

To ensure the optimum transportation conditions are achieved for your cargoes, we recommend considering the temperature and humidity within the container and the availability for free flowing fresh air. Please consider the following recommendations for the safe transportation of perishable commodities.

Source: John Frith (1991). *The Transport of Perishable Foodstuffs*. 2nd Ed. Cambridge: SRCRA. 44.

## RECOMMENDED CONDITIONS FOR REFRIGERATED PRODUCTS

Commodities	Carrying Temp °C	Temp Limits °C	Freezing Temp °C	Ventilation	Cargo Shelf Life	Ethylene Production Rate	Sensitivity to Ethylene
<b>Apples</b>	0	-0.5 / 2	-1.5	H	Depends on variety	VH	H
<b>Apricot</b>	-0.5	-0.5 / 0	-1.5	H	20	H	H
<b>Artichoke</b>							
<b>Artichoke Globe</b>	0	-0.5 / +4	-1	L	14 / 20	VL	L
<b>Artichoke Jerusalem</b>	0	-0.5 / +4		L	60	VL	L
<b>Asparagus</b>	0	0 / 1.1	-0.5	M	20	VL	M
<b>Aubergine (Egg Plant)</b>	7	7 / 10	-0.5	L	14	VL	L
<b>Avocado</b>	7	4.5 / 13	-0.5	H	30	H	H
<b>Bacon</b>	-1	-2 / +4.5		None	30		
<b>Banana</b>							
<b>Banana Lacatan</b>	14	14 / 15	-1	Maximum possible when cooled	24	M	H
<b>Banana Other varieties</b>	12	12 / 13.5	-1	Maximum possible when cooled	24	M	H
<b>Beans (French)</b>	0	0 / 7	-0.5	M / H	20	L	L
<b>Beef</b>							
<b>Beef Chilled in quarters</b>	-1.5	-1.5 / 0		None See note (2)	40	70	
<b>Beef Packaged</b>	-1.5	-1.5 / 0		None	70		
<b>Beer</b>	2	0.5 / 3		None	120	N	N
<b>Beetroot</b>	0	0 / 1	-0.5	L	60 / 90	VL	L
<b>Blueberries</b>	-1	-1 / 0	-2	None	20 / 30	N	H
<b>Broccoli</b>							
<b>Broccoli Sprouting</b>	0	0 / 1	-0.5	H	10	VL	H

Commodities	Carrying Temp °C	Temp Limits °C	Freezing Temp °C	Ventilation	Cargo Shelf Life	Ethylene Production Rate	Sensitivity to Ethylene
<b>Broccoli Winter Cauliflower</b>	0	0 / 1	-0.5	H	30	VL	H
<b>Brussels Sprouts</b>	0	0 / 1	-0.5	H	30	VL	H
<b>Bulbs</b>							
<b>Bulbs Daffodil / Narcissus</b>	5	5 / 9	-1.3	Max possible	120	VL	H
<b>Bulbs Dahlia</b>	5	5 / 9	-1.5	Max possible	150	VL	H
<b>Bulbs Gladiolus</b>	5	5 / 10	-2.1	Max possible		VL	H
<b>Bulbs Lily</b>	5	0 / 5	-1.7	Max possible	150	VL	H
<b>Bulbs Tulip</b>	10	5 / 10	-2.0	Max possible	120	VL	H
<b>Bulbs Unidentified mixed</b>	4.5	0 / 13					
<b>Butter</b>	0	-1 / +4.5		None	30		
<b>Cabbage</b>	0	0 / 1	-0.5	H	20	VL	H
<b>Carrots</b>	0	-0.5 / +0.5 -1		L	70	VL	L
<b>Cauliflower</b>	0	0 / 1	-0.5	H	30	VL	H
<b>Celery</b>	0	0 / 1	-0.3	H	60 / 90	VL	M
<b>Cheese</b>	2	0 / 10		As necessary (4)			
<b>Cherry</b>	-0.5	-1 / 0	-1.5	L	20	VL	L
<b>Chicory (Witloof)</b>	0	0 / 1	-0.5	H	14 / 20	VL	H
<b>Chinese Gooseberry (Kiwi Fruit)</b>	-0.5	-0.5 / 0.5	-2	H	50 / 75	L	H
<b>Chocolate</b>	7	4.5 / 13		None	150	N	N
<b>Confectionary</b>	7	4.5 / 13		None	150	N	N
<b>Cream</b>	0	-1 / +0.5		None	10		
<b>Cucumber</b>	7	7 / 10	-0.3	H	14	L	H
<b>Eggs Shell Liquid as frozen</b>	0	-1 / +0.5	-2.5	Yes	180		
<b>Fats</b>	0	-1 / +4.5		None			
<b>Fish</b>							
<b>Fish Iced</b>	-0.5	-2 / 0		None			
<b>Fish Salt, Smoked</b>	-0.5	-2 / +4.4		150	14 / 20		
<b>Flowers</b>							
<b>Flowers Cut</b>	0	-0.5 / +4.5	-0.5	H		VL	H
<b>Flowers Florist Greens</b>	0	-0.5 / +4.5	-0.5	H	Up to 30	VL	H
<b>Game</b>	0	-1.5 / 0			14		
<b>Garlic</b>	0	0 / 1	-0.5	L	150	VL	L
<b>Ginger</b>	12	10 / 13		L	150	VL	L
<b>Grape</b>	-0.5	-1 / 0.5	-1.5	L	50 / 100	VL	L

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<b>Grapefruit</b>	10	4.5 / 16	-1	1% CO2 or max possible	40	VL	M
<b>Ham</b>							
<b>Ham Canned</b>	4.5	0 / 10		None			
<b>Ham Fresh Cured</b>	-0.5	-1.5 / +0.5		None	21		
<b>Hops</b>	4.5	-2 / +10		H	100	VL	H
<b>Lamb and Mutton</b>	-1.5	-1.5 / 0		None	30		
<b>Lamb and Mutton Packaged</b>	-1.5	-1.5 / 0		None	70		
<b>Lard</b>	0	-1.5 / +4.5		None	180		
<b>Leek</b>	0	0 / 1	-0.5	M	60	VL	M
<b>Lemon</b>	10	5 / 16	-1.5	1% CO2 or max possible	80	VL	M
<b>Lettuce</b>							
<b>Lettuce Iceberg</b>	0	0 / 1	-0.5	H	40	L	H
<b>Lettuce Other Varieties</b>	0	0 / 1	0	H	20	L	H
<b>Margarine</b>	0	-1.5 / +0.5		None	180		
<b>Marrow Courgette Summer Squash Zucchini</b>	7	7 / 10	-0.3	M	60	L	M
<b>Meat Products</b>	-0.5	-1.5 / +0.5		None			
<b>Melon</b>							
<b>Melon Cantaloupe</b>	3	2 / 4.5		M	15	H	H
<b>Melon Honeydew, Casaba</b>	10	10 / 21		M	90	L	L
<b>Melon Nectarines</b>	-0.5	-0.5 / 0.5	-1	M / H	30	H	H
<b>Melon Water</b>	10	4.5 / 10		L	15	L	L
<b>Milk</b>							
<b>Milk Concentrated</b>	0	-0.5 / +1		None			
<b>Milk Pasteurised</b>	0	-0.5 / +1		None	14		
<b>Milk Sterilised</b>	0	-0.5 / +1		None	30		
<b>Nuts</b>							
<b>Nuts Brazil</b>	0	-1 / 1.5		VL	180	VL	L
<b>Nuts Chestnuts</b>	0	-1 / 1.5		VL	180	VL	L
<b>Nuts Others</b>	0	-1 / +10		VL	180	VL	L
<b>Onions</b>	0	0 / 1	-0.5	M	30 / 120	VL	M
<b>Orange</b>	4.5	3 / 7	-1 / -0.5	1% CO2 or max possible	40 / 50	VL	M
<b>Potatoes</b>							

Commodities	Carrying Temp °C	Temp Limits °C	Freezing Temp °C	Ventilation	Cargo Shelf Life	Ethylene Production Rate	Sensitivity to Ethylene
Potatoes Seed	4.5	2 / 7	-0.5	M	150	VL	M
Potatoes Ware	7	4.5 / 10	-0.5	M	60+	VL	M
Peach	-0.5	-0.5 / -1	-1.5	M / H	30	H	H
Pear	-0.5	-1 / +0.5	-1.5	3% CO2	60 / 150	H	H
Peas in Pod	0	0 / 1	-0.5	M	7 / 20	VL	M
Peppers	7	7 / 10	-0.5	M	20	L	L
Pineapple	8.5	7 / 10	-1	L	30	L	L
Plantain	12	12 / 13.5	-1	Max possible	24	L	H
Plants Growing	0	0 / 1.5		H		VL	H
Plum	-5	-0.5 / 0.5	-1	H	20 / 35	M	H
Pork	-1.5	-1.5 / 0		None	14		
Pork Salt Pork	4.5	-1 / +7		None	120		
Poultry	-1	-1.5 / +1.5		None	14		
Pumpkin	10	10 / 13	-0.5	L	60 / 90	L	L
Rhubarb	0	0 / 1	-0.5	L	15 / 30	VL	L
Salsify	0	0 / 1	-1	L		VL	L
Squash (Winter)	10	7 / 13	-0.5	L	60 / 90	L	L
Sweet Potato	13	13 / 16	-1	L	120	VL	L
Tangerine Orange (Satsuma, Clementine and Mandarins)	4.5	4.5/7.8	-1.5	1% CO2 or max possible	40	VL	M
<b>Tomato</b>							
Tomato Firm Ripe	7	7 / 10	-0.5	H	14	M	H
Tomato Green	13	10 / 16	-0.5	H	20	VL	H
<b>Yeast</b>							
Yeast Active	0	-0.5 / +1		None	14		
Yeast Dried	0	0 / 10		None			

## RECOMMENDED CONDITIONS FOR FROZEN PRODUCTS

Commodities	Carrying Temperature °C
Beef	-18
Lamb	-18
Pork	-18
Poultry	-18
Offal	-18
Fish, including fish products	-20 or lower
Quick Frozen Food, e.g. vegetables	-18 or lower
Ice Cream	-20
Cream	-20
Juice Concentrates	-20
Butter	-12 or lower