As research continues to yield breakthroughs in modern transportation, the evidence clearly shows that petrochemicals are integral to the future of travel. From self-healing tires that could save drivers from the repair shop to high-tech space suits enabling new discoveries, petrochemicals like isobutylene and butadiene — collectively known as butylenes — are integral to advancements big and small. And American petrochemical manufacturers are glad to be a part of it.

The butylenes our members make are the building blocks essential to synthetic elastomers and many different types of rubber (like styrene-butadiene rubber, butyl rubber and polybutadiene rubber), as well as the type of self-healing rubber that can resolve nail damage and other small punctures in tires. Instead of waiting hours on AAA or a tow truck, self-healing rubber can make it possible for us to keep moving and not miss a moment in our lives that matters. Now that's progress!

Butylene-based products are also relied upon by some of the most daring pioneers of our time. Neil Armstrong and other intrepid explorers who have followed him into the final frontier have bet their lives on neoprene and other protective liners and coatings, as these materials are critical for features like keeping oxygen inside spacesuits.

In these spacesuits, an inner liner is made from nylon coated with neoprene — both of which are made using butadiene. An additional nylon inner layer is essential to containing pressurized oxygen, and the flexible joints of the suit made of neoprene convolute allow astronauts to move freely and safely while accomplishing their work.

Whether strategizing the approach to an outer-space mission or plotting the course for a cross-country vacation, one of the places we frequently encounter butadiene is at the computer — in the acrylonitrile-butadiene-styrene (ABS) engineering copolymer found in computer housings and keyboards. While this may sound pretty high-tech, ABS is also used to make plastic building blocks that help kids — including, perhaps, some future space travelers — learn and practice motor skills as they grow.

From trouble-saving tires to high-tech spacesuits and computers, butylenes are taking humanity to new frontiers and are nothing short of integral to the innovations defining the future of travel.

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