Aim: To determine the Iodine value of the sample (oil or fat).

Reference:

1. Advanced Practical Organic Chemistry by O. P. Agarwal; Published by Krishna Prakashan Media (P) Ltd; Page No. 276. Indian Pharmacopeia 2010, Part I; Page No. 86.
2. Practical Pharmacognosy by Saroja Joshi and Vidhu Aeri; Published by Frank Bros. & Co. (Publishers) Ltd.; First Edition: 2009: 296.
3. Handbook of Analysis and Quality Control for Fruit and Vegetable Products, second edition by S. Ranganna, Published by Tata McGraw-Hill Publishing Company Limited, New Delhi, Page No.- 218.

Requirement:

Apparatus: Volumetric flask, Pipette, Burette, beaker, glass road, etc.

Chemicals: Carbon tetrachloride, Iodine monochloride, 0.1 M sodium thiosulphate, Starch solution, etc.

Principle:

The iodine value of an oil or fat is the number of grams of iodine absorbed by 100 g of the substance (oil or fat) under described conditions. It can be determined by the following method.

Procedure:

(Iodine Monochloride (ICl) Method or Wijs Method):

An accurately weighed quantity (w g) of the sample (oil or fat) is taken in a 500 ml iodine flask. 10 ml of carbon tetrachloride (CCl_4) is added to dissolve it. 20 ml of iodine monochloride (ICl) solution is added. The mixed solution is allowed to stand in the dark at 15° – 25° C for 30 minutes, inserting the stopper. Then, 15 ml of potassium iodide solution is added. The flask and the stopper are ringed with 100 ml of water, shaken, and titrated with 0.1 M sodium thiosulphate solution using freshly prepared starch solution as an indicator, added towards the end of the titration. The number of ml required is noted as (a). The procedure is repeated without the sample, and the number of ml required is noted as (b). The iodine value is calculated from the observed data.

Observation:

	Samples No.	Initial Burette Reading (ml)	Final Burette Reading (ml)	Difference (ml)	Average (ml)
For Test	1				A=
	2				
For Blank	1				B=
	2				

Calculation:

Iodine value = 1.269 (b – a)/w

Here,

w = weight in grams of the sample.

…….

……..

……

Result:

The iodine value of the given sample of oil/fat is …….