



Product Information Sheet

PuroxB Food/Pharma *ultra pure grade benzoic acid*

Proud to present.

Emerald produces the purest grade of benzoic acid available on the market. Purox B Food/Pharma is an ultra pure benzoic acid developed by Emerald Kalama Chemical to meet the highest quality standards of our customers.

Use of an innovative purification technology at our facility in Rotterdam results in a high quality product with a guaranteed benzoic acid content of at least 99.98 %. The Purox B Food/Pharma grade meets the Ph.Eur, USP/NF, FCC and JP requirements. It stands out because of its low impurity content, which has earned it a classification as user friendly. Purox B Food/Pharma has a low odor level and reduced caking properties and gives an improved color of the end product.

Offering new opportunities.

In the synthesis of high-purity chemical intermediates for the food, cosmetic and pharmaceutical industries only the purest grades of benzoic acid can be used. Purox B Food/Pharma meets all the requirements for these applications. Use of this new grade eliminates the need to apply complex and costly purification techniques to remove impurities introduced by less pure starting materials.

Benzoic acid and its sodium and potassium salts have been extensively used for many years as a preservative to control microbial growth, for instance of yeast, bacteria, mould and fungi, in various applications. The products are FDA-approved

and GRAS classified. The salts are more soluble in water than benzoic acid and are preferred as preservatives for use in water based systems. In solution the benzoate is in a dynamic, pH dependent equilibrium with the undissociated acid molecule. An acid pH favors the undissociated uncharged state, a situation in which benzoic acid exerts much stronger anti-microbial action.

Most of the commercial grades of benzoic acid offered by other manufacturers are not pure enough to be used directly in food or pharmaceutical products. Purox B Food/Pharma offers the opportunity to replace the benzoate salts selectively by ultra pure benzoic acid in applications where solubility and speed of dissolution are not important.

The best choice for your application.

The use of Purox B Food/Pharma will result in:

- an **efficiency gain** of at least 20% over benzoate salts (more active component per weight unit)
- **cost savings** because of a reduction in acid consumption for pH regulation
- the possibility to **reduce the total amount of sodium in the finished product**, which is interesting in particular for the food industry

In toothpastes and mouthwashes ultra pure benzoic acid has a preservative effect and may help to prevent dental caries and control the growth of plaque bacteria, so that it acts as a breath freshener.

Since benzoic acid is very active in controlling yeast growth, the new Food/Pharma grade is very effective in controlling microbial growth in non-yeast-raised bakery products, like flour tortillas, pancakes and pizzas. The improved taste and odor in combination with cost savings means that the new Purox B Food/Pharma can replace propionics, sorbates and fumarics.

Food manufacturers increasingly use hot pack processing as an alternative to canning. One of the most important aspects of this process is that the pH of the product is to be kept below 4.5.

While many foods are naturally high in acid (especially tomatoes and fruits), there are also cases in which help is needed to reduce the pH to an acceptable level. Ultra pure benzoic acid, if desired in combination with other acids, is an effective preservative in the hot packing process as well as in the classical canning process.

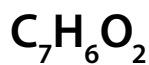
Benzoic acid is used as a pH adjuster and/or preservative in cosmetic and toiletry formulations. Since most of these personal care products contain natural components (fats, oils, etc), they are very sensitive to microbial degradation. In 1998 benzoic acid was used as an ingredient in more than 200 cosmetic formulations. The most important of these are bath preparations, lipsticks, skin cleaners and skin conditioners.

Fish and fish products are very sensitive to microbial contamination and need a very active preservative. Purox B Food/Pharma grade is used as an active ingredient in preservation formulations for shrimps.



PuroxB Food/Pharma

ultrapure grade benzoic acid



CAS No. 65-85-0

EINECS No. 200-618-2



PRODUCT SPECIFICATION

Characteristic	Spec. Range	Unit
Assay*	99.98 min.	% (m/m)
Color (molten product)	25 max.	APHA
Benzyl benzoate	30 max.	mg/kg

*Assay = 100% - total organic impurities

ADDITIONAL PRODUCT INFORMATION

Characteristic	Spec. Range	Unit
Water (Karl Fisher)	0.1 max.	% (m/m)
Phthalic acid	50 max.	mg/kg
Heavy metals	10 max.	mg/kg
Iron	1 max.	mg/kg
Phenol	2 max.	mg/kg
Chloride, as Cl ⁻	10 max.	mg/kg
Halogenated compounds, as Cl ⁻	10 max.	mg/kg
Total chlorine, as Cl ⁻	10 max.	mg/kg
Sulphated ash	0.01 max.	% (m/m)
Oxidizable substances	0.2 max.	mL 0.02 mol KMnO ₄ /g
Residue on ignition	0.05 max.	% (m/m)
Carbonizable substances	Q max.	Matching fluid
Turbidity (of a 20% (m/m) solution in ethyl alcohol)	4.0 max.	NTU
Solidification point	121.5 – 122.5 °C	-

Purox B Food/Pharma is shaped as white flakes with a slightly characteristic odor
The material meets the requirements of FCC, USP/NF, Ph.Eur, JP and E210 and is certified Kosher and Kosher for Passover  and certified  Halal.
SHELF LIFE: 2 YEARS



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Serving our customers globally from our facilities in Europe and the US.

In addition to Purox B food/pharma (USP grade), we also supply Purox B (standard grade) for direct use in food and pharmaceutical applications. Our facility in Kalama, Washington USA supplies technical and FCC grade benzoic acid, as well as other products. Specifications and additional information on this grade are given in separate Product Information Sheets.

Packaged to meet your process needs.

Purox B Food/Pharma is available in a choice of packaging formats to meet specific process requirements. The product is packaged in robust, tamper-proof 25 kg form-fill-sealed polyethylene bags filled on a brand-new packaging line. Also available in bulk quantities of 500 kg in high-quality big bags.

For inquiries on Purox B: Contact purox.info@emeraldmaterials.com

About Emerald.

Emerald Kalama Chemical is 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 Cuyahoga Falls, Ohio. The company has 4 business units, eight operations and approximately 700 employees. The Emerald Kalama Chemical Division is a world-scale producer of a variety of toluene oxidation products, with production facilities in the US and Europe. Products include benzoic acid, and various benzoate and dibenzoate ester, alcohol and aldehyde derivatives for food preservatives, flavor and fragrance ingredients, plasticizers and industrial applications. For more about Emerald, visit www.emeraldmaterials.com.