

Testing bioplastic

Which formula for bioplastic is better?

Complete the following material properties tests on the bioplastic samples and record results in tables.

Opacity

Use an LED flashlight or the flashlight on a cell phone to determine if you can see light through the sample. 0=no light (opaque), 1=little light, 2=some light, 3=clear (transparent)

Table 1: Opacity of Bioplastic Samples

Sample Number	Trial 1 (Rating 0-3)	Trial 2 (Rating 0-3)	Trial 3 (Rating 0-3)	Average Rating (Rating 0-3)
1				
2				
3				

Room temperature (20°C) flexibility

Does the sample crack when you fold it after sitting at 20°C for 15min? 0=brittle (breaks in half), 1=semi-brittle (cracks), 2=semi flexible, 3=flexible (fully flexible)

Table 2: Room Temperature (20°C) Flexibility of Bioplastic Samples

Sample Number	Trial 1 (Rating 0-3)	Trial 2 (Rating 0-3)	Trial 3 (Rating 0-3)	Average Rating (Rating 0-3)
1				
2				
3				

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Cold temperature (-17°C) flexibility

Does the sample crack when you fold it after sitting at -17°C for 15min? 0=brittle (breaks in half), 1=semi-brittle (cracks), 2=semi flexible, 3=flexible (fully flexible)

Table 3: Cold Temperature (-17°C) Flexibility of Bioplastic Samples

Sample Number	Trial 1 (Rating 0-3)	Trial 2 (Rating 0-3)	Trial 3 (Rating 0-3)	Average Rating (Rating 0-3)
1				
2				
3				

Warm temperature (37°C) flexibility

Does the sample crack when you fold it after sitting at 37°C for 15min? 0=brittle (breaks in half), 1=semi-brittle (cracks), 2=semi flexible, 3=flexible (fully flexible)

Table 4: Warm Temperature (37°C) Flexibility of Bioplastic Samples

Sample Number	Trial 1 (Rating 0-3)	Trial 2 (Rating 0-3)	Trial 3 (Rating 0-3)	Average Rating (Rating 0-3)
1				
2				
3				

Additional tests

Measuring elasticity

Tensile strength test procedure