

Mixed Commodities

Mixing Commodities for Transport

Before mixing products for transport, two basic areas must be considered:

1. Recommended transit temperature settings for different commodities.
2. Inherent Product characteristics (odor absorption, generation of volatile gases, etc.)

Products that are temperature compatible may not possess compatible inherent characteristics. For example, products such as green leafy vegetables, mushrooms, rhubarb, sweet corn and butter are highly susceptible to absorption of odors. They should not be mixed with products possessing strong offensive odors either organically (fresh onions) or as the result of chemical treatment (grapes treated with sulfur dioxide or citrus treated with biphenyl).

Similarly, commodities with vastly different temperature requirements should not be mixed. Averaging temperatures of these types of commodities may result in accelerated ripening or decay of some products, chilling injury and eventual accelerated decay of the others.

Commodities shipped together should be compatible not only according to temperature but also according to atmosphere requirements (if using MA or CA), relative humidity, ethylene sensitivity and odor characteristics.

The accompanying table below lists eight compatibility groups. While compatibility does not imply crops in the same group should be or are normally shipped together, it does mean that they may be shipped together if circumstances require it. These recommended settings should be used with discretion, depending upon the actual load.

For example, if 75% of a given load requires 34° Fahrenheit and the balance requires 40° Fahrenheit, protection should be given to the greater portion with a 36° Fahrenheit setting instead of a possible 38° Fahrenheit temperature setting. Obviously, this is dictated by the economic break-even point on the profitability of cargo loss. If you have questions about the actual compatibility of various products, please contact your local Horizon Lines' sales representative who will be glad to assist you.

Product Compatibility

GROUP	TEMPERATURE	PRODUCTS
	°F	
1	32-34	apples, apricots, berries (not cranberries), cherries, nectarines, peaches, pears, persimmons, plums, prunes, pomegranate, quinces, grapes ^{*2}
2	56-60	bananas, grapefruit (AZ & CA), mangoes, papayas, tomatoes (mature green)
3	36-41	cantaloupes, cranberries, lychees, oranges ^{*3} (FL & TX)
4	50	avocados, eggplant, grapefruit (FL & TX), muskmelons, tomatoes, pineapples, (not with avocados), watermelons
5	40-55	beans (snap), cucumbers, eggplant, lemons (green), limes, oranges (CA & AZ), potatoes, pumpkins, squash, watermelons, water chestnuts
6 ^{*1}	32-34	artichokes, asparagus, beets, carrots, escarole, grapes ^{*2} , lettuce, mushrooms, parsnips, peas, rhubarb, spinach, sweet corn, watercress
7 ^{*1}	32-34	broccoli, Brussels sprouts, cabbage, cauliflower, celery, horseradish, kohlrabi, leeks, onions (green), radishes, rutabagas, turnips
8	55-60	ginger, sweet potatoes

*1 Compatible with Group 7 (or 6) except for grapes and mushrooms.

*2 If grapes have been fumigated with sulfur dioxide, they are non-compatible with other products.

*3 If oranges are fumigated with biphenyl, they are non-compatible with other products.

