SODIUM CASEINATE

Prepared at the 13th JECFA (1970), published in NMRS 48B (1971) and in FNP 52 (1992). Metals and arsenic specifications revised at the 61st JECFA (2003). An ADI 'not limited' was established at the 14th JECFA (1970)

SYNONYMS Casein-sodium

DEFINITION An addition compound of sodium and casein. The article of commerce may be further specified by maximum limits of fat and lactose content, or other chemical or microbiological requirement (for example requirement concerning selected pathogenic organisms including Salmonella, Staphylococcus aureus, Clostridium spp. and mould spores).

C.A.S. number 9005-46-3

Assay Not less than 12.6% of nitrogen after drying

DESCRIPTION White or pale yellow granules or powder; practically odourless

FUNCTIONAL USES Emulsifier, stabilizer

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4) Disperses slowly with some turbidity in water; soluble in boiling water; insoluble in ethanol

Test for protein Emits on ignition a characteristic and disagreeable odour, and leaves a residue which is alkaline to litmus

Biuret reaction Dissolve 0.1 g in 10 ml of sodium hydroxide TS, add 1 drop of cupric sulfate TS, and shake. A blue precipitate is formed, and a violet colour is produced

Isoelectric point precipitation Dissolve 0.1 g in 10 ml of sodium hydroxide TS, and acidify slightly with acetic acid. A white precipitate is formed

Colour reaction To 0.1 g add 5 ml of water, shake, add 10 drops of mercuric nitrate TS and 1 drop of sodium nitrate TS, and heat in a water bath for 3 min. A reddish brown violet colour is produced on the surface of swelled sodium caseinate.

PURITY

Loss on drying (Vol. 4) Not more than 15% (100^{o}, 3h)

Solubility in water To 0.1 g dried (over sulfuric acid in a vacuum desiccator for 4 h) and finely powdered sample, add 30 ml of water, shake and allow to stand for 10 min. Add 2 ml of 0.1 N sodium hydroxide, warm at 40^{o}, and dissolve by shaking.

	Cool, add water to 100 ml. The solution is colourless, and shows no more turbidity than slightly turbid.
pH (Vol. 4)	6.5 - 7.5 (1 in 50 soln)
Sulfated ash (Vol. 4)	Not more than 6% on dry basis Test 1 g of the sample
Microbiological criteria (Vol. 4)	Standard plate count < MPN = 10^4/g *Enterobacteriaceae* or bacteria of the *coli-aerogenes* group < MPN = 10 /g Lancefield group D *streptococci* < MPN = 10^2/g (These criteria are tentative only. More information required).
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	Weigh about 0.15 g of the dried sample and proceed as directed under the *Nitrogen Determination (Kjeldahl Method)* (see Volume 4). Each ml of 0.1 N sulfuric acid is equivalent to 1.401 mg of nitrogen.