

Sales Specification Page 1 of 3

Kalama® Sodium Benzoate NF/FCC

CAS REGISTRATION NUMBER: 532-32-1

EINECS REGISTRATION NUMBER: 208-534-8

SALES SPECIFICATIONS - NATIONAL FORMULARY / FOOD CHEMICALS CODEX GRADE:

IDENTIFICATION (NF/FCC) Passes NF & FCC Tests (Tests A, B, and C) ASSAY (NF/FCC) 99.0% - 101.0% of C₇H₅NaO₂, calculated on the

anhydrous basis

ALKALINITY (NF/FCC) Not more than 0.04%, as NaOH HEAVY METALS (NF) Not more than 10 mg / kg (as Pb)

ARSENIC Not more than 3 mg / kg
LEAD (FCC) Not more than 2 mg / kg
WATER (NF/FCC) Not more than 1.5% (wt)
RESIDUAL SOLVENTS Passes NF Limit Tests

SALES SPECIFICATIONS - EUROPEAN PHARMACOPEIA GRADE:

IDENTIFICATION Responds to EP tests for Sodium and Benzoate

ASSAY (by EP Method) NLT 99.0 and NMT 100.5% of C₇H₅NaO₂, calculated with

reference to the dried substance

ALKALINITY Not more than 0.2 mL of 0.1 M HCl per 20 mL of a 5%

(w/v) solution. (0.08% as NaOH)

ACIDITY Not more than 0.2 mL of 0.1 M NaOH per 20 mL of a 5%

(w/v) solution. (0.244% as Benzoic)

CLARITY OF SOLUTION 10% (w/v) solution is clear

COLOUR OF SOLUTION Not more intensely coloured than reference solution.

HEAVY METALS (as Pb) Not more than 10 mg / kg. HALOGENATED COMPOUNDS

Ionised chlorine Passes EP Test (limit is 200 ppm)
Total chlorine Passes EP Test (limit is 300 ppm)

LOSS ON DRYING When dried to a constant weight @ 100 to 105° C, not

more than 2.0% of its weight is lost.

RESIDUAL SOLVENTS Passes Limit Tests

<u>SALES SPECIFICATIONS – EEC E-211 GRADE:</u>

IDENTIFICATION Passes Tests

ASSAY Not less than 99% on the anhydrous basis

LOSS ON DRYING Not more than 1.5% @105° C

REV 18 File: 75705045



Sales Specification Page 2 of 3

ALKALINITY ACIDITY Not more than 0.25 mL of 0.1 N HCl per 1 g of sample Not more than 0.25 mL of 0.1 N NaOH per 1 g of sample

CHLORINATED ORGANIC COMPOUNDS READILY OXIDIZABLE SUBSTANCES

Not more than 0.06% (as chlorine)

POLYCYCLIC ACIDS

Passes Limit Test Passes Test

ARSENIC LEAD MERCURY Not more than 3 mg/kg Not more than 2 mg/kg Not more than 1 mg/kg

TYPICAL PARTICLE SIZE DISTRIBUTION:

POWDER FORM DENSE FORM EDF[™] FORM 20 to 50% through an 80 mesh screen 3 to 6% through an 80 mesh screen ~1% through a 60 mesh screen

PACKAGING:

Sodium Benzoate from Emerald Kalama Chemical, LLC is available in the following standard packages:

DENSE form is packaged as follows:

- A) In poly-ethylene bags, each containing 25 Kg of product. The pallet and contents are "stretch-wrapped" with poly-ethylene film. Typically, 1,000 Kg (8 rows high by 5 bags per row) are placed upon a 4 -way entry type non-returnable pallet. This "stretch-wrapped" pallet has dimensions of ~55" high by 40" wide by 48" deep.
- B) In poly-lined woven polypropylene flexible intermediate bulk containers (FIBC); each containing 1000 Kg of product. Each FIBC is placed upon a non-returnable pallet and the pallet and FIBC are then "stretch-wrapped" with poly-ethylene film.

POWDER form is packaged as follows:

A) In poly-ethylene bags, each containing 25 Kg of product. Typically, 1,000 Kg are placed upon a non-returnable pallet (4 -way entry type). The pallet and bags are then "stretch-wrapped" with poly-ethylene film.

EDF is packaged as follows:

- A) In poly-lined paper bags, each containing 25 Kg of product. Typically, 1,000 Kg are placed upon a non-returnable pallet (4 way entry type). The pallet and bags are then "stretchwrapped" with poly-ethylene film.
- B) In poly-lined woven polypropylene flexible intermediate bulk containers (FIBC), each containing 500 Kg of product. Each FIBC is placed upon a non-returnable pallet and the pallet and FIBC are then "stretch-wrapped" with poly-ethylene film.



Sales Specification Page 3 of 3

Emerald Kalama Chemical is a world-scale producer of a variety of toluene oxidation products, with production facilities in the US and Europe. Products include benzoic acid, various benzoate and dibenzoate ester, alcohol and aldehyde derivates for food preservatives, flavor and fragrance ingredients, plasticizers and industrial applications. Emerald Kalama Chemical is a division of Emerald Performance Materials, a manufacturer of additives and polymers which make your products last longer, look, taste, smell, or perform better. Emerald is headquartered in Vancouver, WA. The company has two business units, six operations and approximately 700 employees. For more information, please contact us.

The information contained herein is believed to be reliable; however it is based upon laboratory work with small scale equipment and does not necessarily indicate end-product performance. Because of variations in methods, conditions and equipment used commercially in processing these materials, Emerald makes no representations, warranties or guarantees, express or implied, as to the suitability of the products for particular applications, including those disclosed, or the results to be obtained. Full-scale testing and end-product performance are the responsibility of the user. Emerald Performance Materials shall not be liable for and the customer assumes all risk and liability for use and handling of any materials beyond Emerald's direct control. Nothing contained herein is to be considered as permission, recommendation nor as inducement to practice any patented invention without permission of the patent owner.

Emerald Kalama Chemical, LLC

REV 18 File: 75705045