BIODEGRADATION IN PLASTICS MATERIAL TESTING FACILITY AS PER ASTM D 5338

State-of-the-art facility has been created in Rubber & Plastics Laboratory of Material Science Division (MSD) for the determination of Biodegradation in Plastics material as per ASTM D 5338 standard which is the Standard Test Method for Determining Aerobic Biodegradation of Plastic Material under Controlled Composting Conditions, Incorporating Thermophilic Temperatures which is one of its kind in India. Salient features of this method are:

- Determines degree and rate of aerobic biodegradation of plastic materials on exposure to a controlled-composting environment under laboratory conditions, at thermophilic temperatures.
- Yield reproducible and repeatable test results
- Samples are exposed to an inoculums derived from compost from MSW
- Aerobic composting takes place in an environment where temperature, aeration and humidity are closely monitored and controlled

Figure 1 : Testing facility for Biodegradation of plastic material

SUMMARY OF TEST METHOD

- Plastic material
- Inoculums of composted MSW
- Exposer of the sample to controlled aerobic composting condition
- Measuring CO_2 evolved as a function of time
- Assessing the degree of biodegradability
- The % Biodegradability is obtained by determining the % C in the sample that is converted to CO_2 during the test.