

# SCIENCE BEHIND SPORT

## THE FAN EXPERIENCE

BEHIND EVERY SPORTING EVENT AND HARD-WON CHAMPIONSHIP, SCIENCE PLAYS A KEY ROLE IN MAKING FAN AND ATHLETE EXPERIENCES SAFER AND MORE COMFORTABLE, AND PRODUCTS MORE SUSTAINABLE.

### FOOD & BEVERAGE

DOWFROST™ Inhibited Propylene Glycol-Based Heat Transfer Fluid helps control temperature throughout beer manufacturing to facilitate consistent taste, color and aroma.



On average, 110,000 pints of draft beer and lager are served at Wimbledon.<sup>1</sup>

### PERSONAL CARE

SunSpheres™ SPF Boosters increase the efficacy of UV filters while film forming technologies like EPITEX™ Polymers and DOWSIL™ Silicone Acrylates offer long-lasting water resistance in sunscreens.



Sun protection during winter sports is just as important as summer. Snow can reflect almost 100 percent of the sun's rays back to your skin, and high-altitude areas receive a significantly greater amount of UV radiation.<sup>3</sup>

DOWSIL™ 556 Cosmetic Grade Fluid helps with faster dry time in antiperspirants and deodorants without leaving white residue to keep athletes and fans dry and comfortable all day.

### TICKETS

ROPAQUE™ Opaque Polymer coating technology for ticket receipts create a permanent image to help reduce smudging or ink transfer for fans putting receipts in their pockets at a sporting event.



At the Olympic Games Rio 2016, more than 6.2 million tickets were sold.<sup>4</sup>

### PACKAGING

Flexible packaging technologies help protect freshness, extend shelf life, minimize spoilage and improve overall safety to help decrease food waste.



#### At its peak

the Olympic Games Rio 2016 athletes' village kitchen<sup>2</sup>



Prepared 60,000 meals a day.



Used 460,000 pounds of ingredients.



Served 18,000 athletes, coaches and staff.

### APPAREL & GEAR

INFUSE™ Olefin Block Copolymers are one of the most lightweight material options available. They improve the rebound, compression set and dimensional stability of a shoe, and help protect the runner's foot by absorbing shock from walking, jumping and running.



The average life span of a running shoe is about



300 to 450 miles

OR



six months<sup>5</sup>

XIAMETER™ Silicone Rubber offers smoothness and comfort for swimming essentials, from caps and ear plugs, to diving masks and goggle straps.

Increasing interest in water sports is expected to drive the swimwear market to \$20 billion by 2019.<sup>6</sup>

### CONNECTING FANS

Dow-sourced ultra-pure solvents help with faster processing speeds, lower battery consumption and longer smart phone life, helping fans share the experience and stay connected to the latest scores.



150 million tweets were posted during the Olympic Games London 2012.<sup>7</sup>

Other infographics in the science behind sport series:  
GETTING TO THE STADIUM AND INSIDE AND OUTSIDE THE STADIUM

©™ Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

1 [https://www.wimbledon.com/en\\_GB/etoz/faq\\_and\\_facts\\_and\\_figures.html](https://www.wimbledon.com/en_GB/etoz/faq_and_facts_and_figures.html)

2 [www.businessinsider.com/ap-rio-olympic-spread-everything-from-halal-to-kosher-to-kimchi-2016-5](http://www.businessinsider.com/ap-rio-olympic-spread-everything-from-halal-to-kosher-to-kimchi-2016-5)

3 <http://www.ncaa.org/health-and-safety/sport-science-institute/sun-safety-athletes>

4 <https://stillmed.olympic.org/media/Document%20Library/OlympicOrg/Games/Summer-Games/Games-Rio-2016-Olympic-Games/Media-Guide-for-Rio-2016/IOC-Marketing-Report-Rio-2016.pdf>

5 [www.esquire.com/lifestyle/health/a56647/when-to-get-new-athletic-shoes/](http://www.esquire.com/lifestyle/health/a56647/when-to-get-new-athletic-shoes/)

6 [www.businesswire.com/news/home/20160324005076/en/Global-Swimwear-Market-Exceed-USD-20-Billion](http://www.businesswire.com/news/home/20160324005076/en/Global-Swimwear-Market-Exceed-USD-20-Billion)

7 <https://phys.org/news/2012-12-million-tweets-london-olympics-twitter.html>

