

Recommended Storage Temperature and Relative Humidity Compatibility Groups

The four principal concerns regarding product compatibility:

- ✓ **Temperature**
- ✓ **Moisture**
- ✓ **Ethylene**
- ✓ **Odor**

Compatibility Groups

**Group 1: Fruits and vegetables, 0 to 2°C (32 to 36°F), 90-95% relative humidity.
Many products in this group produce ethylene.**

| | | |
|------------------------------|---------------------------------|--------------|
| Apples | Grapes (without sulfur dioxide) | Parsnips |
| Apricots | Horseradish | Peaches |
| Asian pears | Kohlrabi | Pears |
| Barbados cherry | Leeks | Persimmons |
| Beets, topped | Longan | Plums |
| Berries (except cranberries) | Loquat | Pomegranates |
| Cashew apple | Lychee | Prunes |
| Cherries | Mushrooms | Quinces |
| Coconuts | Nectarines | Radishes |
| Figs (not with apples) | Oranges* (Florida & Texas) | Rutabagas |
| | | Turnips |

*Citrus treated with biphenyl may give odors to other products.

**Group 2: Fruits and vegetables, 0 to 2°C (32 to 36°F), 95-100% relative humidity.
Many products in this group are sensitive to ethylene.**

| | | |
|------------------------------|--|---------------|
| Amaranth* | Corn, sweet* | Parsley* |
| Anise* | Daikon* | Parsnips* |
| Artichokes* | Endive* | Peas* |
| Asparagus | Escarole* | Pomegranate |
| Bean Sprouts | Grapes (without sulfur dioxide) | Raddichio |
| Beets* | Horseradish | Radishes* |
| Belgian endive | Jerusalem artichoke | Rhubarb |
| Berries (except cranberries) | Kiwifruit | Rutabagas* |
| Bok choy | Kohlrabi* | Salsify |
| Broccoli* | Leafy greens | Scorzonera |
| Brussels sprouts* | Leeks* (not with figs or grapes) | Snow peas |
| Cabbage* | Lettuce | Spinach* |
| Carrots* | Lo bok | Turnips* |
| Cauliflower | Mushrooms | Waterchestnut |
| Celeriac* | Onions, green* (not with figs, grapes, mushrooms, rhubarb, or corn) | Watercress* |
| Celery* | | |
| Cherries | | |

*these products can be top-iced.

Group 3: Fruits and vegetables, 0 to 2°C (32 to 36°F), 65-75% relative humidity. Moisture will damage these products.

Garlic Onion, dry

Group 4: Fruits and vegetables, 4.5°C (40°F), 90-95% relative humidity.

| | | |
|---------------|-----------------------------------|-------------|
| Cactus leaves | Lemons* | Tamarillo |
| Cactus pears | Lychees | Tangelos* |
| Caimito | Kumquat | Tangerines* |
| Cantaloupes** | Mandarin* | Ugli fruit* |
| Clementine | Oranges* (California and Arizona) | Yucca Root |
| Cranberries | Pepino | |

*citrus treated with biphenyl may give odors to other products

**can be top-iced

Group 5: Fruits and vegetables, 10°C (50°F), 85-90% relative humidity. Many of these products are sensitive to ethylene. These products are also sensitive to chilling injury.

| | | |
|--------------|-------------------|-----------------------------|
| Beans | Kiwano | Pummelo |
| Calamondin | Malanga | Squash, summer (soft shell) |
| Chayote | Okra | Tamarind |
| Cucumber | Olive | Taro root |
| Eggplant | Peppers | |
| Haricot vert | Potatoes, storage | |

Group 6: Fruits and vegetables, 13 to 15°C (55 to 60°F), 85-90% relative humidity. Many of these products produce ethylene. These products also are sensitive to chilling injury.

| | | |
|--------------|-----------------------------|-----------------------------|
| Atemoya | Ginger root | Papayas |
| Avocados | Granadilla | Passionfruit |
| Babaco | Grapefruit | Pineapple |
| Bananas | Guava | Plantain |
| Bitter melon | Jaboticaba | Potatoes, new |
| Black sapote | Jackfruit | Pumpkin |
| Boniato | Langsat | Rambutan |
| Breadfruit | Lemons* | Santol |
| Canistel | Limes* | Soursop |
| Carambola | Marney | Sugar apple |
| Cherimoya | Mangoes | Squash, winter (hard shell) |
| Coconuts | Mangosteen | Tomatillos |
| Feijoa | Melons (except cantaloupes) | Tomatoes, ripe |

*citrus treated with biphenyl may give odors to other products.

Group 7: Fruits and vegetables, 18 to 21°C (65 to 70°F), 85-90% relative humidity.

| | | |
|----------------------|------------------------|--------------|
| Jicama | Sweet potatoes* | Watermelon* |
| Pears (for ripening) | Tomatoes, mature green | White sapote |
| | | Yams* |

*separate from pears and tomatoes due to ethylene sensitivity.

Sources

Hardenburg, Robert E., Alley E. Watada, Chien Yi Wang. The Commercial Storage of Fruits, Vegetables, Florist and Nursery Stocks, United States Department of Agriculture Handbook #66.

McGregor, B.M. 1989 Tropical Products Transport Handbook. USDA OT Agricultural Handbook #688.

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