

Technical Data Sheet
Blue d'Or™ Wild Blueberry Powder
(Vaccinium angustifolium)



Product Code: 20NS0035
Date: February 2020



Product Specification

Product Description: Dried wild blueberry (*Vaccinium angustifolium*) containing a standardized anthocyanin content

Product Properties

| | |
|-------------------|--|
| Color | Blue, violet |
| Appearance | Powder, uniform particles, hygroscopic |
| Taste | Characteristic of blueberry |
| Odor | Characteristic of blueberry |
| Mesh size | NLT 65% through 60 mesh |
| Fruit equivalence | 75:1 |
| Plant part used | Berries (whole fruit) |

Analytical Values

| | | Spec. |
|---|-----|--------------|
| Anthocyanins (<i>HPLC expr as Cyanidin-3-O-Glucoside</i>) | ≥ 1 | mg/g |
| Moisture (<i>Moisture analyzer, Thermogravimetric</i>) | < 5 | % |

Heavy Metals and Pesticides

| | | Spec. |
|---------------------------|---|--------------|
| Lead (<i>ICP-MS</i>) | < 1 | ppm |
| Arsenic (<i>ICP-MS</i>) | < 2 | ppm |
| Cadmium (<i>ICP-MS</i>) | < 1 | ppm |
| Mercury (<i>ICP-MS</i>) | < 0.1 | ppm |
| Pesticides | Conforms to the requirements of USP <561> | |

Microbiological Values

| | | Spec. |
|---|----------|--------------|
| Yeast and Mold (<i>USP/NF 2021</i>) | < 1,000 | CFU/g |
| Total plate count (<i>USP/NF 2021</i>) | < 10,000 | CFU/g |
| <i>E. coli</i> (<i>USP/NF 2022</i>) | Absent | /25 g |
| <i>Salmonella</i> (<i>USP/NF 2022</i>) | Absent | /25 g |
| <i>Staphylococcus aureus</i> (<i>USP/NF 2022</i>) | Absent | /25 g |

Country of Origin: Canada (raw materials and manufacturing)

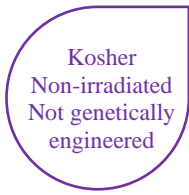
Packaging: Packed in a two polyethylene bags inside a corrugate box, 6.5 kg net weight

Storage: The product must be stored in a dark, cool, and dry area. Keep the package well-sealed since the product is hygroscopic. Color may change at the end of shelf life.

Best Used By: 24 months after production date under proper storage conditions

Melanie Bush
 Quality Control

The information contained herein is, to the best of our knowledge, correct. The data outlined and the statements made are intended only as a source of information. No warranties, expressed or implied, are made. On the basis of this information, it is suggested that you evaluate the product on a laboratory scale prior to use in a finished product.



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Composition Statement

We hereby certify that, for the above named product, the composition is as follows:

| | |
|---------------------------|---|
| Genus and species: | <i>Vaccinium angustifolium</i> |
| Plant part used: | Berries (whole fruit) |
| Ingredients: | Wild Blueberry (100%) |
| Country of origin: | Canada (manufacturing and raw material) |
| Final form: | Powder |

GMO Statement

The above named product is not genetically engineered.

Gluten-Free Statement

The above named product is entirely of fruit/vegetable origin. It is not produced from and does not contain any gluten or gluten byproducts; therefore, it is considered gluten-free.

Vegan Statement

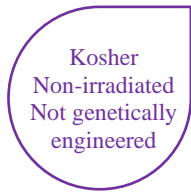
The above named product is entirely of fruit/vegetable origin and is not produced from any animal products or byproducts; therefore it is considered vegan-friendly.

BSE/TSE Statement

The above named product is risk free for BSE/TSE because it is not processed with any meat products or by-products. Furthermore, no meat products or by-products are manufactured or processed on the premises.

Irradiation and Sterilization Statement

The above named product has not been irradiated during the manufacturing process, nor has any chemical sterilization method been used. We also confirm that it has not been exposed to ethylene oxide (EtO) and is considered an EtO-free product.



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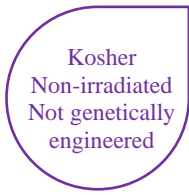


Nutritional Profile

Mean values per 100 g

| | | |
|---------------------|-------|------|
| Calories | 423 | kcal |
| Total Fat | 8.07 | g |
| Saturated Fat | 0.59 | g |
| Monounsaturated Fat | 1.55 | g |
| Polyunsaturated Fat | 5.56 | g |
| Trans Fat | 0.01 | g |
| Cholesterol | < 1.0 | mg |
| Sodium | 6.0 | mg |
| Total Carbohydrates | 79.6 | g |
| Dietary Fiber | 52.8 | g |
| Total Sugars | 20.6 | g |
| Added Sugars | 0 | g |
| Protein | 8.0 | g |
| Ash (minerals) | 1.21 | g |
| Calcium | 160 | mg |
| Iron | 10.4 | mg |
| Potassium | 269 | mg |
| Vitamin A (RE) | < 20 | RE |
| Vitamin D | < 10 | IU |
| Vitamin C | < 1.0 | mg |

As with any material, there may be some variation in the nutritional composition. The following values are being supplied to you to aid in your development work, but should not be used solely to determine your nutrient labeling. You may need to analyze for those nutrients as they occur in your final product as required by the Code of Federal Regulations Title 21; section 101.9.



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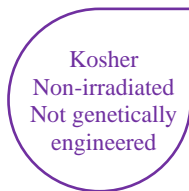
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Allergen Statement

| Description of Allergen | Present in the Product | Source | Present in Other Products Mfg. on the Same Line | Present in the Same Mfg. Plant |
|--|------------------------|--------|---|--------------------------------|
| Artificial colors/preservatives | No | | No | No |
| Autolyzed yeast | No | | No | No |
| Celery | No | | No | No |
| Cereal proteins (include HVP) | No | | No | No |
| Corn or corn products | No | | No | No |
| Cottonseed flour | No | | No | No |
| Egg or egg products | No | | No | No |
| Fish or fish products | No | | No | No |
| Gluten | No | | No | No |
| Milk or milk-derived products | No | | No | No |
| Mustard or mustard products | No | | No | No |
| Peanuts or peanut products | No | | No | No |
| Seeds or seed products | Yes | | Yes | Yes |
| Sesame or sesame products | No | | No | No |
| Shellfish, crustaceans (specify) | No | | No | No |
| Soybeans or soybean products | No | | No | No |
| Sulfites (specify level) | No | | No | No |
| Tree nuts (almond, brazil nut, cashew, chestnut, hazelnut, pine nuts, pistachio, pecan, macadamia, walnut) | No | | No | No |
| Wheat or wheat products | No | | No | No |
| Yeast or yeast products | No | | No | No |

Effective procedures are in place to avoid cross-contamination of the product with the allergens not present in the product but noted in columns III and IV.



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Safety Data Sheet

Section I Product and Company Identification

| | | | |
|-----------|---|---------------|--------------|
| Product: | Blue d'Or™ Wild Blueberry Powder | Product code: | 20NS0035 |
| Supplier: | Artemis International, Inc. 3711 Vanguard Dr. – Suite A Fort Wayne, IN 46809-3301 USA | Phone: | 260-436-6899 |
| | | Fax: | 260-478-6900 |

Section II Hazard Identification

| | |
|---|---|
| Food, not a hazardous substance or mixture. | |
| Physical hazards: | Not classified as a physical hazard |
| Health hazards: | Not classified as a health hazard |
| Environmental hazards: | Not classified as an environmental hazard |
| Specific hazards: | Dusts may irritate the respiratory tract, skin, and eyes. |
| Main symptoms: | Upper respiratory tract irritation, coughing, irritation of eyes and mucous membranes |

Section III Composition/Ingredients

| | |
|--------------|-----------------------|
| Ingredients: | Wild blueberry powder |
|--------------|-----------------------|

Section IV First Aid Measures

| | |
|---------------|--|
| Eye contact: | Dusting of powder may cause eye irritation. Flush eyes with water for 15 minutes. Get medical attention if symptoms develop and persist. |
| Skin contact: | Product is not irritating to skin; however, flush with water or soap and water for 15 minutes or until all traces have been removed. Seek medical attention if symptoms develop and persist. |
| Inhalation: | Product may cause irritation of the nose and throat. If inhaled, remove personnel to fresh air and, if needed, seek medical attention. |
| Ingestion: | Product is not known to result in significant adverse health effects. If swallowed, rinse mouth and throat with water. Drink water. |

Section V Fire Fighting Measures

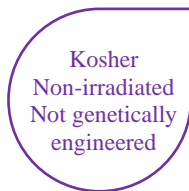
| | |
|-------------------------------------|---|
| Flammability: | Product is not combustible. |
| Extinguishing media: | Product is not flammable. Use water, carbon dioxide, dry powder extinguisher, or other media appropriate for materials actually involved in fire. |
| Special fire fighting procedures: | Follow the general fire precautions indicated in the workplace. |
| Unusual fire and explosion hazards: | None |

Section VI Accidental Release Measures

| | |
|----------------------------|---|
| Leak and spill procedures: | Prevent further spill of material, contain material already spilled. Sweep up spilled material for disposal. Flush spill area with water spray. CAUTION! Material on wet floor may be slippery. |
| Personal precautions: | Avoid inhalation of dust and contact with skin and eyes. Wear appropriate protective equipment and clothing during clean-up. |
| Methods for cleaning up: | Avoid dust formation. Remove small spills with vacuum cleaner. |
| Environmental precautions: | Prevent further leakage or spillage. |

Section VII Handling and Storage

| | |
|----------------------|--|
| Handling procedures: | No special equipment required. Avoid inhalation of dust. Use only with adequate ventilation. |
| Hygiene practices: | Follow food GMPs. Avoid contact with skin, eyes, and clothing. Wash thoroughly after handling. |
| Storage: | Store in a cool, dry location. Keep container closed. Normal room ventilation satisfactory. |



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Section VIII Exposure Controls and Personal Protection

| | | |
|-------------------------|---|--|
| Engineering controls: | Eyewash fountains and safety showers should be easily accessible. | |
| Respiratory protection: | Provide adequate ventilation. Respirator not normally required. In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter. | |
| Protective gloves: | Avoid skin contact. Wear gloves for extended or repeat skin contact with powder. | |
| Eye protection: | Avoid eye contact. Wear safety glasses while handling powder. | |
| Clothing: | Standard work clothing; wash regularly. | |

Section IX Physical and Chemical Characteristics

| | | | |
|----------------------|-----------------------------|-----------------|-----------|
| Appearance: | Blue, violet powder | Boiling point: | N/A |
| Odor: | Characteristic of blueberry | Freezing point: | N/A |
| Physical state: | Solid | Melting point: | Not known |
| pH: | Not known | Vapor pressure: | Not known |
| Solubility in water: | Partially soluble | Vapor density: | Not known |
| Density: | Not known | | |

Section X Stability and Reactivity

| | | | |
|--|--------------------------|--|--|
| Chemical stability: | Stable, no decomposition | | |
| Conditions to avoid: | None known | | |
| Materials to avoid: | None known | | |
| Hazardous decomposition or byproducts: | None known | | |
| Hazardous polymerization: | Does not occur | | |

Section XI Toxicological Information

No known toxic effects from acute or chronic exposure

Section XII Ecological Information

No known environmental impact. Product is biodegradable.

Section XIII Disposal Information

Waste disposal method: Incinerate or landfill in accordance with local, state, or federal regulations.

Section XIV Transportation Information

Shipping information: Non-hazardous

Section XV Regulatory Information

Not classified as hazardous according Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and setting up a European Chemicals Agency
 Not classified as hazardous according OSHA 29 CFR 1910.1200.
 Not classified as hazardous according Hazardous Products Regulations (SOR/2015-17)

Section XVI Other Information

Prepared: 12.12.19 Last Revision 2.21.20

All information appearing herein is based upon data obtained from the raw material manufacturer and/or recognized technical sources. While the information above is believed to be true and accurate, the author makes no representations as to its accuracy or sufficiency. Conditions of use are beyond the producer's control, and therefore the users are responsible to verify this data under their own particular conditions, applications, and regulations to determine whether the product is suitable for their particular purposes, and they assume all risks of their use, handling, disposal, reliance upon, publication, or use of the information contained herein. This information applies only to the product designated above and does not necessarily apply to its use in combination with other materials, products, chemical compounds, structures, or processes.

Melanie Bush
 Quality Control

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