PART III

CHAPTER 5

Plastics Packaging

a. Assuming that you had a very large food package with a surface area of 0.1 square meters containing 1.5 kg of a dry powder with a moisture content of 5%, how long would it take for the moisture content to increase to 15% if the food were packaged in (i) PS and (ii) mPET?

b. Separating different plastic packaging materials prior to recycling is becoming increasingly important. If a mixture of different plastics were placed in a water tank, which plastics would float and which would sink?

c. Why is it important to keep biobased plastics out of the recycling stream for petroleum-based plastics?

d. It is virtually impossible to identify plastic packaging simply by looking at it. However, knowing the type of food which the package is protecting, it is possible to make an ‘educated guess’ about the nature of the plastic. Also if the plastic has been heat sealed then it is highly likely that the inner layer is LDPE or EVA. Examine three plastic packages and suggest what plastic polymers might have been used.

CHAPTER 6

Sealing Packages

a. Obtain at least 6 different glass and plastic food packages and classify the type of closure or seal on them.

b. On a scale of 1-10, rate the closures or seals in terms of tamper evidence and security.

c. On a scale of 1-5, rate the closures or seals in terms of functionality.