

Avantor, Inc.
100 Matsonford Rd., Suite 200
Radnor, PA 19087 USA
www.avantorsciences.com

Boric Acid

Product Regulatory Data Sheet

Section 1 – Product Information

Products Covered

<u>Brand</u>	<u>Product Code</u>	<u>Product Description</u>	<u>MOC* code</u>
J.T.Baker®	0091	Boric Acid, Granular N.F.	R
J.T.Baker®	0092	Boric Acid, Granular, N.F. Multi-Compndial	R
J.T.Baker®	0096	Boric Acid, Granular Multi-Compndial	R
J.T.Baker®	1394	Boric Acid, Granular N.F.	R
Macron Fine Chemicals™	7779	Boric Acid, Granular NF - GenAR®	R

*MOC = Management of Change

Section 2 – Manufacturing, Packaging and Release Site Information

The products in Section 1 are manufactured according to current Good Manufacturing Practices (cGMPs) as set forth by International Pharmaceutical Excipients Council (IPEC) guidelines.

A number of the cGMP produced products that are sold by Avantor may not be originally manufactured at our sites. However, we perform the analytical and stability testing for these products and repackage the products where applicable. With ISO and cGMP procedures in place at our facilities, we can ensure, and take complete responsibility for, the traceability and quality of the finished, packaged product that we offer.

For J.T.Baker® and Macron Fine Chemicals™ brand products, the Original Manufacturer and address will be referenced on the Certificate of Analysis as an alpha or alpha-numeric **manufacturer code** rather than listing the full name and address. This practice is compliant with both ICH Q7 Good Manufacturing Guidance for Active Pharmaceutical Ingredients (APIs) and IPEC guidelines and it meets cGMP requirements. For instructions to decipher the manufacturer reference code please consult the Avantor website. Instructions can be found by visiting the Ask Avantor link under the Resources tab or by directly linking to www.askavantor.com Keyword: Manufacturer Code. Additional information on Avantor suppliers may be available under NDA. Please reach out to the support contact in Section 7 for additional supplier information inquiries.

Section 3 – Physical/Chemical Information

CAS #: 10043-35-3

Manufacturing Process: Synthesis , Recrystallization. Additional manufacturing process information may be disclosed under NDA upon request from the support contact in Section 7.

Raw Material Origin: Chemical

Section 4 – Regulatory Information

DMF: Avantor may hold Master File(s) for specified product codes, dependent on the country of interest. Inquire with the support contact in Section 7 for additional details.

BSE/TSE Status: The subject materials are manufactured from raw materials that contain NO animal parts, products, and/or by-products nor do they come in contact with animal parts, products, and/or by-products.

Allergen/Hypersensitivities Information: To the best of our knowledge, the allergens listed in the [US FDA](#), [EU Directive 2003/89/EC](#), and [TG0-91/92](#) are not known additives, by products, intermediate parts, or otherwise intentionally added during the manufacturing processes of the product.

According to the Original Manufacturer, cereals containing gluten (i.e. wheat, rye, oats, barley, spelt, kamut or their hybridized strains), malt, triticale, gluten, other grains, corn, soy, soybeans, eggs, yeast, canola, milk, dairy products, fish, crustacean shellfish, seafood products, tree nuts, peanuts, nut products (i.e. Almond (*Amygdalus communis* L.), Hazelnut (*Corylus avellana*), Walnut (*Juglans regia*), Cashew (*Anacardium occidentale*), Pecan nut (*Carya illiniesis* (Wangenh.) K. Koch), Brazil nut (*Bertholletia excelsa*), Pistachio nut (*Pistacia vera*), Macadamia nut and Queensland nut (*Macadamia ternifolia*)), seed products (sesame seeds and products thereof), natural grape products, natural flavors, artificial flavors, celery, mustard, lactose, sulfites, elemental sulfur, preservatives, lupine and products thereof, MSG, disodium guanylate/inosinate, artificial sweeteners, phenylalanine, additives, colorants, dyes, or natural rubber (latex). are not known additives, by-products, intermediate parts, or otherwise intentionally added during the manufacturing processes of the product.

Avantor does not produce any of the following types of products: antibiotics, aflatoxins, penicillin, semi-synthetic penicillins, cephalosporins, other beta-lactams, cytotoxics, steroids, medicated feeds, or pesticides.

This product is manufactured using cGMP guidelines which provide controls that allow no potential for cross contamination of any allergens or other contaminants. However, this product is not tested for the presence of these or any other allergens by Avantor or the Original Manufacturer, therefore, we do not have confirmation for the absence of any allergens in the product.

GMO Information: The subject materials, including any raw materials and processing aids, are NOT subject to genetic modification.

Residual Solvents/Organic Volatile Impurities (OVI) Information: The subject materials (all lots) comply with the requirements of the ICH Q3C Residual Solvents Guideline and USP <467> Residual Solvents. No Class 1, 2, 3 or other solvents are used or produced in the manufacturing or purification of the product.

Elemental Impurities: Please see attached summary for Elemental Impurity information for listed products.

Kosher Status: For J.T.Baker® and Macron Fine Chemicals™ brand products, kosher certification is aligned to the Avantor packaging site as indicated on the product Certificate of Analysis. Please refer to the site-specific kosher certificate available on AskAvantor for our most up to date listing of kosher products at (www.askavantor.com Keyword: kosher).

Halal Status: For J.T.Baker® and Macron Fine Chemicals™ brand products, halal certification is aligned to the Avantor packaging site as indicated on the product Certificate of Analysis. Please refer to the site-specific halal certificate available on AskAvantor for our most up to date listing of halal products at (www.askavantor.com Keyword: halal).

GRAS Status: The United States Food and Drug Administration (FDA) have acknowledged that some chemicals may be considered Substances Generally Recognized as Safe (GRAS) in foods when used in accordance with the requirements and limitations per specific 21 CFR regnums. For the latest information on whether or not an Avantor product is considered GRAS, please visit the [Electronic Code of Federal Regulations](#).

Section 5 – Miscellaneous Product Information

Certificate of Analysis Date Format: The Manufactured Date and Expiration/Retest Date on the Certificate of Analysis are reported as YYYY-MM-DD. For example, the Manufactured Date for October 1, 2021 would be reported as 2021-10-01.

Lot Numbering System and Batch Description: For J.T.Baker® and Macron Fine Chemicals™ brand products, please refer to Ask Avantor for information concerning our lot/batch numbering system. (www.askavantor.com Keyword: Lot Number).

Batch Definition: A "batch" is a homogeneous unit of production; each batch of is from one single batch of the source supplier.

Shelf-Life Information: If a product has an assigned expiration or retest period, the date will appear on the Certificate of Analysis. For products that do not have assigned dates, please reach out to the support contact in Section 7 for additional stability inquiries.

Management of Change: For J.T.Baker® and Macron Fine Chemicals™ brand products, please refer to Management of Change link under the Working with Avantor tab on the Avantor website.

Country of Origin Statement: Country of Origin is indicated on the product Certificate of Analysis. If you require further documentation, please reach out to the Trade Compliance support contact in Section 7.

Storage Requirements: Please refer to the product's Certificate of Analysis or Product Specifications. In the absence of specific storage conditions listed on its specification sheet or Certificate of Analysis, products are to be stored in ambient conditions of temperature and humidity. We do not formally tie any specific temperature or humidity range with the "ambient" storage designation, but an example of a common temperature interpretation is 15-30°C. Our products are also packaged to protect from the normal variation in humidity during storage and shipment. Further handling and storage information may be found in Section 7 of the product's SDS sheet.

Certificates of Analysis: For J.T.Baker® and Macron Fine Chemicals™ brand products, please see the current list of product specifications using the Certificate/SDS Search tool on our website [here](#).

Safety Data Sheet: For J.T.Baker® and Macron Fine Chemicals™ brand products, please see the current product safety information using the Certificate/SDS Search tool on our website [here](#).

Avantor Site Certifications: Please see the current Avantor site certifications on our website [here](#).

Site Quality Overview: Avantor maintains a self-assessment modeled after IPEC guidelines which describes site and quality system information to support the manufacturing activities of this product. Please reach out to the support contact in Section 7 for a current copy of the Site Quality Overview.

Packaging Information: Please reach out to the support contact in Section 7 for current packaging specifications.

Section 6 – Revision History

Rev. 0; Oct. 1, 2007 – IPEC EIP format

Rev. 1; Oct. 3, 2008 – Section 4: updated residual solvents information

Rev. 2; March 18, 2010– Entire document: new letterhead and changed all references of "Solv IT Center" to "AskMBI."; Section 7: updated TS manager info. GRAS statement added.

Rev. 3; July 25, 2011 –Entire document: new letterhead, and changed all references of "AskMBI" to "AskAvantor." Updated website links for new website; Section 1: Mallinckrodt brand name updated to Macron; added MOC codes; Section 2: added GMP statement; Section 4: expanded Allergens list; added Residual Metallic Catalysts; Section 7: updated contact information; minor formatting. (PH/MCH)

Rev. 4; Dec. 11, 2014 – HDQ address change. Section 1: added code 7905; Section 4: added add'l allergens as listed in EU Directive 2003/89/EC; updated Residual Metallic Catalysts statement; separated Kosher/Halal status and added certification statement Section 5: added Management of Change information; Added COA Date Format statement; Section 7: removed contact list table and added CS/TS contact information. (MCH).

Rev. 5; November 02, 2017 - Update document to new format. Section 4: added Elemental Impurity Statement (PT).

Rev. 6; January 13, 2020 - Entire document: New format and letterhead (company name & headquarters address). Updated email and website address from avantorinc.com to avantorsciences.com. Added website link for AskAvantor; Section 1: Typographical error for code 0096 product name corrected; Section 4: GRAS Status statement changed from "not assessed" to applicable regnum per the FDA website; Section 5: Certificate of Analysis Date Format statement updated. (KH)

Rev. 7; April 14, 2023 – Entire document in updated format 7905 removed per DELIST-00260 (SS)

This electronic document is valid without a signature.

Section 7 – Contact Information

Technical Service

Phone: 1-855-282-6867 and 1-610-573-2600 (outside U.S.), select option 5

Email: Technical.Service@avantorsciences.com

Regulatory Support

Email: regulatory.support@avantorsciences.com

Trade Compliance

Email: Trade.Compliance@avantorsciences.com

While the above information is provided in good faith and believed to be accurate as of the date provided, Avantor makes no representations or warranties as to the accuracy or completeness of such information. All Avantor products are subject to Avantor's terms and conditions of sale including the limitations of liability contained therein and any contrary terms and conditions are expressly rejected. As Avantor has no control over purchasers' uses of its products, Avantor expressly disclaims all liability with respect to same.

The most current revision of this document is maintained on our website. Reviews and revisions are performed as warranted due to product changes or as part of the supplier audit cycle and managed under a validated document control system.

100 Matsonford Rd., Suite 200
Radnor, PA 19087
1 855 282 6867
www.avantorsciences.com

Material Name: Boric Acid **Product codes:** : 0091, 0092, 1394, 7779, 7905 **Date:** June 2, 2017
Source/Type of Excipient: ☐ Mineral; ☐ Mineral derived; ☐ Plant; ☐ Plant derived; ☒ Synthetic; ☐ Fermentation derived

Other (explain):

Elemental Impurity		Class	Likely to be Present			If Known, Please Identify the Expected Concentration /Units (or Range)	Analytical Method Used (and Limit of Detection if Available)	Comments regarding source of information (i.e.; number of lots tested, frequency of testing, process understanding, etc.)
Arsenic (inorganic)	As	1	Yes ☐	No ☒	Unknown ☐	<0.1 ppm	ICP-OES (MRL=0.1 ppm)	> 3 batches – testing provided by supplier
Cadmium	Cd	1	Yes ☐	No ☒	Unknown ☐	<0.1 ppm	ICP-OES (MRL=0.1 ppm)	> 3 batches – testing provided by supplier
Mercury (inorganic)	Hg	1	Yes ☐	No ☒	Unknown ☐	<0.1 ppm	ICP-OES (MRL=0.1 ppm)	> 3 batches – testing provided by supplier
Lead	Pb	1	Yes ☐	No ☒	Unknown ☐	<0.2 ppm	ICP-OES (MRL=0..2 ppm)	> 3 batches – testing provided by supplier
Cobalt	Co	2A	Yes ☐	No ☒	Unknown ☐	<0.2 ppm	Atomic Absorption (MRL=0..2 ppm)	> 3 batches – testing provided by supplier
Nickel	Ni	2A	Yes ☐	No ☒	Unknown ☐	<0.2 ppm	ICP-OES (MRL=0..2 ppm)	> 3 batches – testing provided by supplier
Vanadium	V	2A	Yes ☐	No ☒	Unknown ☐	<0.1 ppm	ICP-OES (MRL=0.1 ppm)	> 3 batches – testing provided by supplier

100 Matsonford Rd., Suite 200
Radnor, PA 19087
1 855 282 6867
www.avantorsciences.com

Elemental Impurity		Class	Likely to be Present			If Known, Please Identify the Expected Concentration /Units (or Range)	Analytical Method Used (and Limit of Detection if Available)	Comments regarding source of information (i.e.; number of lots tested, frequency of testing, process understanding, etc.)
Silver	Ag	2B	Yes ☐	No ☒	Unknown ☐	<0.1 ppm	Atomic Absorption (MRL=0.1 ppm)	> 3 batches – testing provided by supplier
Gold	Au	2B	Yes ☐	No ☒	Unknown ☐	Not applicable	Not applicable	Not tested, not added to process
Iridium	Ir	2B	Yes ☐	No ☒	Unknown ☐	<0.1 ppm	ICP-OES (MRL=0.1 ppm)	> 3 batches – testing provided by supplier
Osmium	Os	2B	Yes ☐	No ☒	Unknown ☐	<0.1 ppm	ICP-OES (MRL=0.1 ppm)	> 3 batches – testing provided by supplier
Palladium	Pd	2B	Yes ☐	No ☒	Unknown ☐	<0.1 ppm	ICP-OES (MRL=0.1 ppm)	> 3 batches – testing provided by supplier
Platinum	Pt	2B	Yes ☐	No ☒	Unknown ☐	<0.1 ppm	ICP-OES (MRL=0.1 ppm)	> 3 batches – testing provided by supplier
Rhodium	Rh	2B	Yes ☐	No ☒	Unknown ☐	<0.1 ppm	ICP-OES (MRL=0.1 ppm)	> 3 batches – testing provided by supplier
Ruthenium	Ru	2B	Yes ☐	No ☒	Unknown ☐	<0.1 ppm	ICP-OES (MRL=0.1 ppm)	> 3 batches – testing provided by supplier
Selenium	Se	2B	Yes ☐	No ☒	Unknown ☐	Not applicable	Not applicable	Not tested, not added to process
Thallium	Tl	2B	Yes ☐	No ☒	Unknown ☐	Not applicable	Not applicable	Not tested, not added to process
Barium	Ba	3	Yes ☐	No ☒	Unknown ☐	0.1 ppm	Ion Chromatography (MRL=0.1 ppm)	> 3 batches – testing provided by supplier
Chromium	Cr	3	Yes ☐	No ☒	Unknown ☐	<0.2 ppm	ICP-OES (MRL=0.2 ppm)	> 3 batches – testing provided by supplier
Copper	Cu	3	Yes ☐	No ☒	Unknown ☐	<0.4 ppm	ICP-OES (MRL=0.4 ppm)	> 3 batches – testing

100 Matsonford Rd., Suite 200
Radnor, PA 19087
1 855 282 6867
www.avantorsciences.com

Elemental Impurity		Class	Likely to be Present			If Known, Please Identify the Expected Concentration /Units (or Range)	Analytical Method Used (and Limit of Detection if Available)	Comments regarding source of information (i.e.; number of lots tested, frequency of testing, process understanding, etc.)
								provided by supplier
Lithium	Li	3	Yes ☐	No ☒	Unknown ☐	<0.1 ppm	Ion Chromatography (MRL=0.1 ppm)	> 3 batches – testing provided by supplier
Molybdenum	Mo	3	Yes ☐	No ☒	Unknown ☐	<0.2 ppm	ICP-OES (MRL=0.1 ppm)	> 3 batches – testing provided by supplier
Antimony	Sb	3	Yes ☐	No ☒	Unknown ☐	<0.1 ppm	Atomic Absorption (MRL=0.1 ppm)	> 3 batches – testing provided by supplier
Tin	Sn	3	Yes ☐	No ☐	Unknown ☒	Not expected to be present	Not applicable	Not tested, not added to process

Reference: ICH Q3D Guideline for Elemental Impurities, Step 4 version, September 2014



David L. Cugini, Sr. QA Analyst
Prepared by the Technical Service Department

Avantor™ Performance Materials, Inc.
3477 Corporate Parkway Suite #200
Center Valley, PA 18034
1-800-669-8230

Avantor™ Performance Materials, Inc provides the information contained herein in good faith but makes no representations or warranties, either expressed or implied, including without limitation any warranties of merchantability or fitness for a particular purpose with respect to the information set forth herein or the product(s) to which the information refers. Accordingly, Avantor™ Performance Materials, Inc will not be responsible for damages resulting from the use of or reliance upon this information.

Trademarks are owned by Avantor Performance Materials, Inc. or its affiliates unless otherwise noted.
© 2016 Avantor Performance Materials, Inc.