Canola Oil

Low erucic acid rapeseed oil
LEAR oil

» Canola Oil is the refined fixed oil obtained from the seeds of *Brassica napus* or *Brassica campestris* (Fam. Cruciferae). A suitable antioxidant may be added.

Packaging and storage— Preserve in tight containers, and avoid contact with metals. Fill to the top or flush partially filled containers with nitrogen. No storage requirements specified.

Labeling— Label it to indicate the name and concentration of any added antioxidant.

Identification— It meets the requirements of the test for *Fatty acid composition*.

SPECIFIC GRAVITY ⟨841⟩: between 0.906 and 0.920.

ACID VALUE ⟨401⟩: not more than 6.0.

IODINE VALUE ⟨401⟩: between 110 and 126.

PEROXIDE VALUE ⟨401⟩: not more than 10.0.

SAPONIFICATION VALUE ⟨401⟩: between 178 and 193.

UNSAPONIFIABLE MATTER ⟨401⟩: not more than 1.5%.

Fatty acid composition— Canola Oil exhibits the following composition profile of fatty acids, as determined in the section *Fatty Acid Composition* under *Fats and Fixed Oils* ⟨401⟩:

Carbon-Chain Length	Number of Double Bonds	Percentage (%)
<14	—	<0.1
14	0	<0.2
16	0	<6.0
16	1	<1.0
18	0	<2.5
18	1	>50
18	2	<40
18	3	<14
20	0	<1.0
20	1	<2.0
22	0	<0.5
22[1]	1	≤2.0

IODINE VALUE

The Iodine Value represents the number of g of iodine absorbed, under the prescribed conditions, by 100 g of the substance. Unless otherwise specified in the individual monograph, determine the Iodine Value by *Method I*.

Method I (Hanus Method)

Procedure— Transfer an accurately weighed quantity of sample, as determined from the accompanying table, into a 250-mL iodine flask, dissolve it in 10 mL of chloroform, add 25.0 mL of iodobromide TS, insert the stopper in the vessel securely, and allow it to stand for 30 minutes protected from light, with occasional shaking. Then add, in the order named, 30 mL of *potassium iodide TS* and 100 mL of water, and titrate the liberated iodine with 0.1 N sodium thiosulfate VS, shaking thoroughly after each addition of thiosulfate. When the iodine color becomes quite pale, add 3 mL of starch TS, and continue the titration with 0.1 N sodium thiosulfate VS until the blue color is discharged. Perform a blank test at the same time with the same quantities of the same reagents and in the same manner (see *Residual Titrations* ⟨ 541 ⟩). Calculate the Iodine Value from the formula:

$$■[126.90(V_B - V_S)N] / (10W)■_{1S\ (USP32)}$$

in which ■126.90■$_{1S\ (USP32)}$ is the atomic weight of iodine; V_B and V_S are the volumes, in mL, of 0.1 N sodium thiosulfate VS consumed by the blank test and the actual test, respectively; N is the exact normality of the sodium thiosulfate VS; and W is the weight, in g, of the substance taken for the test. [NOTE—If more than half of the iodobromide TS is absorbed by the portion of the substance taken, repeat the determination, using a smaller portion of the substance under examination.]

Sample Weights

Iodine Value Expected	Weight in g, ±■0.1■$_{1S\ (USP32)}$
<5	■3.0■$_{1S\ (USP32)}$
5–20	■1.0■$_{1S\ (USP32)}$
21–50	■0.4■$_{1S\ (USP32)}$
51–100	■0.2■$_{1S\ (USP32)}$
101–150	■0.13■$_{1S\ (USP32)}$
151–200	■0.1■$_{1S\ (USP32)}$

PEROXIDE VALUE

The Peroxide Value is the number that expresses, in milliequivalents of active oxygen, the quantity of peroxide contained in 1000 g of the substance. [NOTE—This test must be performed promptly after sampling to avoid oxidation of the test specimen.]

Procedure— Unless otherwise directed, place about 5 g of the substance, accurately weighed, in a 250-mL conical flask fitted with a ground-glass stopper. Add 30 mL of a mixture of glacial acetic acid and chloroform (3:2), shake to dissolve, and add 0.5 mL of saturated potassium iodide solution. Shake for exactly 1 minute, and add 30 mL of water. Titrate with 0.01 N sodium thiosulfate VS, adding the titrant slowly with continuous shaking, until the yellow color is almost discharged. Add 5 mL of starch TS, and continue the titration, shaking vigorously, until the blue color is discharged. Perform a blank determination under the same conditions. [NOTE—The volume of titrant used in the blank determination must not exceed 0.1 mL.] ▪Calculate the Peroxide Value by the formula:

$$[1000\ (V_T - V_B)\ N] / W$$

in which V_T and V_B are the volumes, in mL, of 0.01 N sodium thiosulfate consumed in the actual test and in the blank test, respectively; N is the exact normality of the sodium thiosulfate solution; and W is the weight, in g, of the substance taken for the test. ▪ 1S (USP32)