SODIUM PROPIONATE

Prepared at the 49th JECFA (1997), published in FNP 52 Add 5 (1997) superseding specifications prepared at the 44th JECFA (1995), published in FNP 52 Add 3 (1995). An ADI not limited' was established at the 17th JECFA (1973)

SYNONYMS Sodium propanoate, INS No. 281

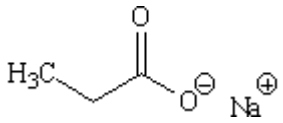
DEFINITION

Chemical name: Sodium propionate

C.A.S. number: 137-40-6

Chemical formula: $C_3H_5NaO_2$

Structural formula:



Formula weight: 96.06

Assay: Not less than 99.0% on the dried basis

DESCRIPTION White or colourless, hygroscopic crystals with not more than a faint characteristic odour

FUNCTIONAL USES Preservative, antimould and antirope agent

CHARACTERISTICS

IDENTIFICATION

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

Test for sodium (Vol. 4): Passes test

Test for propionate: Warm the sample with sulfuric acid. The propionic acid evolved may be recognized by its odour.

Test for alkali salt of organic acid: Ignite the sample at a relatively low temperature. The alkaline residue effervesces with acid.

PURITY

Loss on drying (Vol. 4): Not more than 4 % (105°, 2 h)

pH (Vol. 4): 7.5 - 10.5 (1 in 10 soln)

Water-insoluble matter: Not more than 0.1%
Weigh 5 g of the sample to the nearest mg, transfer into a 100-ml beaker and add 50 ml of water. Stir until all the sample appears to be completely

dissolved. Filter through a Gooch crucible, tared to an accuracy of ± 0.2 mg. Rinse the beaker with 20 ml of water. Dry the crucible with its contents in a 60º oven to constant weight. Cool in a desiccator, weigh, and calculate as percentage.

Iron (Vol. 4)

Not more than 50 mg/kg
Test 0.5 g of the sample as described in the Limit Test using 2.5 ml of Iron Standard Solution (25 µg Fe) in the control.

Lead (Vol. 4)

Not more than 5 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

Weigh, to the nearest mg, 3 g of the sample previously dried at 105º for 1 h, into a distillation flask and add 200 ml of 50% phosphoric acid. Boil for 2 h and collect the distillate. During distillation keep the volume in the flask at about 200 ml by adding water using a dropping funnel. Titrate the distillate with 1N sodium hydroxide using phenolphthalein TS as indicator. Each ml of 1N sodium hydroxide corresponds to 96.06 mg of $C_3H_5NaO_2$.