

dough. More than two billion cans of Play-Doh later, Hasbro still wants to protect its turf. The formula for this soft, squishy play stuff remains top secret.

## REFERENCES

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# Dippin' Dots

## The ice cream from outer space

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**T**HE KEY TO MAKING THE BEST ICE CREAM IS EXTREME COLD—if you freeze the mix quickly enough, ice crystals don't have time to form and the end result is wonderfully smooth and creamy. Extreme cold, though, doesn't mean Siberian, or even Arctic: we're talking way down below -250 degrees fahrenheit—temperatures even a commercial ice cream machine can only dream of reaching.

One day in 1987, Curt Jones was making homemade ice cream with a neighbor at his home in Lexington, Kentucky. As he cranked the handle, he tried to explain to his friend what he did at work. Jones, a microbiologist, worked at an agricultural feed plant, where he experimented with ways of freezing enzymes and “good” bacteria to put into animal feed.

At the plant, he said, they were using liquid nitrogen to freeze the feed into pellets at -340 degrees fahrenheit. You could do the same thing with ice cream, he explained by way of example. Three weeks later Jones, intrigued by thought of making ice cream at temperatures colder than a chilly day on Pluto, took his friend and some ice cream mix to the lab. They mixed it up with liquid

nitrogen and tasted the result. His findings were ambiguous—“It was really cold, about -200, and we burned our tongues,” he recalls. But after it warmed up a little (to a relatively civilized -20) it was deliciously smooth.

Making nitrogen ice cream is a fairly well-known party trick among scientists: you just make up ice cream mix in a bowl, then pour in liquid nitrogen and stir with a spoon, preferably wearing gloves and goggles, and it freezes solid in moments. But Jones then put his ice cream mix through the nitrogen-freezing pellet machine, producing ice cream that was not only cryogenically frozen but formed into tiny beads—a unique, potentially captivating product. “I kinda put two and two together,” he says. “I really felt from the very beginning that it might have a chance because it was so different.”

Jones was by profession a scientist (he studied microbiology at Southern Illinois University), but he had grown up on a farm near Grand Chain, Illinois, where he had shown natural entrepreneurial flair as a youth running numerous enterprises including repairing radios, making brooms, raising livestock, and hauling hay and straw. “Growing up on a farm you do everything yourself,” he says. “You are also exposed to risk—planting a crop is a risky venture every time you do it.”

Jones was excited enough about his ice cream pellets that he sold his car and used some \$12,000 in savings to have equipment built that would allow him to make ice cream pellets in his garage, including special freezers shipped from Europe that would keep the ice cream below -40.

The ice cream machine he designed—and later patented—was essentially a tank with a pool of liquid nitrogen in the bottom. Ice cream mix dripped through holes in the top of the tank, fell through super-cold evaporated nitrogen, formed into tiny beads like hailstones, then froze rock solid when they hit the liquid nitrogen at the bottom—a process Jones was later to describe the process on the *Oprah Winfrey Show* as “freezing raindrops.”

Inventing the product was the easy part. Jones now had to convince people to buy it. And because Dippin' Dots—as he called it—was unique, it took a bit of explaining.

Jones, now twenty-eight, quit his day job and with wife Kay and daughter Tracey, opened his first store in Lexington, Kentucky, immediately making several potentially fatal mistakes. The builder they hired to fit out the store took them for a ride, leaving them with zero start-up capital for advertising and marketing when they eventually opened. And while they were in a busy location, with 20,000 cars driving past each day, what they needed was foot traffic—in particular, people who were in the mood to try a new, unusual product. “We lived on credit cards that first year,” Jones says.

Jones figured the perfect place for the product was theme parks, where visitors would have time to try a sample cup and were in the mood for a treat. In 1989, he persuaded Opryland, in Nashville, to sell Dippin' Dots to their visitors, but, after two years, Opryland was considering dropping it. The problem, Jones discovered, was that the teenagers manning the booths weren't doing much to promote the Dots, basically expecting them to sell themselves. But most people don't just walk up and buy strange-looking food, especially ice cream that looks nothing like ice cream. They need a little persuading, and a free sample, first.

So Jones negotiated with Opryland to let him staff a booth with his own people. He and twelve others—some local, some from home—slept in sleeping bags in a nearby apartment in Nashville, spending their waking hours promoting Dippin' Dots at the park, with Jones riding around on his bicycle persuading visitors to check out his stand. It worked, though the night before they opened it snowed. “Then the next day we were trying to sell ice cream,” says Jones.

As demand grew—albeit slowly—Jones needed money to expand his production facilities beyond his garage, opening a small factory in a former liquor store in Paducah, Kentucky, in 1990. Jones was always extremely reluctant to borrow money or bring in outside

investors, raising cash instead from his father, who mortgaged the family farm, his sister, and a \$40,000 credit card debt (before he quit his job at the feed plant, he had taken out six credit cards). The company is still owned privately, by Jones and his family. His wife, he admits, “was a little nervous at first.”

The breakthrough came in 1992 when the Kennedy Space Center agreed to sell the product as “Space Dots,” and they proved so popular visitors didn’t bother with the free sample cups—they just wanted to buy some.

As the line-up of flavors grew—it now includes such variations as tropical tie-dye, watermelon, and chocolate chip cookie dough—so did the business. In 2003, the company made some \$36 million, and by 2004 there were some six hundred Dippin’ Dots franchises in the United States, with Dots now sold in amusement parks, movie theaters, fairs, malls, and even through specially designed robotic vending machines. Start-up costs in the United States for franchises are between \$50,000 and \$100,000 depending on location.

Jones has fought several legal battles to protect his patent and his brand. Instead of selling the Dots to retailers, Jones initially set up a network of independent dealers who would work hard to explain the product, and hunted down special trucking containers that required dry ice to keep the Dots in good condition.

In 2000, Jones decided to launch Dippin’ Dots as a franchise, grandfathering over his existing dealers. Eight were apparently unhappy with the arrangement: according to court documents, on March 16, 2000, they simultaneously cancelled their contracts with Dippin’ Dots and reopened under the name Frosty Bites, a competitor. Jones took them to court but suffered a setback when the court found that, while the dealers may have acted unethically, they had not technically broken the law. Jones estimates the patent battle, which is ongoing, has cost him some \$5 million. Still, he’s philosophical about it: “At the end of the day, the person who buys it is not going to worry whether you had a patent or not.”

There are also licenses around the world: Jones first went global in 1995 with Japan, where a distributor had shown interest very early on, but nobody was sure how the Dots would fare on the voyage. So in 1994, Jones brought a shipping container into the parking lot, filled it with dry ice and Dippin' Dots and waited to see how long it took to melt. It lasted 15 days—just long enough to make the ocean crossing.

In 2004, Dippin' Dots had revenue of \$40 million. It has a sister factory in South Korea, and sends its Dots worldwide in refrigerated containers, approximately 50,000 dots to the gallon. Jones, who likes golf and ballroom dancing and has five pets, hopes to grow the business to \$100 million, and then see how he feels about it. “I’m still having fun with it,” he says.

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## Build-A-Bear Workshop

It’s never too late to rethink a timeless product

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**B**Y THE END OF THE TWENTIETH CENTURY, THE COMMERCIAL potential of the humble teddy bear had been pretty well exhausted. Available everywhere from your local service station to FAO Schwartz, in any color, price, size, and even species you could think of, it seemed there was little room for a new “concept” in bears.

So when Maxine Clark, a recently retired retail executive from St. Louis, Missouri, started pitching her idea for a teddy bear shop to