



# SOCIAL LISTENING

## **UPDATE:** PLASTIC, MICROPLASTIC, NANOPLASTIC: A REVIEW OF CONVERSATIONS

This report explores conversations, perceptions, and public awareness regarding microplastics and nanoplastics. The first version of this report was completed on September 20, 2019. Shortly thereafter, new research emerged focusing on the microplastics and nanoplastics released from heated tea bags.

This report provides an update regarding public sentiment around micro- and nano- plastics as the conversation and sentiment around plastics was largely unaffected by this new research.

This document explores themes on overall topics, rather than focusing on the lifecycle of one or two specific articles.

### Microplastics

#### Reach

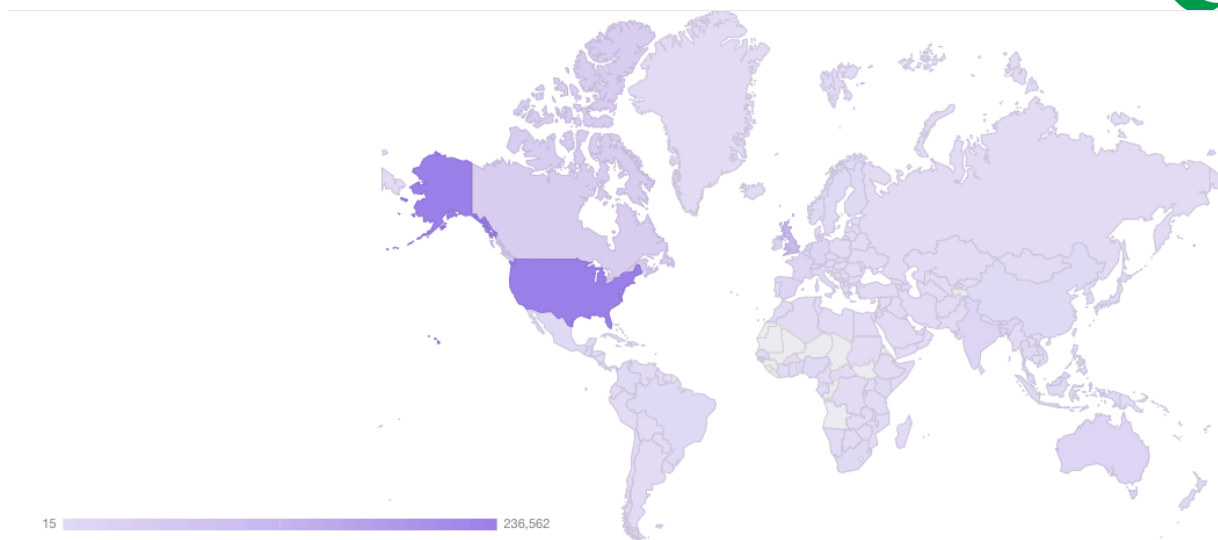
Conversations around “microplastic” are still **trending up** and show signs of a continued uptick in both the short and long term.

To present date (October 11, 2019), there have been at least **1M+** mentions of “microplastic”, reaching more than **10.7B+** accounts since the term became trackable in 2013.

These numbers do not include associated words and topics such as “microbeads” or “plastic.” Including related terms would increase the total mentions and reach.

While our social listening tool cannot access all data from all countries (e.g., China, Russia, and other areas with limited access), the conversation around microplastics, much like plastics, emerges in most countries regardless of year, with men and women almost expressing concerns on a nearly equal basis. *See graphic below.*





## Net Sentiment

Since 2013 the conversations around microplastics are **negative** with **77.2%** of accounts using some negative language in association with the term “microplastic”. The negative net sentiment hovers around 74.3% when adjusting for the current year-to-date data.

## Key Words associated with “microplastic”

“Fish” “Research” “Micro Beads” “Marine Life” “Plastic Pollution” “Marine Debris” “Single-Use Plastic” “Tea” “Environment” “Water” “Climate Change”

Of note, human health is not currently an associated word; however, based on observed conversations, we believe it could become associated with the term “microplastic” in the very near future.

## Conversations

Negative conversations still largely discuss environmental, water, and marine health. It appears the conversations around tea bags releasing micro- and nano- plastics amplified conversations around marine and fish health as it opened the public up to learn more about the presence of microplastics in general.

Emotional expressions still include anger, frustration, and hopelessness as many conversations discuss all plastics breaking down into microplastics,



thus magnifying the potential negative impacts of microplastic contamination in the future.

Virtue signaling imagery is common with people sharing plastic alternatives to common plastics such as straws, plastic bags, etc. In addition, metal tea balls used to brew tea rather than tea bags appear on the list.

While the sentiment score shows positive conversations involving microplastics, most conversations associating positive words with “microplastic” involve ways to avoid using plastic altogether. Tips and tricks and multiuse products are involved in these positive mentions. This signals the potential for increased sales of “natural” and reusable products.

Conversations continue to shift on what people can do to prevent exposure to microplastics. While fewer immediately available conversations revolve around climate change, people appear to want to include reducing plastic and microplastic exposure in climate change related goals.

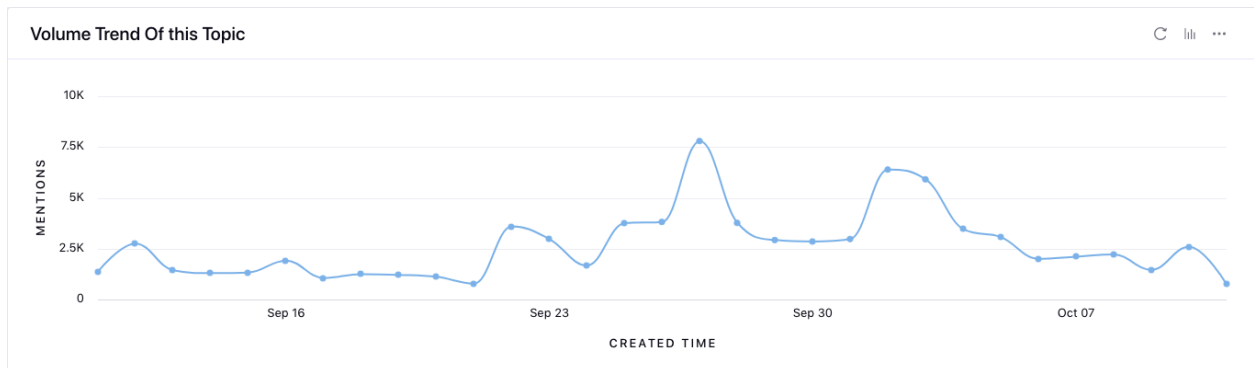
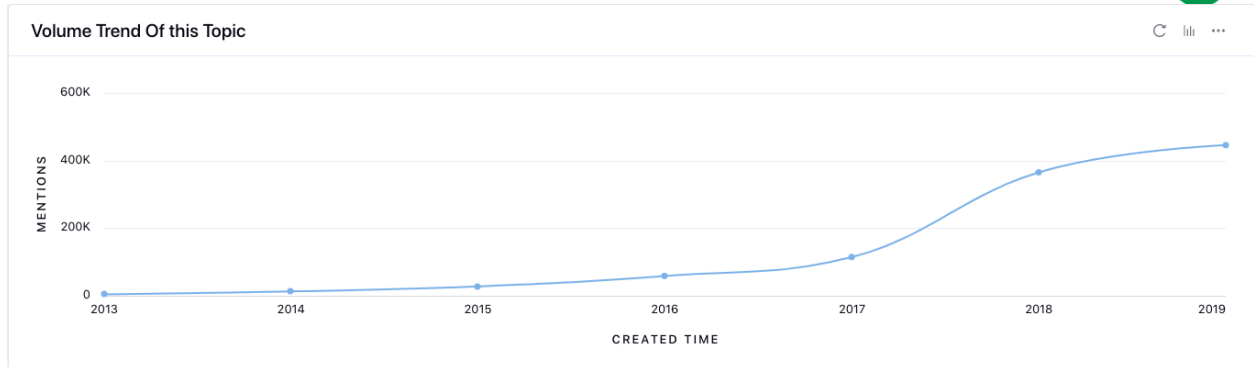
Conversations around washing clothing and fashion continue to be called-out and associated with microplastics, with some environmentally conscious designers remarking on the need to wash clothing less frequently due to the microplastics released from washing synthetic clothing. While these conversations are currently limited, we can anticipate more public discussions about this issue going forward.

Additionally, many conversations are calling on scientists to do more extensive research on microplastics. The public wants solutions to the perceived microplastic problem (e.g., how do we prevent microplastics exposure caused by the washing of clothes?) and are looking to the scientific community to supply answers as well as actionable next steps to reduce microplastics (more on this in *Overall Impressions & Next Steps*).

## Trend

Conversations are increasing as a whole and we believe conversations will **continue to increase** as more research and media coverage ignites concerns and calls for change regarding the use of plastic materials, especially if emerging research demonstrates adverse human health impacts from microplastics. See *graphic below: 2013-October 11, 2019, year-to-date, September 11, 2019-October 11, 2019.*







# Nanoplastics

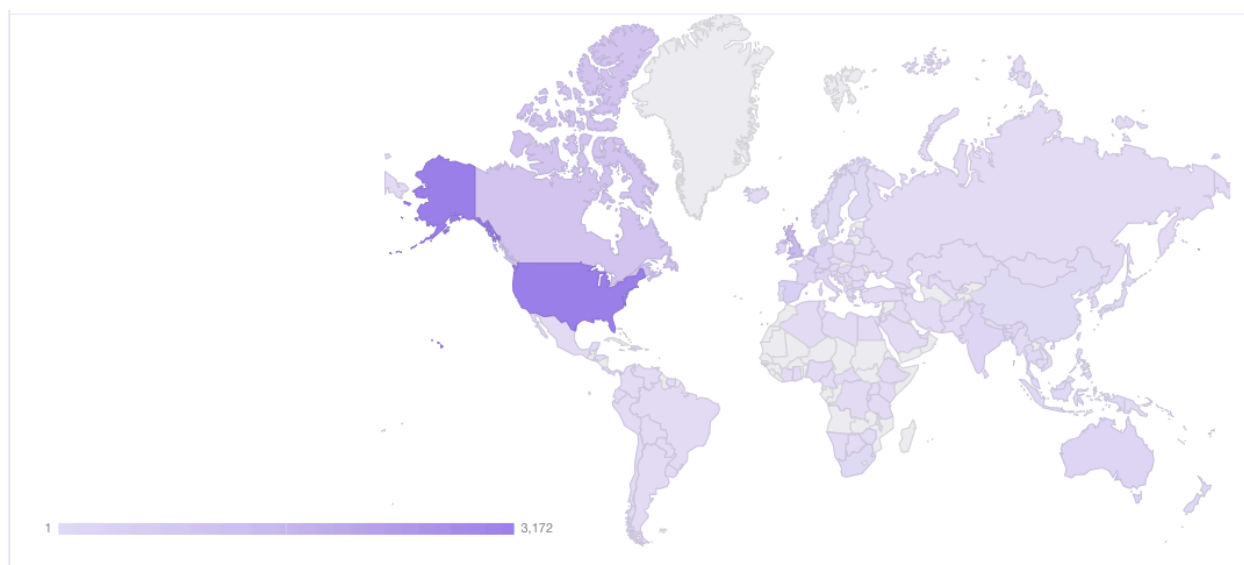
## Reach

Conversations around “nanoplastic” **peaked and have flattened** but show signs of an increase in the long term. Of note, these conversations are still heavily centered on scientists and researchers active in digital, science-focused communities, although more individuals from health and environmental communities are participating in the conversations.

To date (October 11, 2019), there have been **14,513** mentions of the term “nanoplastic”, reaching more than **88M** accounts since it became trackable in 2013. Of note, this has increased from **19M** accounts reached from 2013-September 20, 2019.

These numbers do not include associated words and topics such as “tea” or “microparticles.” Including related terms would increase the total mentions and reach.

While our social listening tool cannot access all data from all countries (e.g., China, Russia, and other areas with limited access), we can see the conversations around the term “nanoplastic” are concentrated in the United States of America, the United Kingdom, Canada and the Netherlands. Interestingly, with the increased media attention, more men (8.4%) are now participating in nanoplastic discussions than women; whereas previously more women lead the discussions. *See graphic below.*





## Net Sentiment

Since 2013 the conversations around the term “nanoplastic” have been **negative** with **79.6%** of accounts using some negative language in association with the term.

## Key Words associated with “nanoplastic”

“Tea” “Teabags” “Brewing” “Human” “Research” “Particles” “Water”  
“Marine” “Fish”

Note, the association between “fish” and “nanoplastic” decreased dramatically, to the point that it is barely visible on the radar. That could change if new research associating fish and nanoplastics emerges.

## Conversations

Negative conversations largely discuss the potential for negative human health impacts, ingestion, and the potential for harm caused by nanoplastics passing through the human GI tract.

There is an increase of emotional responses related to nanoplastics, especially of shock and warning. However, the majority of the conversations remain academic and research focused.

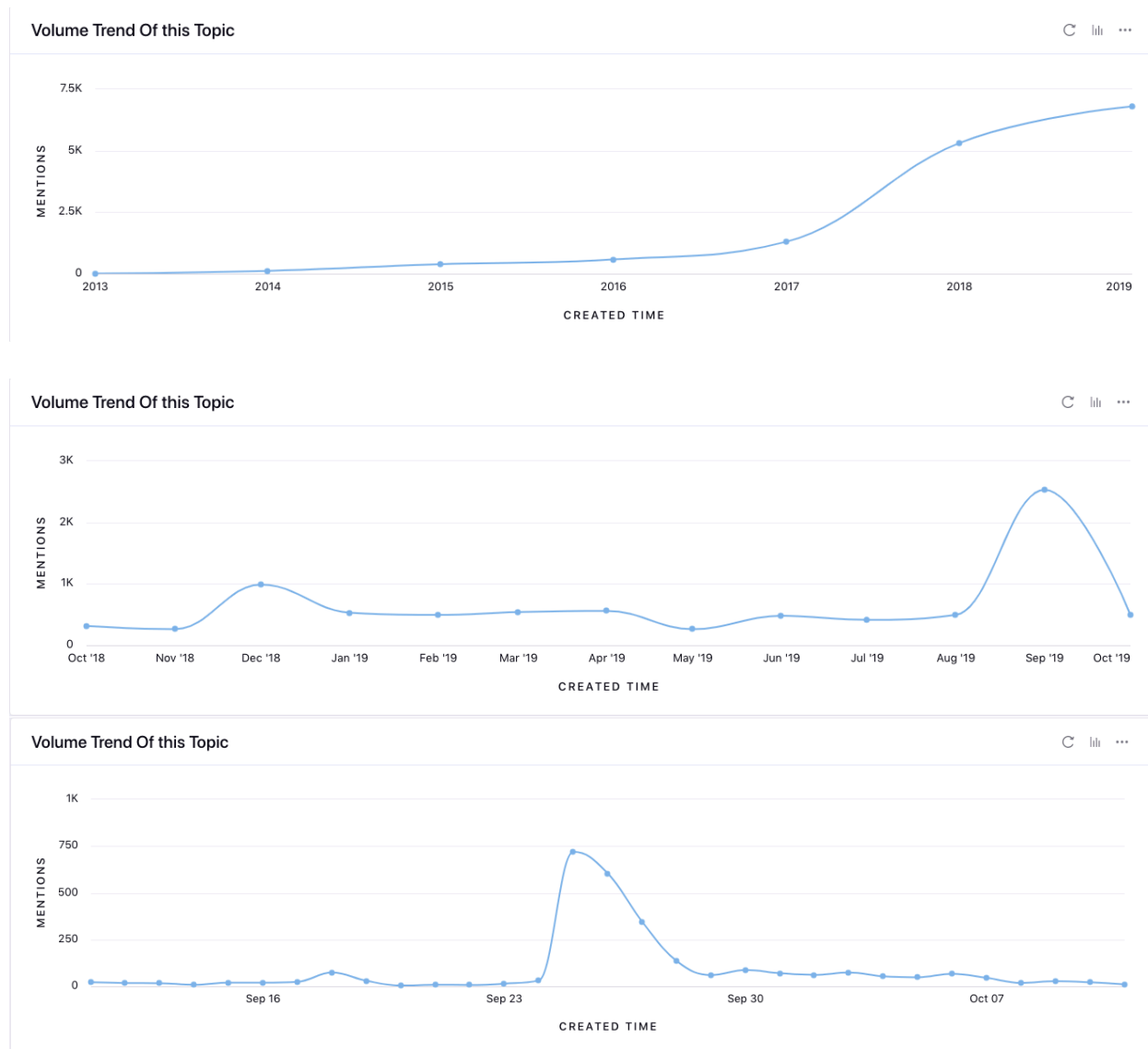
While the sentiment score shows some positive conversations involving nanoplastics, most conversations associating positive words with nanoplastics involve the need for further research or for the prospects of upcoming research.

Discussions around nanoplastics increased and demonstrate an even greater curiosity and desire to learn about the impact of nanoplastics. There is a small, yet noticeable uptick of researchers looking for conferences to discuss and learn about micro- and nano- plastic science.



## Trend

As predicted in the prior report, conversations dramatically increased with the release of new research. While discussions have flattened out for the time being, we believe conversations will again **increase** as more research emerges and is shared by the media. *See graphic below: 2013-October 11, 2019, year-to-date, September 11, 2019-October 11, 2019.*





## OVERALL IMPRESSIONS

Based on the increased public visibility of micro- and nano- plastics, it is evident that the general public cares about these issues. The general public will expect to see more research into plastics, especially microplastics. The public still appears to be looking to scientists to provide a plan of action to remove or reduce plastic and microplastic waste. Additionally, the public will prefer to see recommended plans that include actionable steps citizens and governments can take to help limit and remediate the harm caused by plastics, especially as it relates to marine life.

The themes around which the public expressed a desire for researchers to explore remain unchanged. They are still interested in “human health,” “human development,” “marine health,” “cancer,” and “hormone disruption.” The public is seeking to understand the long-term health impacts plastics and microplastics may cause humans as well as marine life.

With the public desiring more research, the scientific community has an engaged audience with which to share outcomes. However, this means that research needs to be shared in a responsible and easy-to-understand format as any research in this area could gain substantial media coverage.

There are also educational opportunities that the scientific community can address in anticipation of future research outcomes. For example, explaining the differences between micro- and nano- plastics, and familiarizing the public with other related key scientific terms.

As stated previously, the plastics conversations are far from over and we will continue to monitor public perceptions and update our information as research is released around this topic.

---

The Center for Research on Ingredient Safety at Michigan State University is a collaborative initiative between academia, government, non-governmental organizations, and industry to provide research-based information to the global community.

Join the conversation on Twitter @CRISbits or by emailing us at [cris@msu.edu](mailto:cris@msu.edu).