11.10 Determination of saponification number

Saponification number is the measure of chain length of fatty acids. It may be defined as mg of KOH required to saponify one gram of oil. The saponification number was estimated according to the method of AOAC (1995). A known quantity (5.1000 ± 0.1000 g) of filtered sunflower acid oil was mixed with 50 ml of 4 per cent alcoholic KOH by draining it from the burette for definite time. The contents were refluxed for one hour and then cooled. The cooled solution was titrated against 0.5 N HCl using phenolphthalein indicator. Simultaneously a blank was run adapting similar procedures. The saponification number was calculated by the formula:

$$\text{Saponification number (mg KOH/g)} = \frac{28.05\ (B - S)}{\text{Sample (g)}}$$

Where,

B = ml 0.5 N HCl required by blank

S = ml 0.5 N HCl required by sample

Reference: AOAC method 920.160, 16th edition 1995.