Aerobic, Marine Biodegradation of Plastic Materials

ASTM D6691

Environment: Aerobic, Marine
Measurement Parameter: CO2 Evolution

Test Description

ASTM D6691 is a marine, aerobic biodegradability test.

Biodegradation is determined by measuring CO2 evolution using a suitable, analytical method. This test calculates the CO2 evolved compared to the theoretical amount of evolved CO2. The end result is the maximum biodegradation, determined by the plateau phase of the test.

Test Application

This test is common for plastics and polymers that contain at least 20% organic carbon.

It is important to note all possible end-of-life environments for your products when deciding on different test methods.

Test Recommendations

Solubility	Can be soluble or insoluble
Adsorption	Can be adsorbing
Volatility	Must be non-volatile
Inhibitory	No microorganism inhibition

Equivalent & Similar Tests

ISO 16221 (variant IV)

Test Specifications

Reference Material	Cellulose
Duration	Typically 10-90 days
Temperature	30C +/- 2C
pH	N/A
Inoculum	Natural seawater
Required Info	Total Organic Carbon (%C)
Measurement Parameter	CO2 Evolution

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