

JULY 2023

# Business MATTERS

BUTLER COUNTY • THE INSIDE STORY

## Manufacturing & Transportation

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Collaboratively



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Mars Mineral general manager Kevin Leczkowski, left, and president and CEO Clayton Woodward walk the floor of their factory in Adams Township.

## ▲ Sustainability key at Mars Mineral

Ever wonder what happens to worn-out automotive and truck tires? At Mars Mineral, carbon black from the tires is repurposed into a usable form for downstream processing.

Carbon black, a byproduct of the petroleum refining process that traditionally is regarded as waste, possesses immense untapped potential. It is found in just about anything that's tinted black, including dashboards, windshield wipers — even the OtterBox cases used to protect mobile phones and other devices. It adds structural integrity to plastics and rubbers.

Virgin carbon black comes from the incomplete combustion of hydrocarbons, which is a big carbon emitter. The process is anything but environmentally friendly.

Since 1972, Mars Mineral has provided companies around the world with access to equipment that transforms carbon black powder from waste tires into valuable products without adding to their carbon footprint.

"In the sustainability world, we are a key supplier of equipment in repurposing automotive and truck tires," said Clayton Woodward, the second-generation owner

of Mars Mineral.

Their equipment eliminates the need for pyrolysis to break down carbon black, which requires temperatures at or above 932 degrees Fahrenheit. Using limited oxygen and high heat, this method wastes energy and is dangerous to human health and the environment.

The revolutionary techniques and forward-thinking approach allow Mars Mineral to convert carbon black into a valuable resource for steel, foundry, chemical, mining, cement, lime and fertilizer industries, plus consumer product manufacturers.

### Making pellets

Mars Mineral designs and manufactures agitation agglomeration equipment that turns carbon black powder into spherical pellets using a liquid binder that's typically water-based. Businesses can customize Mars Mineral's carbon black processing systems to form pellets from 0.125 to 2 mm in diameter.

"Whatever material goes in comes out in a spherical pellet," Woodward said. "There are no byproducts or waste. It's a

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very eco-friendly process.”

Customers can use the equipment to turn carbon black powder into asphalt additives, computer and mobile phone cases, “green” tires, paint, printer ink and toner and automotive components. “There are a number of processes out there that produce dust, fines and powders,” Woodward said. “There’s equipment out there that collects it. If you take it and give it density, you can repurpose it back into the original process.”

The pelletizing process includes five steps:

1. A pin mixer takes carbon black powder from the storage bin and feeder and mixes it with the binder (typically water).
2. A dryer dries and cools the pellets before pushing them onto a conveyor belt that carries them to the screen.
3. A screen removes and recycles any oversize or undersized pellets, sending the good ones to the pellet storage bin.
4. A bagger takes the pellets from the bin and automatically packages them according to customer specifications.
5. A palletizer and stretch wrapper ar-

range the filled bags into pallets for easy stacking for shipping or storage.

Recycling black carbon into pellets does more than save the environment and preserve human health. It boosts the profitability of companies that produce a lot of black carbon by allowing them to reuse it instead of scrapping it.

## Saving the planet

Mars Mineral launched in 1972 in response to the enactment of the Clean Air Act of 1970. The act marked a major shift in the federal government’s role in air pollution control. Power plants, industrial plants and manufacturers found themselves under strict new guidelines for the type and amount of pollutants they could emit.

Pittsburgh’s steel industry was one of the biggest polluters of that period, emitting particulate matter that included black carbon. “We took that dust and made it a solid material so it could be reintroduced into the steelmaking process,” Woodward said. “We’ve taken that same technology and used it to serve other industries today.”

As a partner in sustainability, Mars



Clayton Woodward, left, and Kevin Leczkowski inspect a part at the Mars Mineral facility in Adams Township.

Mineral offers four distinct benefits to pelletizing carbon black powders for commercialization.

First, the company has more than 50 years of field-proven pelletizing experience. “All of our pelletizing equipment is backed by an engineering staff that’s qualified in car-

bon black processing,” Woodward said.

Second, its pin mixer provides operational flexibility and capability that produces consistent-quality pellets that meet customer requirements.

Third, the pin mixers are manufactured with only the highest-quality components and materials. Designed for one-piece



continuous-flow operation, it simplifies the pelletization process.

Lastly, Mars Mineral develops customer-specific operational blueprints and training guides to process high-quality pellets consistently.

Their pelletization process is beneficial to more than industries that create carbon black as a byproduct. One of the more innovative ways it could help the environment is by taking biochar from wood damaged in wildfires and grinding it into dust. That dust then can be pelletized, turning it into a homogeneous pellet for soil application, Woodward said.

## Companions in sustainability

Although Mars Mineral operates on a global scale, the local company that builds the pelletization equipment Mars Mineral sells dedicates its services to customers within a 100-mile radius of Mars.

Woodward Inc. is a metal fabricator that specializes in the design and fabrication of metal components and complex welded assemblies. Luckily for Mars Mineral, the

company has the same ownership, making the two businesses convenient companions in sustainability.

Woodward's father started Woodward Inc. in 1962 to serve customers in the power, water purification, metals, mining and construction businesses close to home. When he graduated from college, Woodward first worked for the family business before taking a break to work at Westinghouse for 8½ years. Eventually, he came back to Woodward, taking over when his father retired in 1990. "We're a second-generation local business and proud of it," he said.

The secret to their success is simple. "One thing Woodward brings to the table is knowledge and experience in manufacturing engineering," Woodward said. "We know how to build things."

While Woodward Inc. also prides itself on investing in the latest technology and equipment to stay competitive in the marketplace and continue to add value to its customers, that's not what gives it the edge over competitors. "More than anything else, it's the knowledge and expertise of our workforce. That's what makes the difference," Woodward said. "We're different than a machine

shop, where the machines are doing all the work. In the fabrication arena, it's the people doing all the work."

Woodward said he's evaluating expanding his combined facilities for Woodward Inc. and Mars Mineral with a new burning system, plus adding some of the new technology in the fabrication world.

While automation options exist, he said it's difficult to automate most of what the company does, so he continues to provide the kind of work environment that attracts — and retains — quality employees.

All manufacturing employees work four 10-hour days each week, giving them consistent three-day weekends. They have competitive wages and a safe harbor 401K



Mars Mineral and Woodward Inc., a metal fabrication company, have the same ownership and operate under the same roof.

program.

He refers to his leadership style as "motor management." All the individual parts must work together seamlessly, he said. "We take care of our people because they are the ones who make things happen," he said. "I just happen to be the bus driver."

— Article by Shari Berg, photos by Justin Guido