Survey on Measurement Needs for Plastics Recycling

This survey is administered by the National Institute of Standards and Technology (NIST) Circular Economy Program. The program leverages NIST's expertise and collaborates with stakeholders to address circularity challenges related to measurement science, standards, and technology. The intent of this survey is to better understand measurement challenges related to plastics recycling.

The survey should take approximately 30 minutes to complete and consists of four sections:

- **Section 1: Relationship to Plastics Recycling.** Questions about your role in plastics recycling and your involvement in measurements.
- **Section 2: Physical measurement needs and challenges.** Questions related to your ability to provide data requested by customers or receive data needed from suppliers as well as related measurement challenges.
- **Section 3: Specific measurement improvements needed.** Requests you to identify up to three specific measurement improvements that would benefit plastics recycling.
- **Section 4: Potential NIST-led workshop.** Questions related to a potential NIST-led workshop focused on measurement needs for plastics recycling.

Please respond to this survey only once. You may skip any question that you do not have information for or choose not to respond to. Personal identifying information will not be collected as part of this survey.

If you have questions about this survey, please contact Michelle Seitz (michelle.seitz@nist.gov).

Paperwork Reduction Act Statement:

OMB CONTROL NUMBER: 0693-0043
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A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995 unless the information collection has a currently valid OMB Control Number. The approved OMB Control Number for this information collection is **0693-0043**. Without this approval, we could not conduct this information collection. Public reporting for this information collection is estimated to be approximately 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. All responses to this information collection are voluntary. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the National Institute of Standards and Technology, Attn: Michelle Seitz, 100 Bureau Dr., Gaithersburg MD 20899-8301 or michelle.seitz@nist.gov.

Section 1: Relationship to Plastics Recycling

Questions about your role in plastics recycling and your involvement in measurements.

1) Which of the following best describes your role in plastics recycling? (Select one)

- ◯ Collect materials for recycling (e.g., hauler)
- ◯ Sort materials for recycling (e.g., materials recovery facility (MRF) or secondary sorting facility)
- ◯ Produce recycled plastics (e.g., reclaimer or recycler)
- ◯ Buy / use recycled plastics
- ◯ Supply materials / additives
- ◯ Supply equipment for recycling
- ◯ Supply analytical instruments
- ◯ Materials testing laboratory
- ◯ Academic or research institution
- ◯ Government
- ◯ Other: _____

2) Do you personally perform or rely on measurements in your work?

- ◯ I perform measurements directly
- ◯ I rely on measurements performed by others
- ◯ I both perform measurements directly and rely on measurements performed by others
- ◯ I neither perform measurements nor rely on measurements performed by others

3) What are your primary objectives for performing measurements?

- ◯ Characterize materials
- ◯ Monitor or control processes
- ◯ Ensure quality or compliance
- ◯ Research or development of new materials / technologies
- ◯ I do not perform measurements
- ◯ Other: _____

4) Briefly describe measurement methods you use or rely on related to plastics recycling.

Your answer

Section 2: Physical measurement needs and challenges

Questions related to your ability to provide data requested by customers or receive data needed from suppliers as well as measurement challenges.

5a) With the tools you currently have, are you able to provide the data requested by your customers?

- ◯ Always
- ◯ Mostly
- ◯ Sometimes
- ◯ Rarely
- ◯ Never
- ◯ Not applicable

5b) Describe the data that is requested but you cannot provide. Comment on the challenge(s) to providing such data.

Your answer

6a) Are you able to receive all the data you need from your suppliers?

- ◯ Always
- ◯ Mostly
- ◯ Sometimes
- ◯ Rarely
- ◯ Never
- ◯ Not applicable

6b) Describe the data that would be beneficial to you but is currently unavailable.

Your answer

7) If the measurement tools or data available to you, your suppliers, or your customers could be improved, what improvements would you want to see?

Please consider aspects related to material characterization (feedstocks, contaminant identification, outputs) as well as process characterization / monitoring.

Your answer

8) In your opinion, what is the most significant physical measurement challenge that, if overcome, would have the largest impact on plastics recycling?

Your answer

Section 3a: Specific measurement improvements needed

Please identify up to three specific measurement improvements that would benefit plastics recycling.

Use the questions below to identify the first measurement improvement needed.
If you do not have specific measurement improvements to contribute, you can skip these questions.
You will have the opportunity to identify two additional needs in the next questions.

9a) Describe the tool or method that requires improvement.

Your answer

9b) Describe what is being measured.

Your answer

9c) Select the type of improvement most needed.

- ◯ Increased speed
- ◯ Increased accuracy
- ◯ Increased reproducibility / comparability
- ◯ Decreased measurement cost
- ◯ Decreased measurement complexity
- ◯ Other:

9d) Please include any other comments you would like to share about this need.

Your answer

Section 3b: Second measurement improvement needed

Use the questions below to identify a second measurement improvement needed.
If you do not have a specific measurement improvement to contribute, you can skip these questions.
You will have the opportunity to identify one additional need in the next question.

10a) Describe the tool or method that requires improvement.

Your answer

10b) Describe what is being measured.

Your answer

10c) Select the type of improvement most needed:

- ◯ Increased speed
- ◯ Increased accuracy
- ◯ Increased reproducibility / comparability
- ◯ Decreased measurement cost
- ◯ Decreased measurement complexity
- ◯ Other:

10d) Please include any other comments you would like to share about this need.

Your answer

Section 3c: Third measurement improvement needed

Use the questions below to identify a third measurement improvement needed.
If you do not have a specific measurement improvement to contribute, you can skip these questions.

11a) Describe the tool or method that requires improvement.

Your answer

11b) Describe what is being measured.

Your answer

11c) Select the type of improvement most needed.

- ◯ Increased speed
- ◯ Increased accuracy
- ◯ Increased reproducibility / comparability
- ◯ Decreased measurement cost
- ◯ Decreased measurement complexity
- ◯ Other:

11d) Please include any other comments you would like to share about this need.

Your answer

Section 4: Potential NIST-led workshop

NIST holds workshops with a diverse range of stakeholders including industry, government, academia, and others to identify key challenges and opportunities. Responses to the following questions will be used to inform a potential NIST-led workshop focusing on measurement needs for plastics recycling.

12) Do you have a recommendation for keynote speakers or topics?

Your answer

13) Do you have a recommendation for breakout discussion session topics?

Your answer

14) Please provide any other comments or recommendations for consideration when developing such a workshop.

Your answer

15) Select the workshop format you would be most likely to participate in.

- ◯ A one- or two-day in-person event at NIST in Gaithersburg, Maryland
- ◯ A virtual event spread over three days
- ◯ Either the in-person or virtual approach
- ◯ Neither

16a) Would the creation of a new standing body (e.g., working group or consortia) focused on addressing physical measurement challenges for plastics recycling be impactful?

- ◯ Yes
- ◯ No
- ◯ Not sure

16b) Please explain your answer to question 16a and / or comment on considerations for the formation of such a body.

Your answer

Thank you

We appreciate you taking the time to provide input into this survey.

If you have questions about this survey, please contact Michelle Seitz (michelle.seitz@nist.gov).
To learn more about, the NIST Circular Economy program visit: https://www.nist.gov/circular-economy

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