

Table 5 Density of Commodities Stored in Refrigerated Warehouses

Commodity	Type of Package	Outside Dimensions of Package, in.	Avg Gross Wt of Pkg., lb.	Avg Net Wt of Pkg., lb.	Avg Gross Wt Density, lb per Cu Ft	Avg Net Wt Density, lb per Cu Ft
Apples	Wood Basket	18 1/4 x 18 1/4 x 13 1/4	49	45	18.33	16.83
	Northwestern	19 1/4 x 11 x 12 1/4	50	42	33.1	33.6
	Fiber Tray Carton	20 1/4 x 12 1/4 x 13 1/4	46 3/4	43	23.85	21.94
	Fiber Master Carton	22 1/4 x 12 1/4 x 13	44 3/4	41	21.21	19.43
	Fiber Bulk	19 x 12 1/4 x 13	44 3/4	41	25.00	22.91
Beef	Fiber Carton	28 x 18 x 6	146	140	83.43	80.00
Boneless	Loose	—	—	—	—	—
Forces	Loose	—	—	—	—	—
Hinds	Loose	—	—	—	—	—
Celery	Wirebound Crates	20 1/4 x 16 x 9 3/4	60	55	32.79	30.05
	Fiber Carton	16 x 11 x 10	36	32	35.36	31.43
Cheese	Hoops	16 x 16 x 13	84	78	43.62	40.60
Cheese	Wood, Export	17 x 17 x 14	87	76	37.16	32.46
Cheese, Swiss	Wheels	32 1/2 x 32 1/2 x 7	—	171	—	39.96
Chili Peppers	Bags	45 x 21 x 26	234	229	16.46	16.11
Citrus Concentrates	Fiber Carton 48/6 os	13 x 8 3/4 x 7 1/4	27	26	54.69	52.66
Citrus Fruits	Box	12 1/2 x 13 1/4 x 26 1/4	77	69	31.55	28.27
Oranges	Bruce Box	13 x 11 x 26 1/4	88	83	40.51	38.21
California Oranges	Fiber Carton	16 3/4 x 10 1/4 x 10 1/4	40	37	40.00	37.00
Florida Oranges	Fiber Carton	19 1/4 x 12 1/4 x 8	45	41	41.28	—
Lemons	Fiber Carton	16 3/4 x 10 1/4 x 10 1/4	40	37	40.00	37.00
Grapefruit	Fiber Carton	19 1/4 x 12 1/4 x 8	40	38	36.70	34.86
Cocconut, Shredded	Bags	38 x 18 1/2 x 8	101	100	31.03	30.73
Cranberries	Fiber Carton	15 1/4 x 11 1/4 x 10 1/4	26	24	24.07	22.22
Cream	Tins	12 x 12 x 14	52 3/4	50	45.21	42.86
Dried Fruit	Wood Box	15 1/4 x 10 x 6 1/4	28 1/2	25	45.45	42.88
Dates	Fiber Carton	14 x 14 x 11	32	30	25.06	24.05
Raisins, prunes, figs, peaches	Fiber Carton	15 x 11 x 7	32	30	47.87	44.88
Eggs, Shell	Wood Cases	26 x 12 x 13	55	45	23.43	19.17
Eggs, Frozen	Cans	10 x 10 x 12 1/2	32	30	44.24	41.47
Frozen Fruits, Juices and Vegetables	24/12 os Carton	13 1/4 x 11 1/4 x 8 1/4	21	18	27.74	23.77
Apparagus	36/10 os Carton	12 1/4 x 11 x 8	25 1/4	22 1/4	40.06	35.34
Beans, Green	24/12 os Carton	13 x 11 1/4 x 8	20	18	31.30	28.17
Blueberries	24/10 os Carton	12 1/4 x 11 1/4 x 8 1/4	18 1/2	15	26.16	21.21
Broccoli	24/1 lb Carton	13 1/4 x 11 1/4 x 7 1/4	27	24	40.96	36.41
Peas	6/5 lb Carton	17 x 11 x 9 1/4	32	30	31.13	28.18
Peas	48/12 os Carton	21 1/4 x 8 1/4 x 12 1/4	33	36	28.74	27.23
Spinach	24/14 os Carton	12 1/4 x 11 x 8 1/4	24	21	35.47	31.04
Strawberries	30 lb Can	12 1/4 x 10 x 10	32	30	44.23	41.47
Strawberries	24/1 lb Carton	13 x 11 x 8	28	24	42.30	36.25
Strawberries	450 lb Barrel	35 x 25 x 25	—	450	—	35.55
Grapes, California	Wood Lug Box	6 1/4 x 15 x 18	31	28	32.39	29.16
Lamb, Boneless	Fiber Box	20 x 15 x 5	57	53	65.66	61.05
Lard (2/28 lb)	Wood Export Box	18 x 13 1/4 x 7 1/4	64	56	59.83	52.53
Lettuce, head	Fiber Carton	20 1/4 x 13 1/4 x 9 1/4	37 1/2	35	—	—
Lettuce, head	Fiber Carton	21 1/4 x 14 1/4 x 9 1/4	40	37 1/2	—	—
Milk, Condensed	Barrels	35 x 25 1/2 x 23 1/2	670	600	50.87	45.56
Nuts	Sacks	24 x 15 x 33	91 1/4	90	13.31	13.09
Almonds, in Shell	Cases	6 1/4 x 23 1/4 x 11	32	28	31.69	27.73
Almonds, Shelled	Sacks	25 x 11 x 31	103	100	20.88	20.27
English Walnuts, in Shell	Fiber Carton	14 x 14 x 10	27	25	23.80	22.04
English Walnuts, Shelled	Burlap Bag	35 x 10 x 16	127	125	29.19	28.58
Peanuts, Shelled	Burlap Bag	35 x 22 x 12	126 1/2	125	23.66	23.38
Pecans, in Shell	Fiber Carton	13 x 13 x 11	32	30	29.76	27.90
Pecans, Shelled	—	—	—	—	—	—
Peaches	3/4 Bushel Baskets	16 1/2 top dia	41	38	43.94	40.73
	1 1/2 Bushel Baskets	14 1/2 top dia	28	25	45.22	40.19
	Wood Lug Box	18 1/4 x 11 1/4 x 5 1/4	26	23	37.96	33.14
Pears	Wood Box	8 1/4 x 11 1/4 x 18	52	48	50.98	47.06
Pears, place pack	Fiber Carton	18 1/4 x 12 x 10	52	46	—	—
Pork	Bundles	23 1/4 x 10 1/4 x 7	57	57	57.02	57.02
Bundle Bellies	Wood Box	28 x 10 x 10	60	54	37.02	33.32
Loins (Regular)	Fiber Box	20 x 15 x 5	57	52	65.66	59.90
Loins (Boneless)	Sack	33 x 17 1/2 x 11	101	100	27.47	27.20
Potatoes	—	—	—	—	—	—

Table 5 Density of Commodities Stored in Refrigerated Warehouses (Concluded)

Commodity	Type of Package	Outside Dimensions of Package, in.	Avg Gross Wt of Pkg., lb.	Avg Net Wt of Pkg., lb.	Avg Gross Wt Density, lb per Cu Ft	Avg Net Wt Density, lb per Cu Ft
Poultry, Fresh (Eviscerated)	Wirebound Crate	24 x 10 x 7	65	60	27.53	25.40
Fryers, Whole, 24-30 to Pkg.	Wirebound Crate	17 1/4 x 10 x 12 1/4	54	50	42.06	38.94
Poultry, Frozen (Eviscerated)	Fiber Carton	22 x 16 x 4	32 1/4	31	39.89	38.05
Ducks, 6 to Pkg.	Fiber Carton	20 1/4 x 18 x 5 1/4	33 1/4	31	28.17	26.07
Fowl, 6 to Pkg.	Fiber Carton	17 1/4 x 15 1/4 x 4 1/4	30 1/4	28	45.39	41.67
Fryers, cut up, 12 to Pkg.	Fiber Carton	20 1/4 x 18 x 5 1/4	32 1/4	30	27.33	25.23
Roasters, 8 to Pkg.	Fiber Carton	—	—	—	—	—
Turkeys	Fiber Carton	21 x 17 x 6 1/4	30	27	22.54	20.12
8-10 lb, 6 to Pkg.	Fiber Carton	26 x 21 1/4 x 7	52 1/2	48	23.30	21.20
6-10 lb, 6 to Pkg.	Fiber Carton	26 1/4 x 16 x 7 1/4	50	46	27.17	25.00
10-13 lb, 4 to Pkg.	Fiber Carton	29 x 18 1/4 x 9	67 1/2	62	24.16	22.19
13-16 lb, 4 to Pkg.	Fiber Carton	17 x 16 x 9	39	36	27.72	25.42
16-20 lb, 2 to Pkg.	Fiber Carton	19 x 16 1/4 x 9 1/4	47 1/4	44	27.57	25.54
20-24 lb, 2 to Pkg.	Fiber Carton	—	—	—	—	—
Tomatoes	Fiber Carton	19 x 10 7/8 x 10 1/4	43	40	33.33	31.01
Florida	Wirebound Crate	18 1/4 x 11 1/4 x 11 1/4	64	60	41.29	38.71
California	Wood Lug Box	17 1/4 x 14 x 7 1/4	34	30	30.94	27.30
Texas	Wood Lug Box	17 1/4 x 14 x 6 1/4	34	30	36.17	31.91
Veal (Boneless)	Fiber Carton	20 x 15 x 5	57	53	65.66	61.05

Adapted from the table, Density of Commodities Carried in Cold Storage Warehouses, courtesy of the Missouri Valley Chapter of the National Association of Refrigerated Warehouses, and from other sources.

humidity favor loss of viability. Vegetable seeds should remain viable for 1 to 10 years, depending upon the variety. However, they are usually not stored for over one year. If it is impossible to keep humidity low enough, seeds should be stored in moisture-proof containers.

DENSITY OF COMMODITIES COMMONLY STORED

Table 5 is a compilation of data giving the type of containers used for storage, their dimensions, gross weights, net weights and density per cu ft.

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