

Fruit Juice, Grape, Single Strength

Revised 2018

Storage Conditions

	Pasteurized-Bulk Chilled-Refrigerated	Pasteurized Canned
	Single Strength	Single Strength
Temperature	28-32°F (-2.2 to 0°C)	45-70°F (7.2-21.1°C)
Storage Period	6-9 months	1 year

The quality attributes and nutritive loss in pasteurized, cooled, single strength grape juice are negligible provided it remains at 28-45°F (-2.2 to 7.2°C) and has been properly short-time heated to 190-200°F (87.7-93.3°C) and immediately cooled under sterile conditions of processing and storage. Single strength bulk grape juice should be held at 28-30°F (-2.2 to -1.1°C) after initial heating/cooling processing to allow the potassium tartrate crystals to form and to settle out. Bulk grape juice is often decanted off after settling to reduce inclusion of settled crystals. The bottom portion of the bulk storage must be filtered to reduce potential of the potassium tartrate crystals precipitating out in a finished manufactured product. It can take 2-3 months or longer for the tartrates to precipitate out at temperatures of 28-32°F (-2.2 to 0°C). The storage life is generally restricted to about 6-9 months because of the lack of absolute sterility assurance in large bulk storage tanks of 50,000-250,000 gal (190,000-950,000 L).

Canned or bottled grape juice is processed from settled or filtered, aged grape juice to assure no tartrate crystals will be found in the canned juice. Storage life of the canned, pasteurized juice is normally restricted to 1 year because of the color pigment change of red-purple to brown under long storage and/or extensive heat storage above 70°F (21.1°C).

In frozen storage, grape juice can still drop out crystals of potassium tartrate and dextrose even if it had been previously settled. These crystals can be re-dissolved back into solution when heated to approximately 120°F (49°C).

Packaging

Modern packaging of purees and puree concentrates utilizes some form of aseptic totes. There are a number of different styles, including stainless steel totes that can be sterilized and reused; reusable plastic totes with disposable aseptic liners; or large (275 to 300 gallon) fiberboard disposable totes. It is important to note that none of these container types are designed for frozen use. Freezing and thawing destroys the integrity of the disposable fiberboard totes, and the plastics can become brittle and/or break. Stainless steel totes can burst with freezing due to internal gas pressure. As a result, containers should be stored in either ambient or refrigerated areas using similar storage length as drums under the

same conditions. This limits their use to aseptic products. After opening, the items either need to be used immediately or transferred into another container for refreezing and/or storage. Prior to refreezing the user should consider what type of packaging is suitable.

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