

SODIUM BENZOATE (E 211)

SODIUM BENZOATE (E 211) - FOOD GRADE

Why do we need to use sodium benzoate?

The spoilage of food and beverages is easily caused by the reaction of enzymes. Enzymes act as catalysts and cause chemical changes in food. Enzymes in food caused by bacteria (Bacteria) Fungi (Molds) and yeast (Yeast) occurs when food is exposed to air or during cooking. Eliminating spoilage enzymes in the diet can be achieved by the following methods

- The sterilized by heating, irradiation.
- Use a cooler to reduce or stop the growth of microorganisms. (Microorganisms)
- Drying to reduce or stop the chemical reaction.
- The use of preserving chemicals to inhibit the growth of microorganisms.

Sodium benzoate is a chemical substance used in food additives to preserve food. Sodium benzoate can be used at very low concentrations (up to 0.1%) to inhibit the reaction of microorganisms in food. Sodium Benzoate has been used as a preservative for over 100 years. Sodium benzoate is a chemical that has been certified by US FDA as GRAS = **G**enerally **R**ecognised **A**s **S**afe additive for foods. The US FDA classifies Sodium Benzoate as follows.

21 CFR §184.1733 - Used as an antimicrobial agent.

21 CFR §170.3 (o) (2) - used as a flavouring agent.

21 CFR §170.3 (o) (12) - used as an adjuvant in food.

Conditions for use of Sodium Benzoate:

- Sodium benzoate can be used for foods and beverages with a pH below 4.5.
- Sodium Benzoate is completely soluble in water.
- It is not recommended to use Sodium Benzoate as a preservative in conditions where the pH is greater than 4.5 because Sodium Benzoate will react with yeast, mould and bacteria.
- Sodium Benzoate should be used early in food processing thereby preventing microbes from creating more enzymes and hence increase the shelf life of food.

Sodium Benzoate, NF / FCC is commonly used in

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Alcoholic Beverages	Caramel
Carbonated Beverages	Chewing Gum
Fermented Products	Fruit Juice
Jam	Jellies
Pastries	Sauce
Syrup	

Sodium Benzoate is used in some common foods in the following concentrations

Name of Product	Concentration used (ppm)	Name of Product	Concentration used (ppm)
Juice	0.91	caramel	0.01
chewing gum	0.31	Carbonated beverage	0.6
Alcoholic beverages	0.04		

TECHNICAL DATASHEET

Product Name	Sodium benzoate
Grade Name	NaBz 211
CAS No.	532-32-1
Einecs No.	208-534-8
HS Code	2916 3100
Molecular formula	C ₇ H ₅ NaO ₂
Molecular weight	144.1 g / mol
Synonyms	Benzoic acid sodium salt

STANDARD SPECIFICATIONS:

TEST PARAMETERS	SPECIFICATIONS
Appearance	White fine powder / Granules / Columnar
Solubility	560 g / l in water
NATIONAL FORMULARY / FOOD CHEMICALS CODEX GRADE	
Identification (NF / FCC)	Passes NF & FCC Tests (Tests A, B, and C)
Assay (NF / FCC)calculated on the anhydrous basis	99.0% - 101.0% of C ₇ H ₅ NaO ₂ ,
Alkalinity (NF / FCC)	Not more than 0.04%, as NaOH
Heavy Metals (NF)	Not more than 10 ppm (as Pb)
Arsenic	Not more than 3 ppm

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Lead (FCC)	Not more than 2 ppm
Water (NF / FCC)	Not more than 1.5% (wt)
Residual Solvent	Passes NF Limit Tests

EEC E-211 GRADE	
Identification	Passes tests
Assay	Not less than 99% on the anhydrous basis
Loss on Drying	Not more than 1.5% @ 105 ° C
Alkalinity	Not more than 0.25 ml of 0.1 N HCl per 1 g of sample
Acidity	Not more than 0.25 ml of 0.1 N NaOH per 1 g of sample
Chlorinated Organic Compounds	Not more than 0.06% (as chlorine)
Readily Oxidizable Substances	Passes limit test
Polycyclic acids	Passes test
Arsenic	Not more than 3 ppm
Lead	Not more than 2 ppm
Mercury	Not more than 1 ppm
Packaging	1/5/10/25 Kg Bag
Storage Condition	Slightly hygroscopic, tight-closed package
Shelf Life	24 months



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