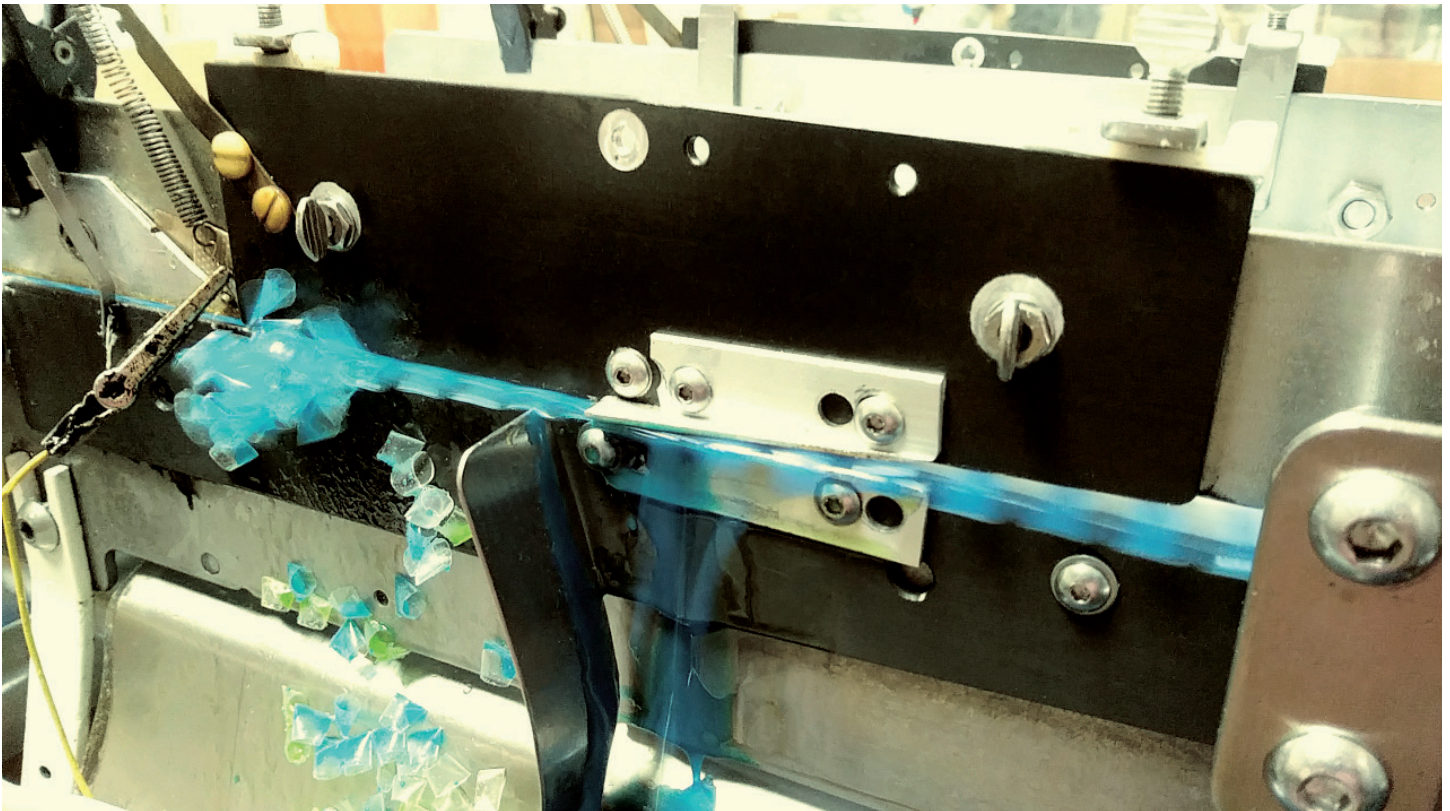


## Engineered Coating Provides ‘Sweet’ Production Boost For Honey-Based Snack Manufacturer



*Using patented sealing and cutting blades, the Honeystix machinery cuts and heat-seals 10 honey-filled sticks a second – or 13,000 sticks every hour.*

Nature’s Kick Honeystix is an Oregon-based company that manufactures Honeystix – hermetically sealed poly tubes filled with all-natural honey. Dubbed “the candy of the future” by Vancouver’s 1986 World Expo, Honeystix are available in several colorful flavors as a candy alternative for children. Over 700 million units have been consumed worldwide since the company was founded in 1980.

Although today the company is enjoying its sweet success, the manufacturing process was not always without its challenges. To prevent wear from affecting one of the machines used to cut and heat-seal the plastic tubing, operators were applying a non-stick fiber tape to the parts. The high heat of the machinery, however, was causing the tape to melt off – halting the production process.

That’s when they turned to General Magnaplate Corporation for a solution. Since coating the machine parts with one of our TUFGRAM® coatings, Nature’s Kick Honeystix has seen a significant boost in overall productivity.



## Manufacturing The Candy Of The Future

Nature's Kick Honeystix mass-produces its environmentally friendly, honey-filled straws using a patented manufacturing process and production machinery that Peters has developed and refined since 1982. The resin Honeystix uses for its packaging is environmentally safe: it is photosensitive to ultraviolet light and can be burned with nontoxic smoke – just like paraffin wax. It is also completely recyclable, BPA-free and Kosher-certified.



Today, the facility produces over 300,000 Honeystix daily with each pocket-sized tube containing about 1 teaspoon of U.S. Grade A liquid honey. First, the honey is warmed to help it flow better, then machines transfer the liquid honey, via pumps, to environmentally-safe tubing. After that, patented sealing and cutting blades complete the final stage of the Honeystix creation. The machinery cuts and heat-seals 10 sticks a second – or 13,000 sticks every hour.

But this impressive production process did not always run smoothly. To prevent the sealing and cutting blades from wearing down, operators were gluing non-stick fiber tape to the edges of each blade. Then they had to hope the tape would not melt or fall off. But over time, the tape would slowly wear away and sometimes compromise the seals. This inconsistency could result in faulty tubing – causing the Honeystix to possibly leak once they reached store shelves.

## TUFRAM® To The Rescue

A metal coating was needed that could protect the aluminum sealing and cutting blades from wear while also standing up to the high heat of the machines. After consulting with our technical sales team, they opted to have the blades coated with TUFRAM – an engineered coating that makes aluminum surfaces harder than steel. It also imparts permanent lubricity with previously unattainable levels of wear and corrosion resistance. *(To learn more about our TUFRAM family of coatings, see our sidebar.)*

According to the company, the application of this coating has benefited the Honeystix manufacturing process in three major ways. TUFRAM is a great insulator, so it protects the machine's electronics from short circuiting. It is also very slippery, which prevents the honey from sticking. And finally, it resists the heat – making it 10 times more reliable than the tape.”

This success is possible due to the dielectric, non-stick and thermal properties of our TUFRAM coatings:

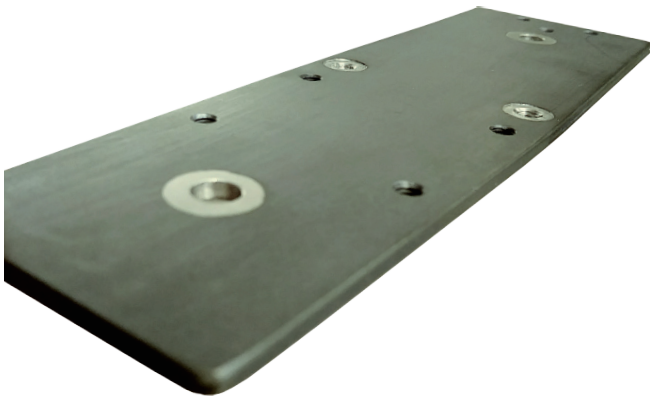
**Dielectric strength.** The TUFRAM coating process provides aluminum surfaces with excellent dielectric properties without affecting the high conductivity of the parent metal. TUFRAM is therefore an excellent insulator.



*To prevent the blades from wearing down, operators used to glue non-stick fiber tape to the edges. The high heat of the machinery, however, caused the tape to melt off – halting production.*

**Non-stick release and compliance.** Few solid substances – even adhesives, adhesive-backed products and glues – will stick to equipment coated with TUFAM. In addition, these coatings comply with FDA and USDA codes, making them advantageous for food processing applications, such as the Honeystix operation, as well as pharmaceutical and medical applications.

**Temperature resistance.** TUFAM coatings exhibit elevated hardness and self-lubricity. This incredible heat resistance helps extend the runtime of blades and prevents having to stop production to change them.



*In addition to protecting the blades from wear, TUFAM significantly reduced factory downtime and improved productivity by 30 percent.*

## SURFACE ENHANCEMENT FOR ALUMINUM AND ALUMINUM ALLOYS

Created in a proprietary, multi-step process that makes aluminum surfaces harder than steel, TUFAM coatings outperform conventional hard anodizing and similar processes when it comes to corrosion resistance, friction reduction and hardness. Here's a rundown of some of its features:

- **Corrosion resistance.** TUFAM coatings resist most common chemicals and salt spray. In salt spray testing, these coatings also exceed the AMS 2482 requirement of 336 hours.
- **Improved hardness.** TUFAM coatings elevate the surface hardness of aluminum to levels comparable with case-hardened steel or hard chrome plating—between Rc 40 and 65, depending on the particular coating and alloy.
- **Reduced friction.** A low coefficient of friction protects TUFAM-coated parts against abrasive wear and galling. It also reduces stick-slip behavior and vibrations in sliding motion applications.

## A Sweet Boost In Productivity

Since coating the sealing and cutting blades with TUFAM, Nature's Kick Honeystix has been able to significantly reduce factory downtime.

Previously, operators had to frequently stop the machines to replace blades that had worn down or re-apply the non-stick tape that had fallen or melted off. The company tells us the nicest thing they've found about using TUFAM is how much more mass-productive they can be. In the old days, it took hours to rebuild their blades. Now, it just takes minutes.

In fact, thanks to TUFAM, the Honeystix plant has increased its production by over 30 percent. "The people at General Magnaplate are amazing," Nature's Kick says. "They are the way all companies should be – from their technicians to their customer service. I couldn't be more grateful for what they've done for my business."