TRIACETIN

Prepared at the 46th JECFA (1996), published in FNP 52 Add 4 (1996) superseding specifications prepared at the 19th JECFA (1975), published in NMRS 55B (1976) and in FNP 52 (1992). Metals and arsenic specifications revised at the 63rd JECFA (2004). An ADI 'not specified' was established at the 19th JECFA (1975)

SYNONYMS Glyceryl triacetate, INS No. 1518

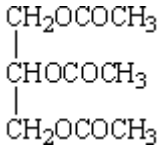
DEFINITION

Chemical names: Glyceryl triacetate

C.A.S. number: 102-76-1

Chemical formula: $C_9H_{14}O_6$

Structural formula:



Formula weight: 218.21

Assay: Not less than 98.5% on the anhydrous basis

DESCRIPTION Colourless, somewhat oily liquid having a slight, fatty odour

FUNCTIONAL USES Humectant, solvent

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4): Sparingly soluble in water, soluble in ethanol

Test for glycerol: Heat a few drops in a test tube with about 0.5 g of potassium bisulfate. Pungent vapours of acrolein are evolved

Test for acetate (Vol. 4): Passes test
To be performed on the solution resulting from the assay

PURITY

Water (Vol. 4): Not more than 1.0% (Karl Fischer Method)

Refractive index (Vol. 4): 1.429 - 1.431 at 25°

Specific gravity (Vol. 4): d (25, 25): 1.154 - 1.158

Distillation range (Vol. 4): 258 - 270°

Sulfated ash (Vol. 4)
Not more than 0.02%
Test 5 g of the sample (Method II)

Acidity
Accurately weigh a sample of 25 g, dilute with 50 ml of neutralized ethanol, and add 5 drops of phenolphthalein TS. Not more than 1 ml of 0.02N sodium hydroxide is required to produce a pink colour.

Unsaturated compounds
To 10 ml of the sample in a glass-stoppered tube add dropwise a 1 in 100 solution of bromine in carbon tetrachloride until a permanent yellow colour is produced. No turbidity or precipitate appears after 18 h in the dark.

Lead (Vol. 4)
Not more than 2 mg/kg
Determine using an atomic absorption technique appropriate to the specified level. The selection of sample size and method of sample preparation may be based on the principles of the method described in Volume 4, “Instrumental Methods.”

METHOD OF ASSAY
Transfer about 1 g of the sample, accurately weighed, into a suitable pressure bottle, add 25 ml of 1N potassium hydroxide and 15 ml of isopropanol, stopper the bottle, and wrap securely in a canvas bag. Heat in a water bath maintained at 98±2^{o} for 1 h, allowing the water in the bath to just cover the liquid in the bottle. Remove the bottle from the bath, cool in air to room temperature, then loosen the bag, uncap the bottle to release any pressure, and remove the bag. Add 6 to 8 drops of phenolphthalein TS, and titrate the excess alkali with 0.5N sulfuric acid just to the disappearance of the pink colour. Perform a blank determination. Each ml of 0.5N sulfuric acid is equivalent to 36.37 mg of $C_9H_{14}O_6$.