnut Shell Blasting?

Walnut shell grit is the hard fibrous product made from crushed walnut. When used as an abrasive, walnut shell blasting media is extremely durable, angular and multi-faceted, yet is considered a 'soft abrasive'.

Ground **Walnuts shells** are a type of abrasive blast media used for cleaning. Typical substrates are metals, fiberglass, woods, plastics and stone. The walnut shells are ground to various sizes from coarse to extra fine depending on the application. The walnut shells are used in the same manner as typical blast media. Walnut shells are durable and can be re-used in many applications. Walnut shells can remove matter from surfaces without scratching or pitting underlying material.



III. Abrasive - Blasting

Application for Walnut Shell Blasting



- Cleaning ceramic Substrates
- Removal of inked markings
- Component failure analysis
- Removing bridging between traces
- Cleaning magnesium from thermocouples
- Etching of heat-sensitive material
- Clean up of laser drilled holes
- Texturing graphite surfaces
- Silicone wafer beveling



III. Abrasive – Grinding & Cleaning



The Walnut Sponge

Walnut shells are natural abrasive which won't scratch most household surfaces, including non-stick cookware.



IV. Polishing & Deburring

Walnut shells are used in many polishing and/or deburring applications. Walnut shell media is used for polishing or cleaning fine metals, alloys, mechanical parts, shell cartridges, eye glass lens, rocks, stones, coral, ivory, beans, and seeds.



Jewelers use **Walnut shell** media treated with rouge in both tumbling and vibratory applications for polishing gems and fine jewelry.



V. Filler & Extenders

Walnut shell is used in many applications as a filler or extender. Paint and coating materials, resins, pigments, plywood, adhesives, ceramics, dynamite, tile and livestock feed just to name a few. Media sizes vary from coarse walnut shell to walnut shell flour.



Non Slip Additive is a medium grade crushed walnut shell that can be added to any resin, shoes, gelcoat or paint to make any area a slip proof surface.



V. Filler & Extenders



[한겨레신문]

방수소재 스니커즈 · 남성용 구두도 나와 장마철 뜨는 신발들

장마철 패션에서 옷보다 더 신경이 쓰이는 아이템이 바로 신발이다. 비가 많이 내리기라도 하면 신발에 물이 찰 수 있고, 슬리퍼를 신을 경우 발바닥이 미끄러워 넘어지기 십상이기 때문이다.

...(이하 생략)...

남성용 비즈니스 슈즈로 적합한 디자인으로는 ‘호킨스 트레블러’ 시리즈 중의 하나인 ‘아이스 테크’가 있다. 가죽에 방수 처리가 돼 비와 눈에 잘 젖지 않으며, **호두껍질**을 고무에 혼합한 밑창을 사용해 빗길이나 빙판길에 잘 미끄러지지 않는다. 가격은 8만9천원.



한겨레 신문 / 윤영미 기자 2004.7.8



V. Filler & Extenders

Walnut Shell Powder is one the eco-friendly filling material for Dull and Pillow, etc. and used for used for Safe Sands for sand playing.

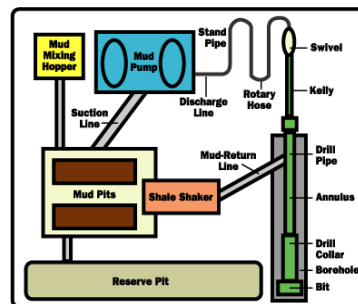
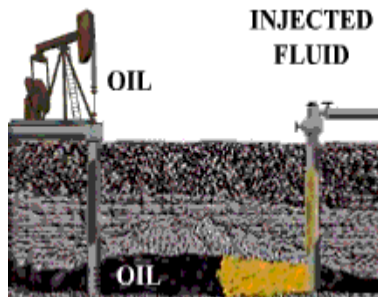


**Dull, Pillow →
Natural Dust Free Filler**



VI. Oil Industry

Walnut shell is used as lost circulation material to combat typical operational problems associated with drilling mud losses. Walnut shell is an easy and efficient solution to lost circulation problems. Walnut shell does not significantly change mud properties and can be removed and perhaps recycled with ease. Walnut shell is available in coarse, medium and fin grit sizes.



Crushed walnut shells used for oil
absorption in Oil Drilling

