

# Fruit Juice, Fruit Essence, Concentrate

Revised 2018

## Storage Conditions

Temperature	32-45°F (0-7.2°C)
Storage Period	1 year

During the concentrating of fruit juices, water is removed. Many fruit products have low-boiling ester and other flavor components, which upon loss during the water evaporation would reduce the final manufactured product flavor. All high-quality fruit evaporators are therefore designed with a volatile or still recovery system. This system recovers approximately 1 gal of concentrated flavor from 100 to 150 gal of single strength juice. The fruit volatile may be labeled 100-fold or 150-fold, depending on the concentration of finished essence from the fruit concentrate. In manufacturing the fruit essence, volatile is added back based on the fold identification on the label and as extracted in the fruit concentrate process.

Since the fruit item being processed will contain esters and alcohol components, "folding" will result in concentrating of the alcohols. Federal regulations apply to "still" operations; and if the volatile recovered contains 15% alcohol or higher, it must be denatured by means of citric acid before moved into transportation or storage modes.

It is not recommended that fruit volatiles be frozen in storage, since the water phase would freeze and the organic component would separate from the water, further concentrating the flavor. Upon opening of the container, a high level of this aroma would potentially be lost to the atmosphere.

## Packaging

Modern packaging of juice 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 storage. Prior to refreezing the user should consider what type of packaging is suitable.

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