

Microplastics Particle Identification Guide

I. Plastics

- 1.) **Fragment** – Unidentified, hard, and sometimes may have waxy texture
- 2.) **Pellet** – Hard sphere
- 3.) **Film** – Flimsy, thin sheets
- 4.) **Line** – Long, thin
- 5.) **Foam** – Soft, irregularly shaped
- 6.) **Nurdle** – Hard, rigid, fixed shape
- 7.) **Clusters of microplastics** - Many microplastic pieces stuck together. Each identifiable microplastic in a cluster is counted individually and categorized into one of the categories listed above.

II. Non-Plastics

- 1.) **Plant Matter-** Irregular shaped, dark in color, Interior may contain vein like structure.
- 2.) **Mineral Fragment-** dark in color, hard, may contain reflective properties.
- 3.) **Arthropod remains** – Irregular shape, light in color.
- 4.) **Wood-** May appear to have ribbed texture, rectangular shape, Light in color.
- 5.) **Algae Filament-** Occasionally contains cell wall or compartmentalized internal structure, forked stem like exterior shape, may appear yellow/brown color.

Image Examples Plastics

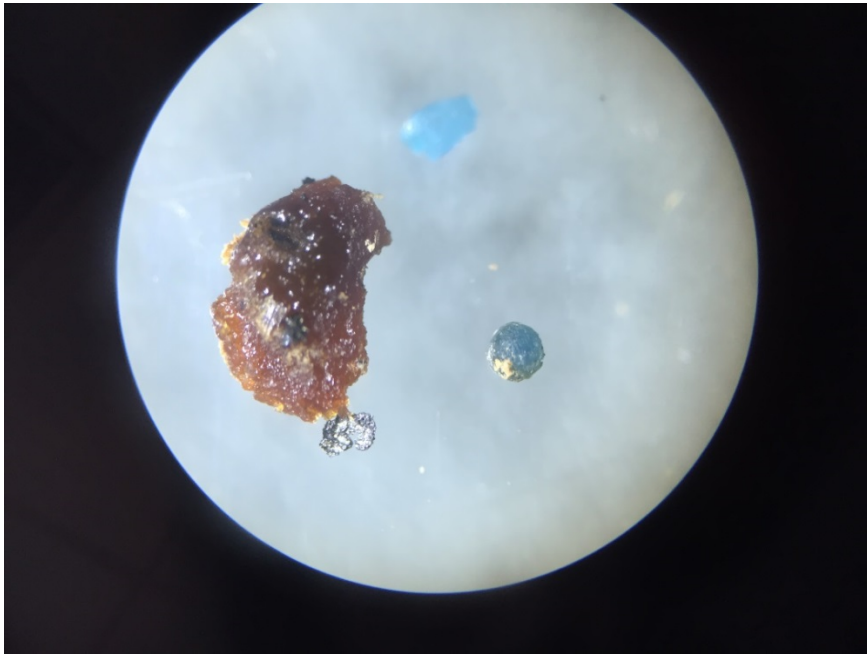


Fig. 1. Large fragment: waxy texture (left); Small fragment (center top); Pellet (right)

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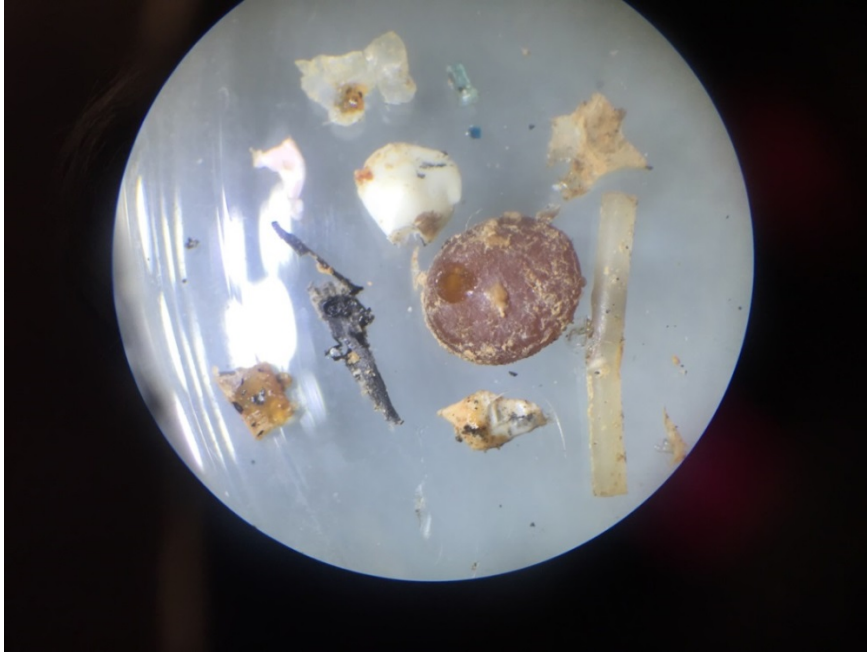


Fig. 2. Fragments, various sizes

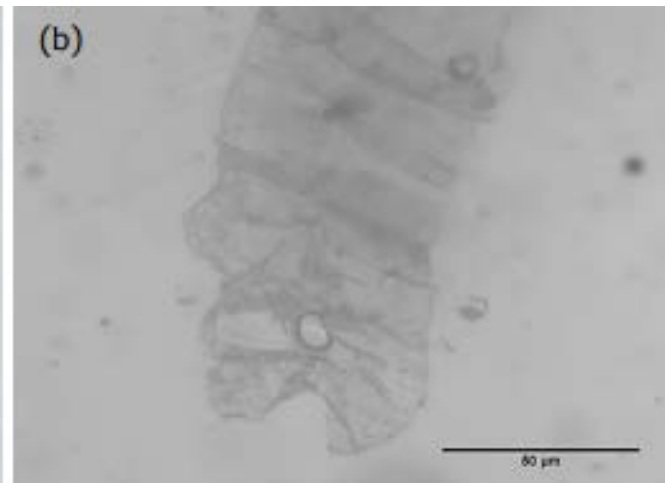
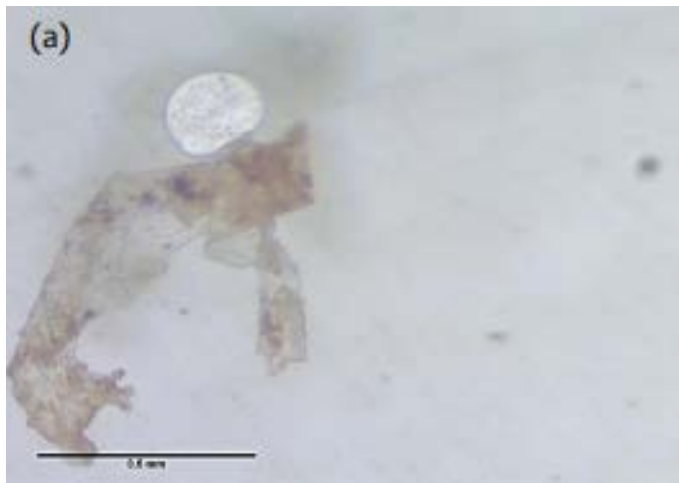


Fig. 3. Film: Sheet like, thin, can come in multiple colors.

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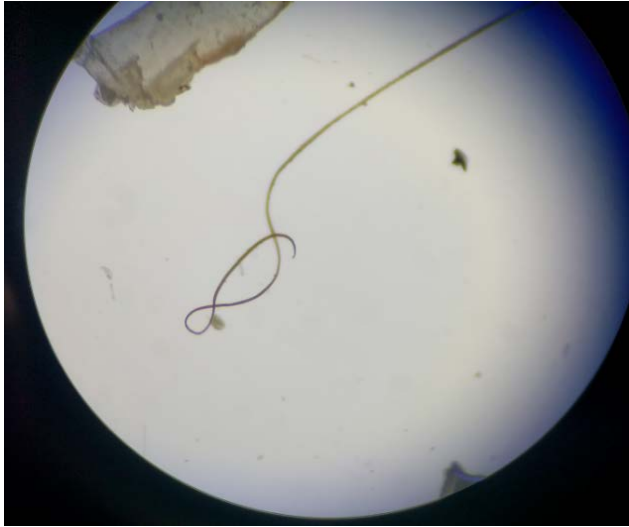


Fig.4. Line: Can appear to be translucent and can come in other shades. It commonly occurs in larger pieces than the microplastic fibers depicted above.



Fig. 4a. Microplastic fibers are approximately consistent in thickness and color throughout the particle.



Fig. 5. Foam piece: Soft, irregularly shaped



Fig. 6. Nurdle: Hard, cylindrical shape and occasionally appears to be opaque.

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Fig.7. Clusters or amalgamated pieces of microplastics: Many pieces of microplastics are sometimes held together by another microplastic piece. In this case each identifiable microplastic will be counted individually.

Image Examples Non-plastics

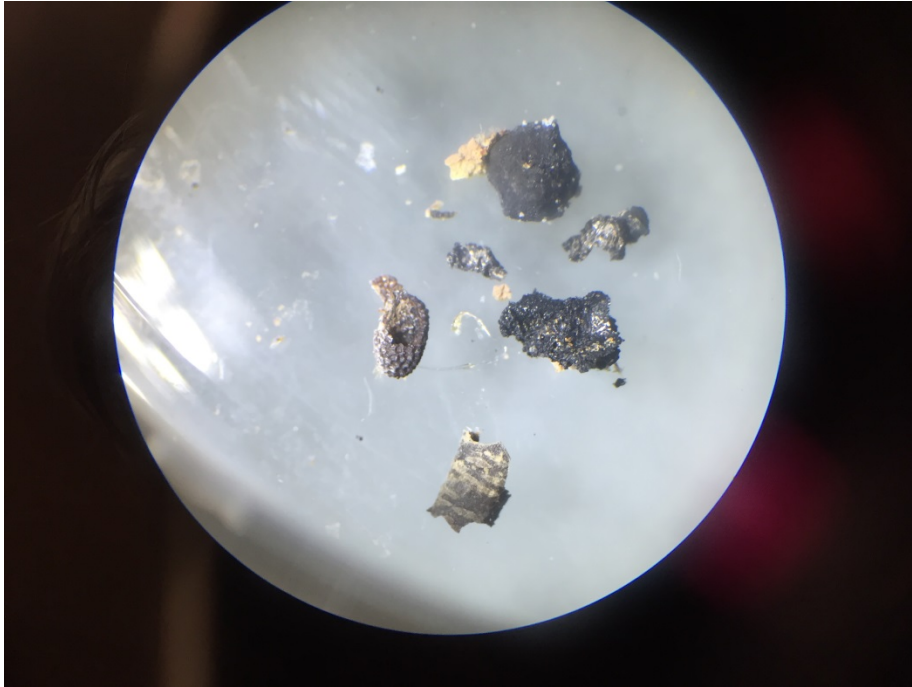


Fig. 1. Plant matter (left, bottom); **Mineral fragments** (top, right)

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Fig .2. Arthropod remains (left, center); wood (right)

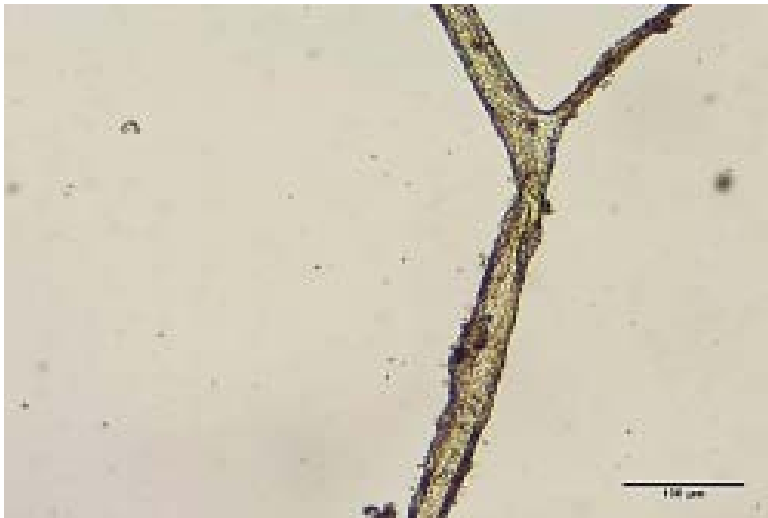


Fig .3. Algae filaments will be more uneven than fibers, show a forked structure, and sometimes have visible cells.



Material reactions when exposed to heat:

Rocks and sand will not respond to a heated needle, whereas plastic will. Plant matter may smoke.