

Oct 23, 2019

Microplastic SEM Sample Prep



Forked from [SEM Sample Prep](#)

DOI

dx.doi.org/10.17504/protocols.io.uy8exzw



Melissa B Duhaime¹, Rachel Cable¹

¹University of Michigan

Duhaime Lab

Environmental Microbiol...

1 more workspace



Melissa B Duhaime

University of Michigan

Create & collaborate more with a free account

Edit and publish protocols, collaborate in communities, share insights through comments, and track progress with run records.

Create free account

OPEN  ACCESS



DOI: <https://dx.doi.org/10.17504/protocols.io.uy8exzw>

Protocol Citation: Melissa B Duhaime, Rachel Cable 2019. Microplastic SEM Sample Prep. **protocols.io**
<https://dx.doi.org/10.17504/protocols.io.uy8exzw>



License: This is an open access protocol distributed under the terms of the **Creative Commons Attribution License**, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

Protocol status: Working

We use this protocol and it's working

Created: October 24, 2018

Last Modified: October 23, 2019

Protocol Integer ID: 17152

Keywords: microplastic sem sample prep, sample


Troubleshooting



Sample Dehydration

1 Fill a petri dish with enough PBS to submerge your microplastic sample. Rinse the plastic in the PBS bath to remove loosely associated debris.

2 Next, create similar baths of ethanol or HMDS, as indicated below.

Submerge each piece of plastic in the bath, let incubate in solution for  00:15:00

Washes:

1. 25% ETOH
2. 50% ETOH
3. 70% ETOH
4. 95% ETOH
5. 100% ETOH
6. 100% ETOH
7. 2 ETOH: 1 HMDS
8. 1 ETOH: 1 HMDS
9. 1 HMDS

Drying

3 Air-dry the dehydrated samples overnight in desiccator underneath a fume hood.

 12:00:00 overnight

Affix

4 Affix plastic to double-side carbon tape on aluminum stud.

Draw a strap of carbon paint from stud base to top of plastic. Dry overnight in desiccator.

 12:00:00 overnight

Microscopy

5 The next day, sputter-coat plastic sample with heavy metal.

6 Image sample under scanning electron microscope as soon as possible following sputter-coating.



Note

Samples keep for a maximum of 2 weeks after prep.