

The evaluation method of biodegradability in seawater as ISO has some issues such as poor reproducibility, length of test period. The number and activity of microorganisms in seawater vary depending on the season and sea area. We have developed accelerated evaluation method of biodegradability in seawater utilizing extracted microorganisms from marine sediments, furthermore the addition of nutrients accelerated the process.

Experimental condition was followed ISO 23977-1. As the inoculum, raw seawater "Control", seawater including extracted microorganisms "Extracted" and added nutrients(0.1 g/L KH₂PO₄, 0.05 g/L NH₄Cl) to "Extracted" at the start "Extracted+N,P", collected from Isshiki coast, Kanagawa Prefecture at Aug. 2021.

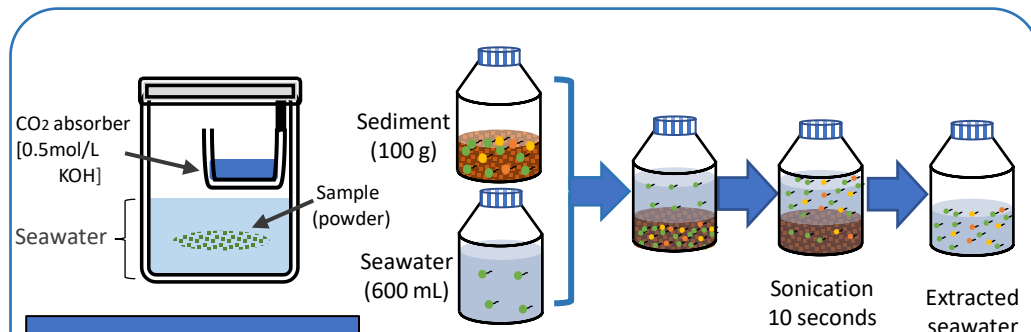


Fig.1 Test apparatus (followed ISO 23977-1)

Fig.2 Preparation of extracted seawater

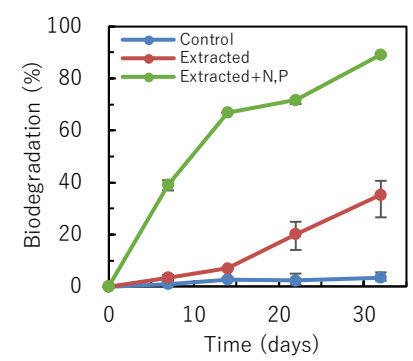


Fig.3 Biodegradation of reference material, Cellulose

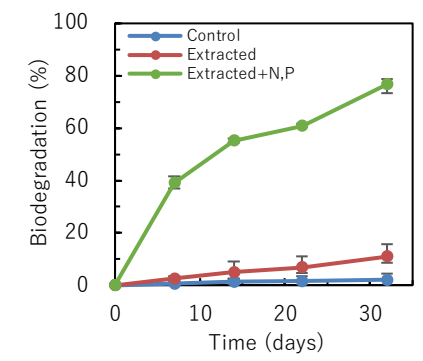


Fig.4 Biodegradation of Polycaprolactone(PCL)