

**Technical Specifications of U.S. Highbush Blueberries**  
(*Vaccinium corymbosum*)

Product	Process	Packaging	Characteristic/Application	Storage
<b>Fresh</b>	Fresh blueberries > packaged	<b>Consumer packs:</b> plastic clam shells, cello packs Cartons: 5 lb. (2.3 kg), 10 lb. (4.5 kg)	Available almost year round! Fresh or glazed topping on fresh baked cakes	32-34 F (0 - 1 C) 90-95% relative humidity
<b>Frozen</b>				
IQF (Individually Quick Frozen)	* >Fresh blueberries>individually quick frozen> packaged.	Consumer packs: poly bags.Bulk: Poly lines corrugated cartons 10-50 lb. (4.5 - 22.7 kg)Poly-lined metal drums: 270 lb. (122.5 kg)	Individual fresh fruit identity.Any formulation where fruit identity is important.	0 to -10 F  (-18 to -23 C)
Straight Pack	*>Fresh Blueberries> packaged> flash frozen.	Poly-lined corrugated cartons: 30-50 lb. (13.6 - 22.7 kg)Poly-lined metal drums: 350 lb. (158.8 kg)	High amount of fruit in a box., >A base ingredient for making toppings, syrups fillings and soups.	0 to -10 F  (-18 to -23 C)
<b>Liquid</b>				
Single Strength Puree	*>Fresh blueberries> crushed>finished> pasteurized or cold filled in containers> frozen.	Plastic pails: 28, 30 lb. (12.7, 13.6 kg)Poly lined corrugated cartons: 25,30 lb. (12.7, 13.6 kg)  Poly lined metal drums: 55 gal (208 l) 400 lb. (181 kg)	Brix: 8.0 -13.0  pH: 2.8 -3.5>Used in, sauces, flavorings and fillings.	0 to -10 F  (-18 to -23 C)
Puree Concentrate	*>Fresh blueberries> crushed > heat/enzyme treated> vacuum concentrated > pasteurized > packaged > frozen.	Plastic pails: 4,6 gal (15.1, 22.7 l)28,30,60 lb. (12.7, 13.6, 27.2 kg)  Poly-lined metal drums filled to desired Brix levels.	Brix Ranges: 20,37, 40  pH: 2.8 - 3.4>Juices, sauces, blends.	0 to -10 F  (-18 to -23 C)
Single Strength Juice	Fresh berries > crushed > pressed > filtered > pasteurized > packaged > frozen	Plastic pails: 5,6 gal (18.9, 22.7 l) 28,30,60 lb. (12.7,13.6, 27.2 kg)Poly-lined metal drums filled to desired Brix levels.	Brix: 8.0 - 12.0  pH: 2.8 - 3.4>All natural fruit juices.	0 to -10 F  (-18 to -23 C)
Juice Concentrate	Fresh blueberries > crushed > heat/enzyme treated > vacuum concentrated > packaged > frozen.	Plastic pails: 5,6 gal (18.9, 22.7 l)  50,66 lb. (22.7, 29.9 kg)Poly-lined metal drums filled to desired Brix levels.	Brix: 45.0, 65.0  pH: 2.1 - 2.7>Used in fruit juices and also as sauce flavor.	0 to -10 F  (-18 to -23 C)
Essence	+ >volatile flavor components distilled off from juice and concentrate process > packaged.	Plastic pails: 5,6 gal (18.9, 22.7 l) and other sizes.	Intensive blueberry flavor found in no artificial flavoring.>Used to boost blueberry flavor in tandem with berries. Also brewing flavor.	Tightly closed container at 40F (4 C) or lower

Product	Process	Packaging	Characteristic/Application	Storage
<b>Shelf Stable</b>				
Canned Canned (Packed in Water)	Fresh or frozen blueberries > placed in cans > light or heavy syrup added > sealed > heated. Fresh or frozen blueberries>placed in cans>water added>sealed>heated.	Cans: #2, #21/2 #10, other sizes	Various levels of fruit content depending on supplier and application.	Shelf stable in a cool, dry place.
Bakery fruit fillings	Fresh or frozen blueberries and/or other forms > sweetener and starch/gum based slurry added > heated > packaged to specifications. (differs from supplier to supplier)	Plastic and foil pouches, 5 gal plastic pails (18.9 l) and 55 gal drums.(208.2 l)	Various levels of fruit content depending upon supplier and end use.>Used in Danish, fruit fillings and toppings.	Shelf stable in a cool, dry place.
<b>Dried</b>				
Dehydrated	*Fresh or frozen blueberries > air dehydrated to around 11-18 % moisture > further processed to dried fruit specs: i.e. oil coated, diced etc.	Poly- lined corrugated boxes:5, 10, 25 lb.	Moisture: 11-18 % Water Activity: 0.5-0.6	Shelf stable in a cool, dry place.
Freeze Dried	* Fresh or frozen blueberries > flash frozen > moisture removed in vacuum chamber > sealed in moisture proof bags.	Poly lined corrugated boxes,(10 lb.) and other custom sizes	Moisture level (unsweetened): 0-2 %  Moisture level: (sweetened): 9-14%	Stable at room temperature for 3 months, after that store at 40 F.
Drum Dried/Powders	* Fresh or frozen blueberries or puree > drum dried > ground into powder or flakes to specifications	Poly lined corrugated boxes,(10 lb.) and other custom sizes	Moisture Content: 3-5%Available in various screen sizes and granule consistency..	Stable at room temperature for 3 months, after that store at 40 F.
Other	Real fruit bits and chips are formulated out of a blend of puree and other ingredients.	10 lb. boxes and other custom sizes.	Fruit Content: 30-40 %>Used in cookies and other baking and snack applications.	Shelf stable in a cool, dry place.