

SODIUM PERCARBONATE

Prepared at the 35th JECFA (1989), published in FNP 49 (1990) and in FNP 52 (1992). Metals and arsenic specifications revised at the 63rd JECFA (2004). Not hazardous as component of Lactoperoxidase milk preservation system 35th JECFA (1989)

SYNONYMS Sodium carbonate peroxyhydrate, sodium carbonate peroxide.

DEFINITION

Chemical names Sodium percarbonate

C.A.S. number 15630-89-4

Chemical formula $2\text{Na}_2\text{CO}_3 \cdot 3\text{H}_2\text{O}_2$

Formula weight 314.0

Assay Not less than 13% available oxygen (equivalent to 85% purity)

DESCRIPTION Fine, dry, white crystalline powder
Caution: powerful oxidant, avoid contact with eyes and skin.

FUNCTIONAL USES Antimicrobial synergist (Component of lactoperoxidase/thiocyanate/peroxide antimicrobial raw milk preservation system)

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4) Freely soluble in water; commercial product does not give a clear solution

pH (Vol. 4) Approximately 10.5 (1% solution)

Test for sodium (Vol. 4) Passes test

PURITY

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

Using a measuring cylinder, carefully add 100 ml of sulphuric acid solution (3.6 N) to a 600-ml beaker. Weigh accurately about 4 g of sample on to a tared watchglass. Let the weight of sample be W g. Place the watchglass in

the beaker, cover the beaker with a clockglass and swirl to dissolve the sample. Transfer the solution to a 500 ml volumetric flask. Rinse the clockglass and the wall of the beaker with demineralised water and add all the washings to the volumetric flask. Dilute to volume with demineralised water and mix well. Immediately titrate a portion of this solution as follows: Add 100 ml of sulphuric acid solution (3.6 N) to a 600 ml conical flask and add potassium permanganate solution (0.1 N) dropwise to the appearance of a faint permanent pink colour. Using a safety pipette, add 25.0 ml of sample solution and mix well. Titrate with potassium permanganate solution (0.1 N) to the reappearance of the faint permanent pink colour. Let the titration obtained be A ml.

Calculate the available oxygen content of the sample (as O₂) by the formula:

$$\frac{A \times N \times 8 \times 500 \times 100}{10 \times 1000 \times 25W} = \frac{A \times N \times 1.6}{W}$$

where

N = the normality of the potassium permanganate solution