

Nickel in Foods: Summary tables, unweighted, September 2025

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Dairy products and substitutes					
Whipped cream, 15 g	5	0.05	0.03	0.02	0.08
Cream substitute, soy, 15 g*	1	0.08	0.00	0.08	0.08
Cheese substitutes, coconut oil, 30 g	4	0.23	0.22	0.04	0.59
Sour cream, 24 g	51	0.37	0.12	0.00	0.91
Cream, 15 g	113	0.29	0.30	0.02	2.06
Cream cheese, 30 g	67	0.51	0.27	0.18	1.71
Cream, non-dairy, 15 g	51	0.43	0.58	0.09	3.47
Evaporated milk, 15 g	15	0.61	0.60	0.03	2.25
Cheeses, 30 g	358	0.98	1.42	0.09	10.80
Quark, 100 g	20	1.56	0.74	0.46	2.70
Crème fraîche, 55 g	9	1.25	1.77	0.21	6.00
Cream substitute, oat, 15 g	3	1.69	1.17	0.04	2.57
Yogurt drink, 188 g	17	2.19	1.89	0.43	6.96
Processed cheese, 30 g	82	2.25	2.10	0.45	12.27
Cultured milk, 188 g	17	2.64	1.43	0.72	4.32
Cottage cheese, 125 g	77	2.39	1.97	0.39	12.25
Milk, 250 g	352	3.06	2.83	0.09	21.50
Yogurt, 175 g	139	4.01	3.83	0.01	29.75
Milk powder, 25 g	9	4.74	8.98	0.31	29.75
Buttermilk, 250 g	14	6.05	7.63	0.37	31.25
Cheese substitutes, oat, 30 g*	1	8.55	0.00	8.55	8.55
Yogurt drink substitute, coconut, 188 g	19	9.21	4.21	0.26	22.39
Almond beverage, 250 g	11	10.93	8.24	2.50	28.25
Paneer/khoa/halloumi, 80 g	5	10.94	9.38	5.36	29.60
Rice beverage, 250 g	15	13.80	15.42	1.50	65.75
Cheese substitutes, soy, 30 g*	1	17.73	0.00	17.73	17.73
Yogurt substitute, coconut, 175 g	28	18.87	26.00	0.14	122.58
Peanut beverage, 250 g*	1	23.23	0.00	23.23	23.23
Coconut beverage, 250 g	8	24.91	35.01	0.23	102.50
Oat beverage, 250 g	10	35.45	14.76	13.15	61.00
Yogurt substitute, oat, 175 g*	1	36.23	0.00	36.23	36.23
Soy beverage, 250 g	43	48.51	30.78	3.20	130.00
Cashew beverage, 250 g	7	69.93	37.93	18.58	109.25
Yogurt substitute, soy, 175 g	8	107.95	47.60	31.50	215.25

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Grain products and bakery					
Shirataki noodles, cooked, 215 g*	1	0.12	0.00	0.12	0.12
Pasta, bean-based, cooked, 215 g*	2	0.12	0.00	0.12	0.12
Rice paper, 15 g*	1	0.22	0.00	0.22	0.22
Pastry doughs, 21 g	13	1.07	0.52	0.42	1.81
Yeast dough, 55 g	5	1.93	1.21	1.17	4.35
Crackers, butter-type, 30 g	51	2.11	0.85	0.30	4.20
Crackers, saltine or cream, 30 g	51	2.31	0.58	0.24	3.36
Baguette, 75 g	2	2.67	0.04	2.63	2.72
Soft pretzel, 55 g	5	2.64	0.81	1.87	4.02
Hot cereal, rye, cooked, 194 g	10	3.82	0.32	3.49	4.58
Bread, barley, 75 g	3	4.20	0.33	3.79	4.58
Breadcrumbs, 30 g	4	3.77	1.45	1.87	5.70
Rusk, plain or fruited, 30 g	7	3.69	1.65	1.59	6.00
Cold cereal, corn, 30 g	75	3.41	2.22	0.01	12.60
Crackers, 30 g	30	3.36	3.06	0.96	14.10
Hot cereal, rye, dry, 40 g*	1	4.00	0.00	4.00	4.00
English muffin, 55 g	75	4.87	1.25	2.31	8.25
Crackers, seeded, 30 g	2	4.63	2.27	2.36	6.90
Glass noodles, cooked, 215 g	2	3.93	3.81	0.12	7.74
Simple pastries, 55 g	9	4.59	2.56	1.10	7.32

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Hot cereal, wheat, cooked, 194 g	88	4.69	2.92	1.03	13.77
Rolls and biscuits, 55 g	137	4.99	2.47	1.10	15.68
Cold cereal, rice, 30 g	55	5.38	2.36	0.14	14.40
Pasta, rice or corn, cooked, 215 g	7	4.76	4.54	0.12	14.77
Cold cereal, wheat bran with raisins, 30 g	50	6.07	1.97	3.03	11.43
Cold cereal, wheat bran, 30 g	72	5.27	3.77	1.68	22.08
Bread, white, 75 g	130	6.27	2.66	1.50	15.90
Bagel, 85 g	76	6.81	1.62	4.08	13.60
Crispbread, 30 g	17	6.12	4.07	1.99	15.81
Flatbread, 55 g	110	6.53	3.28	1.45	15.40
Bread, rye, 75 g	110	7.27	3.53	1.84	17.18
Hot cereal, corn, cooked, 194 g	52	7.34	3.44	1.55	16.68
Pasta, white wheat, cooked, 215 g	144	7.12	4.50	0.14	27.95
Rolls, seeded, 55 g	6	7.08	4.95	2.06	15.13
Hot cereal, wheat, dry, 40 g	2	7.44	4.56	2.88	12.00
Rice cakes, 15 g	10	7.86	4.43	3.45	18.60
Hot cereal, barley, cooked, 140 g	19	7.19	7.58	3.08	26.04
Blood bread, 75 g*	1	9.75	0.00	9.75	9.75
Hot cereal, rice, dry, 40 g	3	9.87	5.49	4.00	17.20
Pasta, white wheat, dry, 85 g	13	9.35	6.91	1.02	30.09
Cold cereals, junk food, 30 g	52	12.26	4.43	2.70	22.65
Bread, whole wheat, 75 g	142	13.54	4.41	1.16	30.75
Pasta, whole wheat, cooked, 215 g	8	11.77	8.86	0.15	24.96
Hot cereal, rice, cooked, 194 g	18	13.72	5.52	2.29	17.75
Pasta, rice or corn, dry, 85 g*	1	12.33	0.00	12.33	12.33
Potato dumpling/gnocchi, cooked, 215 g	2	13.43	7.41	6.02	20.83
Pasta, whole wheat, dry, 85 g	4	15.87	8.95	3.15	25.50
Bread, gluten-free, 75 g	5	15.38	11.65	0.72	30.75
Bread, fruited, 75 g	8	16.57	10.21	5.03	37.95
Rolls, multigrain, 55 g	3	16.69	10.76	3.81	30.14
Bread, multigrain, 75 g	38	18.25	15.86	2.46	101.25
Bread, seeded, 75 g	50	29.13	17.29	4.66	75.75
Cold cereal, other grains, 30 g	7	24.95	32.66	1.94	100.80
Bread, spelt, 75 g	4	32.72	8.91	25.50	47.63
Bread, oat, 75 g	7	31.43	12.66	9.53	45.90
Hot cereal, multigrain, cooked, 194 g	17	31.39	23.95	12.34	116.40
Cold cereal, granola/muesli, 55 g	73	50.90	17.52	9.35	126.50
Cold cereal, oat ring, 30 g	55	64.62	20.24	13.89	112.41
Hot cereal, oat, cooked, 194 g	83	78.07	27.36	12.22	189.54
Hot cereal, millet, cooked, 194 g	9	90.75	9.12	77.60	97.39
Crackers, buckwheat, 30 g*	1	124.20	0.00	124.20	124.20
Hot cereal, buckwheat, cooked, 140 g	12	150.54	43.22	31.22	211.40
Pasta, bean-based, dry, 85 g*	1	202.30	0.00	202.30	202.30
Pasta, buckwheat, dry, 85 g*	1	332.35	0.00	332.35	332.35
Pasta, buckwheat, cooked, 215 g*	1	395.60	0.00	395.60	395.60

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Whole grains, flours and starches					
Rye grains, sprouted, 140 g*	1	0.06	0.00	0.06	0.06
Rice, red, cooked, 140 g*	1	0.08	0.00	0.08	0.08
Rice, wild, cooked, 140 g*	1	0.08	0.00	0.08	0.08
Starch, wheat, 10 g*	1	0.37	0.00	0.37	0.37
Starch, potato, 10 g*	2	0.40	0.00	0.40	0.40
Flour, potato, 30 g*	1	0.90	0.00	0.90	0.90
Starch, rice, 10 g*	1	1.10	0.00	1.10	1.10
Semolina, 45 g	5	2.24	0.75	1.67	3.60
Flour, white, 30 g	47	1.96	1.44	0.60	7.50
Starch, corn, 10 g*	1	1.50	0.00	1.50	1.50
Flour, rye, 30 g	17	2.76	1.02	1.32	4.56
Wheat gluten, 15 g*	1	1.88	0.00	1.88	1.88

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Rye kernels, whole/cracked, 45 g	3	3.50	1.17	2.34	5.10
Flour, rye, whole, 30 g	4	3.50	1.81	2.04	6.48
Flour, barley, 30 g*	2	3.00	0.00	3.00	3.00
Flour, spelt, 30 g*	1	4.01	0.00	4.01	4.01
Starch, cassava, 10 g*	1	4.70	0.00	4.70	4.70
Flour, whole wheat, 30 g	8	7.53	3.37	2.91	12.00
Rice, white, cooked, 140 g	101	7.04	4.44	1.12	23.80
Flour, spelt, whole, 30 g	2	8.19	3.69	4.50	11.88
Rice, black, raw, 45 g	2	7.88	4.73	3.15	12.60
Wheat bran, 15 g	12	9.88	5.14	3.00	21.00
Wheat kernels/bulgur, 45 g	20	9.38	7.84	1.71	36.90
Wheat germ, 15 g	6	10.73	2.24	7.50	13.80
Spelt, raw, 45 g	3	11.67	1.87	10.35	14.32
Rice, white, raw, 45 g	25	11.64	4.23	1.76	18.90
Flour, cassava, 30 g	3	10.89	5.77	3.87	18.00
Rice, brown, cooked, 140 g	36	11.41	5.67	1.25	25.20
Quinoa, cooked, 140 g	5	10.46	8.96	0.10	22.40
Rice, brown, raw, 45 g	11	13.40	3.45	8.10	17.10
Wheat kernels/bulgur, cooked, 140 g*	1	14.00	0.00	14.00	14.00
Barley, raw, 45 g	6	13.05	8.06	4.50	23.85
Cornmeal, 30 g	4	14.40	9.87	8.70	31.50
Flour, teff, 30 g	2	18.45	2.25	16.20	20.70
Oat bran, 15 g*	2	18.00	0.00	18.00	18.00
Flour, rice, 30 g	7	16.46	12.99	3.21	38.16
Flour, almond, 15 g	10	27.69	3.89	19.50	33.90
Flour, sea buckthorn, 15 g*	1	21.00	0.00	21.00	21.00
Flour, coconut, 15 g*	1	22.50	0.00	22.50	22.50
Pumpkin seed flour, 15 g*	1	24.00	0.00	24.00	24.00
Sorghum, cooked, 140 g*	1	24.22	0.00	24.22	24.22
Sorghum, dry, 45 g*	2	26.55	0.00	26.55	26.55
Flour, chickpea, 15 g	3	31.68	21.77	13.28	62.25
Amaranth, raw, 45 g	5	33.70	26.58	7.38	72.00
Quinoa, raw, 45 g	8	35.26	31.03	1.80	108.00
Flour, millet, 30 g*	1	36.00	0.00	36.00	36.00
Millet, raw, 40 g	8	47.90	21.16	22.40	80.00
Flour, buckwheat, 30 g	5	46.83	40.19	17.70	126.00
Oats, raw, 40 g	13	53.62	27.93	12.40	120.00
Flour, oat, 30 g*	2	50.40	0.00	50.40	50.40
Flour, soy, 15 g	7	64.75	28.47	42.00	126.54
Buckwheat, raw, 45 g	11	99.26	71.71	10.04	243.00
Rice, wild, raw, 45 g*	1	148.50	0.00	148.50	148.50
Flour, hemp, 15 g	2	146.24	94.59	51.65	240.83
Amaranth, black, raw, 45 g*	1	155.25	0.00	155.25	155.25
Flour, pea, 15 g	3	190.40	227.28	6.60	510.66

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Fruits - Berries					
Elderberries, 80 g	3	3.91	0.12	3.82	4.08
Mulberry, 80 g*	1	3.84	0.00	3.84	3.84
Pomegranate, 80 g*	2	4.00	0.00	4.00	4.00
Cranberries, 55 g	6	4.40	2.66	2.75	9.90
Gooseberries, 80 g	5	4.44	2.91	2.00	8.00
Blueberries, 80 g	58	5.65	3.19	1.60	19.04
Lingonberries, 80 g	16	5.04	6.07	1.76	28.00
Currants, 80 g	23	6.61	2.93	0.80	13.60
Strawberries, 140 g	117	6.63	4.82	0.70	35.28
Rowanberries, 80 g*	3	8.00	0.00	8.00	8.00
Currants, canned, 80 g*	1	10.40	0.00	10.40	10.40
Cloudberries, 80 g	3	15.47	0.75	14.40	16.00
Blackberries, 80 g	3	19.73	2.64	16.00	21.60

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Raspberries, 80 g	31	20.27	17.57	0.64	72.00
Rosehips, 80 g*	2	32.00	0.00	32.00	32.00
Strawberries, canned, 140 g*	1	34.02	0.00	34.02	34.02
Goji berries, 80 g*	1	48.00	0.00	48.00	48.00

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Fruits - Citrus					
Grapefruit, 140 g	84	4.11	4.30	0.70	28.00
Lemon / Lime, 55 g	15	4.59	3.32	0.55	12.10
Citrus fruits, unspecified, 140 g	22	6.09	2.97	2.06	13.44
Orange, 140 g	92	5.75	5.16	1.12	30.80
Pomelo, 140 g	3	6.49	4.49	2.38	12.74
Tangerine or mandarin orange, 140 g	11	8.65	7.11	2.80	23.52
Citrus fruits, canned, 140 g	4	12.13	12.50	3.16	33.60

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Fruits - Other					
Breadfruit, 140 g	3	2.05	0.54	1.54	2.80
Cherries, 140 g	24	3.50	1.45	1.82	7.00
Apple, 140 g	143	3.01	3.12	0.31	18.34
Grape, 140 g	120	4.24	6.35	0.63	38.22
Mango, 140 g	19	5.96	4.49	1.14	15.40
Papaya, 140 g	11	6.89	4.61	1.86	15.96
Jack fruit, 140 g	2	9.10	2.10	7.00	11.20
Kiwi, 140 g	29	6.86	7.20	0.92	28.00
Banana, 140 g	113	7.32	6.77	1.12	37.80
Phalsa, 140 g*	1	8.40	0.00	8.40	8.40
Pear, 140 g	176	8.26	5.77	1.05	33.60
Watermelon, 150 g	85	7.94	6.69	1.20	37.35
Apple, canned, 140 g*	1	9.80	0.00	9.80	9.80
Pineapple, 140 g	41	8.60	7.54	2.80	23.80
Peach or nectarine, 140 g	155	10.34	4.42	1.12	30.80
Jujube, 140 g	2	12.85	1.65	11.20	14.49
Melons, 150 g	106	11.80	8.14	1.20	42.90
Guava, 140 g	4	13.26	6.68	2.62	19.60
Karonda fruit, 140 g*	1	14.00	0.00	14.00	14.00
Dragon fruit, 140 g	2	14.00	8.40	5.60	22.40
Dates, fresh, 140 g	2	18.55	2.45	16.10	21.00
Pineapple, canned, 140 g	71	15.80	9.59	1.82	64.12
Apricot, canned, 140 g	51	15.91	11.24	1.12	85.54
Fig, 140 g*	1	18.20	0.00	18.20	18.20
Lychee, 140 g	3	18.44	9.84	9.80	32.20
Persimmon, 140 g	4	29.96	1.14	28.00	30.80
Plum, 140 g	16	20.18	21.10	3.36	72.80
Jambu fruit, 140 g*	1	22.40	0.00	22.40	22.40
Apricot, 140 g*	2	23.80	0.00	23.80	23.80
Lychee, canned, 140 g*	1	25.62	0.00	25.62	25.62
Passionfruit, 140 g*	1	32.20	0.00	32.20	32.20
Star fruit, 140 g*	1	39.20	0.00	39.20	39.20
Sapota, 140 g*	1	40.60	0.00	40.60	40.60
Bael fruit, 140 g	2	46.90	11.90	35.00	58.80
Avocado, 140 g	85	42.44	39.82	9.24	290.92
Coconut, 140 g	4	100.10	54.41	35.00	180.60

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Vegetables - Root					
Onion, 85 g	92	3.06	2.33	0.68	16.15
Carrot, 85 g	103	3.79	2.36	0.43	12.92
Radish, 85 g	13	4.26	1.75	1.70	7.65

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Celeriac, 85 g	5	5.00	0.71	4.42	5.95
Salsify, 85 g*	2	4.08	0.00	4.08	4.08
Rutabaga, 85 g	7	4.81	1.21	3.32	6.63
Kohlrabi, 85 g*	2	5.10	0.00	5.10	5.10
Turnip, 85 g	4	5.40	3.76	0.85	11.31
Parsley root, 85 g	2	9.39	0.04	9.35	9.44
Water chestnut, 85 g*	1	9.35	0.00	9.35	9.35
Beets, 85 g	16	8.46	7.19	1.40	22.95
Potato, 110 g	84	8.17	9.50	0.44	44.00
Jerusalem artichoke, 85 g*	1	12.75	0.00	12.75	12.75
Sweet potato, 110 g	9	12.55	7.67	3.30	28.60
Lotus root, 85 g	2	15.17	4.38	10.80	19.55
Yam, 110 g	4	17.60	4.47	12.10	22.00
Parsnip, 85 g	9	19.72	7.28	9.35	34.43
Arracacha, 110 g*	1	26.40	0.00	26.40	26.40
Fennel, 85 g*	2	28.90	0.00	28.90	28.90
Taro root, 110 g*	1	38.50	0.00	38.50	38.50
Cassava, 110 g	3	32.63	25.99	12.10	69.30

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Vegetables - Leafy					
Bitter leaf, 85 g*	1	1.28	0.00	1.28	1.28
Celtuse/Chinese lettuce, 85 g*	1	3.66	0.00	3.66	3.66
Cabbage, 85 g	59	4.80	4.29	0.85	20.40
Jews mallow leaves, 85 g*	1	4.25	0.00	4.25	4.25
Lettuces, 85 g	124	5.83	4.70	0.17	28.90
Bathua leaves, 85 g*	1	6.80	0.00	6.80	6.80
Mustard leaves, 85 g	2	9.48	3.27	6.21	12.75
Head/iceberg lettuce, 85 g	83	9.01	6.86	0.29	28.05
Spinach, 85 g	45	8.94	9.99	1.70	51.00
Kale, 85 g	6	11.79	1.66	8.67	13.60
Cauliflower leaves, 85 g*	1	11.05	0.00	11.05	11.05
Chard, 85 g	4	11.88	6.25	3.32	17.85
Pea shoots, 85 g*	1	13.01	0.00	13.01	13.01
Bok choy, 85 g	2	13.22	7.18	6.04	20.40
Kohlrabi leaves, 85 g*	1	15.30	0.00	15.30	15.30
Plumed cockscomb leaves, 85 g*	1	15.30	0.00	15.30	15.30
Gboma leaves, 85 g*	1	15.56	0.00	15.56	15.56
Water leaf, 85 g*	1	16.15	0.00	16.15	16.15
Beet greens, 85 g*	1	17.00	0.00	17.00	17.00
Rumex leaves, 85 g*	1	17.00	0.00	17.00	17.00
Amaranth leaves, 85 g	5	19.89	3.86	14.45	25.50
Watercress, 85 g	3	17.51	8.80	7.48	28.90
Alfalfa sprouts, 85 g	3	21.76	4.00	17.68	27.20
Drumstick leaves, 85 g*	1	20.40	0.00	20.40	20.40
Fluted pumpkin leaves, 85 g*	1	20.40	0.00	20.40	20.40
Radish leaves, 85 g*	1	21.25	0.00	21.25	21.25
Taro leaves, 85 g*	1	22.10	0.00	22.10	22.10
Pumpkin leaves, 85 g*	1	22.95	0.00	22.95	22.95
Arugula/rocket, 85 g*	1	24.65	0.00	24.65	24.65
Brussels sprouts tops, 85 g*	1	24.65	0.00	24.65	24.65
Collard greens, 85 g*	1	25.50	0.00	25.50	25.50
Leaf chicory (endive or radicchio), 85 g	5	25.08	13.87	6.89	48.79
Seaweed, 15 g	19	20.66	22.72	1.50	102.90
Fenugreek leaves, 85 g*	1	28.90	0.00	28.90	28.90
Ponnaganni (leaves), 85 g*	1	34.85	0.00	34.85	34.85
Garden cress, 85 g*	2	35.70	0.00	35.70	35.70
Betel leaves, 85 g	2	39.53	2.98	36.55	42.50
Malabar spinach, 85 g*	1	37.40	0.00	37.40	37.40
Gogu leaves, 85 g*	2	42.50	0.00	42.50	42.50

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Nettle leaves, 85 g*	1	42.50	0.00	42.50	42.50
Agathi leaves, 85 g*	1	57.80	0.00	57.80	57.80

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Vegetables - Other					
Olives, 15 g	56	1.31	0.84	0.15	5.55
Pickles, 30 g	56	1.16	1.16	0.17	6.75
Mushrooms, 85 g	136	2.39	2.36	0.26	11.90
Celery, 85 g	87	2.80	2.20	0.43	16.15
Tomato, 85 g	107	2.44	3.03	0.43	20.49
Cucumber, 85 g	109	2.84	3.10	0.43	21.25
Plantain, stem, 85 g*	1	2.55	0.00	2.55	2.55
Wax gourd, 85 g*	1	3.06	0.00	3.06	3.06
Garlic scapes, 40 g*	1	4.00	0.00	4.00	4.00
Plantain, green, 85 g*	1	4.25	0.00	4.25	4.25
Eggplant, 85 g	9	4.37	4.10	0.34	11.05
Leek, 85 g	8	4.74	3.38	1.40	11.05
Tomato, sun-dried, 30 g	2	5.13	4.17	0.96	9.30
Ivy gourd, 85 g	2	6.80	1.70	5.10	8.50
Cauliflower, 85 g	18	6.08	5.06	0.94	20.40
Ash gourd, 85 g*	1	6.80	0.00	6.80	6.80
Bamboo shoot, 85 g*	1	6.80	0.00	6.80	6.80
Plantain, flower, 85 g*	1	7.65	0.00	7.65	7.65
Taro stem, 85 g	2	8.93	2.13	6.80	11.05
Spring onion, 40 g	4	7.58	4.89	1.60	12.40
Bottle gourd, 85 g	3	9.92	2.23	6.80	11.90
Peppers, 85 g	106	6.99	8.31	0.60	49.98
Drumstick, 85 g*	1	9.35	0.00	9.35	9.35
Broccoli, 85 g	9	9.69	5.52	2.30	22.10
Corn, 85 g	14	7.89	9.31	2.72	39.95
Zucchini, 85 g	5	9.82	8.74	0.64	21.25
Ridge gourd, 85 g	2	11.05	0.85	10.20	11.90
Snake gourd, 85 g	3	10.20	3.47	5.95	14.45
Rhubarb, 140 g	7	11.11	4.77	5.04	21.00
Pointed gourd, 85 g*	1	10.20	0.00	10.20	10.20
Tinda gourd, 85 g*	1	10.20	0.00	10.20	10.20
Squash, 85 g	3	12.64	6.21	3.91	17.85
Snow pea, 85 g*	1	12.75	0.00	12.75	12.75
Pumpkin, 85 g	5	14.16	7.96	3.91	23.80
Brussels sprouts, 85 g	11	12.45	11.90	2.38	47.60
Beans, runner, 85 g	2	17.21	5.74	11.48	22.95
Bitter melon, 85 g	4	18.28	12.57	9.35	39.95
Green beans, 85 g	13	19.14	11.65	3.52	47.60
Asparagus, 85 g	6	25.25	7.99	15.30	35.70
Snap peas, 85 g*	1	22.10	0.00	22.10	22.10
Okra, 85 g	2	25.50	15.30	10.20	40.80
Bean sprouts, 65 g	4	29.40	17.37	11.05	56.94
Peas, dried, 35 g	6	32.81	20.44	4.52	59.50
Chayote, 85 g	2	34.85	28.05	6.80	62.90
Peas, 85 g	15	34.54	41.79	4.82	186.15

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Vegetables - Prepared					
Bean sprouts, cooked, 65 g*	1	0.04	0.00	0.04	0.04
Mushroom, composite, 107.5 g	15	1.09	0.90	0.17	3.76
Kohlrabi, composite, 107.5 g	8	2.55	0.69	2.15	4.30
Tomato, composite, 107.5 g	19	2.05	1.83	0.37	8.06
Onion, composite, 107.5 g	4	2.80	0.71	2.15	3.87
Potato, instant, 17 g	4	3.19	0.93	1.70	4.25
Turnip, cooked, 130 g	49	2.84	2.19	1.04	10.01

Nickel in Foods: Summary tables, unweighted, September 2025

Celery, composite, 107.5 g	15	3.39	1.71	0.24	7.10
Onions, pickled, 130 g*	1	2.60	0.00	2.60	2.60
Cabbage, cooked, 130 g	65	3.62	2.88	0.65	14.30
Leek, cooked, 130 g	4	4.88	0.50	4.03	5.33
Fennel, composite, 107.5 g	8	4.46	1.36	2.80	7.10
Brussels sprouts, composite, 107.5 g*	1	3.23	0.00	3.23	3.23
Tomato, cooked, 107.5 g*	1	3.78	0.00	3.78	3.78
Eggplant, cooked, 130 g	81	3.05	5.44	0.57	46.80
Cabbage, canned, 130 g*	2	3.90	0.00	3.90	3.90
Collard greens, cooked, 130 g	74	4.61	2.58	1.04	11.44
Pumpkin, marinated, 130 g	2	5.59	0.91	4.68	6.50
Corn, cooked, 130 g	97	4.59	3.12	1.04	20.80
Beets, canned, 130 g	50	4.98	3.33	1.04	15.73
Cabbage, sauerkraut, 85 g	5	5.83	1.90	4.25	8.38
Carrot, cooked, 130 g	53	5.66	2.91	0.78	14.82
Nettles, cooked, 130 g*	1	5.59	0.00	5.59	5.59
Wax gourd, cooked, 130 g*	1	5.72	0.00	5.72	5.72
Potato, instant, prepared, 140 g*	1	5.73	0.00	5.73	5.73
Onion, cooked, 130 g	21	5.15	5.06	0.97	24.96
Okra, cooked, 130 g	48	6.08	3.66	1.04	17.55
Pumpkin, canned, 130 g*	1	6.50	0.00	6.50	6.50
Pumpkin, composite, 107.5 g	4	7.77	1.55	6.24	10.32
Salsify, cooked, 130 g*	1	6.93	0.00	6.93	6.93
Spinach, cooked, 130 g	54	7.16	3.52	1.04	19.11
Water spinach, cooked, 130 g*	1	7.02	0.00	7.02	7.02
Corn, canned, 130 g	56	5.79	7.31	1.04	53.95
Peppers, composite, 107.5 g	5	6.84	5.37	0.65	16.13
Cauliflower, cooked, 130 g	95	7.41	5.91	0.78	41.60
Spinach, composite, 107.5 g	12	8.02	4.98	2.78	22.68
Potato, cooked, 167 g	132	7.59	6.66	0.67	36.74
Broccoli, cooked, 130 g	93	8.44	5.05	1.04	22.10
Carrot, composite, 107.5 g	21	6.70	10.35	0.59	40.31
Zucchini, cooked, 130 g	87	7.84	8.20	1.04	58.50
Beets, cooked, 130 g	20	8.87	7.31	2.96	30.55
Potato, cooked with skin, 167 g	89	9.35	6.67	1.34	48.93
Brussels sprouts, cooked, 130 g	91	9.60	11.35	1.04	67.21
Pumpkin, cooked, 130 g	3	11.18	4.76	6.58	17.73
Broccoli, composite, 107.5 g	17	10.44	6.26	1.67	25.69
Potato, french fried, 70 g	118	11.63	5.78	3.22	32.76
Green beans, canned, 130 g	52	11.94	7.10	1.04	41.73
Cauliflower, composite, 107.5 g	17	11.08	9.78	1.08	35.26
Kale, cooked, 130 g	11	11.84	9.73	2.60	39.00
Squash, cooked, 130 g	74	11.66	11.07	1.04	62.40
Cabbage, composite, 107.5 g	18	10.57	13.67	1.17	49.99
Mushroom, cooked, 130 g	21	12.65	9.75	0.55	27.82
Peppers, cooked, 130 g*	1	13.00	0.00	13.00	13.00
Plantain, cooked, 167 g	3	15.81	5.27	11.36	23.21
Seaweed, cooked, 15 g	5	14.24	9.13	2.18	29.55
Sweet potato, canned, 167 g	48	15.21	8.47	1.67	43.42
Hairy gourd, cooked, 130 g*	1	15.21	0.00	15.21	15.21
Mushroom, canned, 130 g	5	15.65	9.36	2.60	26.00
Asparagus, canned, 130 g	4	15.57	9.54	6.37	28.60
Sponge gourd, cooked, 130 g*	1	15.60	0.00	15.60	15.60
Asparagus, cooked, 130 g	93	15.81	9.84	1.04	46.15
Sweet potato, cooked, 167 g	33	15.49	13.24	0.00	51.77
Yam, cooked, 167 g*	1	18.04	0.00	18.04	18.04
Mushrooms, marinated, 130 g*	1	19.50	0.00	19.50	19.50
Green beans, cooked, 130 g	88	17.97	14.49	2.60	96.20
Rutabaga, cooked, 130 g	17	14.42	23.35	0.74	83.20
Spinach, canned, 130 g	2	20.28	14.82	5.46	35.10

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Taro, cooked, 167 g	2	28.06	1.34	26.72	29.39
Jerusalem artichoke, cooked, 130 g*	1	20.54	0.00	20.54	20.54
En choy (chinese spinach), cooked, 130 g*	1	20.80	0.00	20.80	20.80
Tomato, canned, 130 g	8	21.29	21.66	0.42	63.70
Peas, cooked, 130 g	82	28.40	15.07	2.60	100.75
Parsnip, cooked, 130 g*	1	27.43	0.00	27.43	27.43
Green beans, canned and cooked composite, 130 g	16	26.18	20.23	5.98	87.75
Gai lan (chinese kale/broccoli), cooked, 130 g*	1	31.20	0.00	31.20	31.20
Peas, canned, 130 g	5	33.77	18.83	20.15	70.72
Snap peas, cooked, 130 g*	1	36.79	0.00	36.79	36.79
Fennel, cooked, 130 g*	1	51.35	0.00	51.35	51.35
Cassava, cooked, 167 g	2	65.05	27.47	37.58	92.52

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Meat, poultry, eggs and substitutes					
Venison, 125 g	29	1.90	0.36	1.06	2.50
Rabbit, 125 g	4	1.47	1.46	0.63	4.00
Sausage, 75 g	24	2.04	1.02	0.46	4.61
Beef, 125 g	73	1.91	2.25	0.19	12.50
Moose, raw, 125 g*	1	1.25	0.00	1.25	1.25
Egg, 100 g	41	2.09	2.58	0.12	9.20
Lamb, 125 g	23	2.93	1.83	2.06	10.63
Pork, 125 g	55	3.02	2.09	0.30	10.63
Ground beef and/or pork, 125 g	19	2.84	2.88	0.88	13.50
Seitan, 100 g	4	3.35	3.28	0.35	8.40
Chicken, turkey and other poultry, 125 g	66	3.43	3.42	0.13	22.50
Wild boar, 125 g	8	4.92	3.11	2.06	12.50
Veal, 125 g	14	4.43	4.54	1.13	12.50
Soya sausage, 75 g	5	4.78	5.66	0.06	12.38
Black pudding, 75 g	6	5.91	3.59	0.83	10.28
Mutton, 125 g	9	6.30	4.73	1.25	12.50
Bacon, 54 g	9	4.84	11.12	0.43	36.18
Organ meats, 125 g	105	7.98	8.48	0.50	57.50
Goat, 125 g*	3	12.50	0.00	12.50	12.50
Horse, 125 g	3	10.42	11.20	2.50	26.25
Mithun, 125 g	3	45.83	21.25	25.00	75.00
Fermented bean products, 85 g*	1	75.65	0.00	75.65	75.65
TVP (texturized vegetable protein), 100 g	3	251.33	195.24	100.00	527.00

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Meat, poultry and eggs - Prepared					
Moose, cooked, 100 g*	1	0.60	0.00	0.60	0.60
Rabbit, cooked, 100 g*	1	0.60	0.00	0.60	0.60
Bacon, cooked, 15 g	82	0.71	0.76	0.12	4.16
Venison, cooked, 100 g	7	1.65	0.91	0.60	2.84
Dried meats, 30 g	5	1.71	0.88	0.25	2.72
Lunch meat, 55 g	363	1.66	1.72	0.36	13.20
Lunch meat, canned, 55 g	21	2.07	1.00	0.52	4.40
Black pudding, cooked, 55 g	5	2.64	3.12	0.71	8.86
Meat jellies, 120 g	4	3.53	1.35	1.99	5.52
Organ meats, cured, 125 g*	2	1.25	0.00	1.25	1.25
Egg powder, 20 g	3	4.47	1.59	2.80	6.60
Horse, cooked, 100 g*	1	2.68	0.00	2.68	2.68
Egg, cooked, 100 g	176	2.68	7.22	0.35	63.30
Sausage, cooked, 55 g	238	3.52	5.85	0.32	49.17
Veal, cooked, 100 g	28	3.87	6.15	0.67	27.40
Chicken, turkey and other poultry, cooked, 100 g	486	4.66	5.75	0.10	50.00
Organ meats, cooked, 100 g	127	4.15	9.67	0.64	76.50
Pate, 55 g	49	4.98	8.33	0.45	32.45
Wild boar, cooked, 100 g	2	7.30	5.20	2.10	12.50

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Lamb, cooked, 100 g	97	6.92	13.06	0.70	84.40
Beef, cooked, 100 g	192	6.92	17.37	0.57	115.20
Pork, cooked, 100 g	199	6.50	21.46	0.36	178.30
Mutton, cooked, 100 g	17	12.86	14.47	2.00	60.00
Pork, cured, cooked, 55 g	93	14.77	48.91	0.44	383.08
Ground beef and/or pork, cooked, 100 g	123	18.50	48.14	0.74	308.20

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Fish and seafood					
Roe substitute, seaweed, 15 g*	1	0.48	0.00	0.48	0.48
Fish, roe, 15 g	10	0.54	0.63	0.08	2.40
Lobster, 125 g	4	7.00	1.00	5.88	8.38
Fish, 125 g	244	6.39	6.71	0.23	41.25
Eel, 125 g	7	7.99	7.55	0.21	21.75
Squid or octopus, 125 g	8	8.78	11.12	1.38	37.50
Prawn, 125 g	9	9.31	13.32	2.19	46.63
Shrimp, 125 g	6	11.39	9.39	2.50	28.75
Crayfish, 125 g	3	16.35	2.32	14.67	19.63
Crab, 125 g	6	13.42	14.24	1.25	36.50
Oysters, 125 g	4	58.00	53.62	10.00	147.50
Snails or whelks, 125 g	5	77.25	126.39	11.25	330.00
Mussels, 125 g	22	103.17	84.91	8.48	400.00
Cockles, 125 g	2	136.25	38.75	97.50	175.00
Clams, 125 g	8	136.05	168.50	10.00	453.75
Scallops, 125 g	6	176.46	179.73	5.00	425.00

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Fish and seafood - Prepared					
Eel, smoked, 55 g	2	0.87	0.23	0.65	1.10
Eel, cooked, 100 g	3	0.85	0.81	0.23	2.00
Crustaceans, canned, 55 g	5	1.54	0.64	0.60	2.59
Fish, salted or smoked, 55 g	61	1.34	1.18	0.27	7.70
Fish, canned, 55 g	129	1.49	1.42	0.28	7.70
Bivalves, smoked, 55 g*	1	1.38	0.00	1.38	1.38
Fish, pickled, 55 g	12	2.15	1.09	0.37	3.58
Shrimp, cooked, 100 g	97	2.05	1.39	0.80	13.00
Lobster, cooked, 100 g	4	3.05	0.95	2.50	4.70
Squid or octopus, cooked, 100 g	5	3.48	1.25	2.50	5.50
Crab, cooked, 100 g	8	3.40	1.67	2.50	7.30
Prawns, cooked, 100 g	15	4.64	4.45	1.09	18.00
Fish, cooked, 100 g	389	5.25	9.57	0.09	80.30
Oysters, cooked, 100 g*	1	13.00	0.00	13.00	13.00
Scallops, cooked, 100 g	3	16.83	11.26	2.50	30.00
Bivalves, canned, 55 g	3	39.69	8.62	27.50	45.93
Crayfish, cooked, 100 g	6	39.59	19.80	2.50	58.39
Mussels, cooked, 100 g	13	57.11	119.95	7.00	470.00
Snails or whelks, cooked, 100 g	7	65.93	71.71	2.50	210.00
Bivalves, pickled, 55 g	2	78.93	61.88	17.05	140.80
Cockles, cooked, 100 g*	1	206.00	0.00	206.00	206.00

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Beans and bean products					
Beans, chickpea, canned, 80 g	5	19.07	7.49	11.92	30.40
Beans, white, canned, 80 g	4	24.80	5.60	16.00	30.40
Beans, black, canned, 80 g	3	26.67	2.64	24.80	30.40
Beans, kidney, canned, 80 g	5	24.00	11.83	9.60	40.00
Beans, white, cooked, 80 g	48	25.26	11.34	0.05	52.56
Beans, lentil, canned, 80 g	2	28.60	12.60	16.00	41.20
Beans, chickpea, cooked, 80 g	3	34.19	7.09	25.60	42.96

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Beans, various, canned, 80 g	4	32.04	20.66	18.16	67.60
Beans, pinto, canned, 80 g	3	37.87	9.34	28.00	50.40
Beans, various, fresh, 80 g	9	43.69	25.49	12.80	96.80
Beans, lima, cooked, 80 g	49	46.97	22.38	6.00	96.56
Beans, pinto, cooked, 80 g	47	51.39	12.96	18.00	77.76
Beans, various, cooked, 80 g	12	55.52	63.37	0.05	245.60
Beans, lentil, cooked, 80 g	4	68.08	9.86	59.52	84.80
Beans, various, dried, 35 g	52	78.47	40.23	11.20	245.00
Tofu, 85 g	7	101.99	123.49	14.03	365.50
Beans, black, cooked, 80 g*	1	112.00	0.00	112.00	112.00
Soya flakes, 35 g*	1	143.50	0.00	143.50	143.50

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Nuts and seeds					
Caraway seeds, 30 g*	1	0.05	0.00	0.05	0.05
Chestnuts, 30 g	2	12.60	0.30	12.30	12.90
Peanut butter, 15 g	76	10.56	8.24	0.23	57.00
Almond butter, 15 g	2	15.83	3.68	12.15	19.50
Safflower seeds, 30 g*	1	15.90	0.00	15.90	15.90
Pistachios, 30 g	13	21.68	6.10	5.31	31.83
Almonds, 30 g	18	26.08	11.23	5.31	39.00
Hazelnut butter, 15 g*	1	30.00	0.00	30.00	30.00
Peanuts, 30 g	71	29.25	53.17	2.40	384.00
Arecanut, 30 g	2	32.25	1.05	31.20	33.30
Seeds, various, 30 g	2	33.15	5.25	27.90	38.40
Sesame seeds, 30 g	13	30.53	20.69	8.40	78.60
Poppy seeds, 30 g	10	39.00	16.10	7.20	74.70
Macadamia nuts, 30 g*	1	42.00	0.00	42.00	42.00
Flaxseed, 30 g	5	53.64	11.16	39.00	66.90
Hazelnuts, 30 g	30	52.76	20.54	12.90	93.00
Pumpkin seeds, 30 g	6	50.44	37.59	5.31	105.00
Chia seeds, 30 g	6	65.40	13.02	48.00	90.00
Pine nuts, 30 g	7	67.97	13.87	42.00	90.00
Nuts, various, 30 g	14	68.40	57.24	17.70	245.07
Brazil nuts, 30 g	5	77.69	40.70	11.67	138.00
Niger seeds, 30 g	2	82.50	5.40	77.10	87.90
Walnuts, 30 g	34	100.23	27.64	33.00	150.00
Sunflower seeds, 30 g	74	101.59	29.00	10.53	186.00
Hemp seeds, 30 g	3	145.00	45.45	87.00	198.00
Cashews, 30 g	12	169.10	34.80	120.00	228.00
Alfalfa seeds, 30 g	2	169.50	49.50	120.00	219.00
Pecans, 30 g	5	170.40	141.72	60.00	450.00

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Beverages - Alcoholic					
Liquor, 45 g	64	1.83	1.80	0.00	7.65
Vermouth, 83 g	6	2.58	0.73	1.74	3.69
Cider, 333 g	4	3.33	2.04	1.67	6.66
Beer, 333 g	115	3.02	3.19	0.00	18.32
Wine, 188 g	115	5.51	2.51	0.47	16.36
Fortified wine, 83 g	9	5.53	4.21	0.42	11.21

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Beverages - Juices					
Lemon juice, 5 g	6	0.14	0.13	0.05	0.34
Turnip juice, 250 g	2	1.70	0.30	1.40	2.00
Lemonade, 250 g	51	1.71	1.15	0.63	6.50
Mango juice, 250 g	3	2.78	0.99	1.48	3.88
Fruit drink, 250 g	185	2.42	2.46	0.63	21.25

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Cherry juice, 250 g*	1	2.39	0.00	2.39	2.39
Citrus juice, 250 g	67	3.32	1.50	0.63	6.75
Fruit juice, concentrated, 62.5 g	4	3.86	1.38	2.94	6.25
Strawberry juice, 250 g*	1	3.68	0.00	3.68	3.68
Citrus juice, canned, 250 g	20	4.04	2.26	0.75	9.50
Citrus juice, from concentrate, 250 g	64	4.47	1.84	0.63	10.50
Plum juice, 250 g*	1	4.39	0.00	4.39	4.39
Grape juice, 250 g	67	4.55	2.44	0.63	11.35
Aloe juice, 250 g*	1	4.75	0.00	4.75	4.75
Sugarcane juice, 250 g*	1	5.00	0.00	5.00	5.00
Apple juice, canned or bottled, 250 g	77	4.04	5.23	0.63	36.00
Blackcurrant juice, 250 g*	1	6.65	0.00	6.65	6.65
Peach juice, 250 g	3	8.47	0.71	7.54	9.28
Grapefruit juice, 250 g	47	5.85	6.69	0.63	35.75
Fruit juice, various, canned or bottled, 250 g	67	7.15	5.79	0.63	22.50
Passionfruit juice, 250 g*	1	10.55	0.00	10.55	10.55
Apricot juice, 250 g*	1	10.99	0.00	10.99	10.99
Pineapple juice, 250 g	6	12.30	4.18	7.78	17.75
Tomato juice, 250 g	3	14.25	1.06	12.75	15.00
Acai juice, 250 g*	1	12.50	0.00	12.50	12.50
Tomato juice, canned, 250 g	2	14.75	2.00	12.75	16.75
Vegetable juice, canned, 250 g	16	12.63	6.32	5.38	30.00
Pear juice, 250 g	3	13.04	7.01	5.25	22.25
Vegetable juice, 250 g	5	13.80	8.79	2.50	28.75
Tomato juice, bottled, 250 g	47	19.04	7.98	10.25	53.75
Goji juice, 250 g*	1	25.00	0.00	25.00	25.00
Mangosteen juice, 250 g*	1	25.00	0.00	25.00	25.00
Pomegranate juice, 250 g*	1	25.00	0.00	25.00	25.00
Pineapple juice, from concentrate, 250 g	47	28.72	11.14	8.25	53.75
Prune juice, 250 g	48	34.80	9.22	21.00	78.00

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Beverages - Hot					
Tea, lemongrass, brewed, 250 g	3	1.09	0.62	0.26	1.75
Instant coffee powder, 3 g	10	1.74	1.22	0.27	3.60
Rosehip powder, 3 g*	1	1.20	0.00	1.20	1.20
Tea, yerba mate, brewed, 250 g	5	3.04	2.44	0.44	7.50
Coffee, brewed, 250 g	145	3.57	3.25	0.63	18.50
Tea, peppermint, brewed, 250 g	5	4.68	4.54	0.27	13.25
Coffee, beans, 14 g	25	7.57	3.48	1.55	13.55
Tea, herbal, brewed, 250 g	38	6.32	7.50	0.16	27.00
Tea, brewed, loose, 250 g	57	7.30	9.13	1.22	50.75
Tea, brewed, bag, 250 g	147	9.58	5.25	0.63	32.25
Tea, chamomile, brewed, 250 g	5	8.57	11.76	0.51	31.50
Tea, brewed, 250 g	9	10.64	4.87	5.00	17.75
Green tea, brewed, loose, 250 g	8	10.76	8.30	4.61	28.00
Green tea, brewed, bag, 250 g	10	13.98	7.39	1.91	21.96
Green tea, leaves, 3 g	4	18.09	14.53	8.76	43.20
Tea, hibiscus, brewed, 250 g	7	21.02	12.17	0.90	38.75
Cereal grain beverage, 250 g	4	21.98	24.62	0.17	60.00
Hot chocolate powder, 25 g	5	35.75	19.03	12.50	53.75
Tea, herbal, dry, 3 g	40	33.43	27.89	3.63	111.00
Tea, instant, 3 g*	1	46.50	0.00	46.50	46.50
Hot chocolate, 250 g	8	57.69	1.30	55.00	60.00
Tea, leaves, 3 g	128	59.16	78.14	1.02	504.00

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Beverages - Other					
Soft drink syrup, 30 g	2	0.80	0.12	0.68	0.92
Strawberry milk, 250 g*	1	0.88	0.00	0.88	0.88

Nickel in Foods: Summary tables, unweighted, September 2025

Water, bottled, 375 g	150	1.22	1.18	0.06	9.00
Water, tap, 375 g	78	1.09	1.95	0.00	11.25
Carbonated drinks, 375 g	168	2.09	1.34	0.38	8.37
Sports drink, 375 g*	3	3.75	0.00	3.75	3.75
Carbonated drinks, canned, 375 g	20	4.53	9.28	0.21	43.88
Iced tea, 375 g	5	10.29	4.99	3.32	18.15
Malt drink, 250 g	2	16.25	8.75	7.50	25.00
Chocolate milk, 250 g	89	20.00	6.95	9.75	43.25
Vanilla milkshake, 250 g	28	19.51	23.65	5.00	100.00
Coconut water, 375 g	22	21.64	36.39	0.15	161.25
Energy drink, 375 g	24	29.91	32.97	1.88	113.99
Chocolate milkshake, 250 g	48	46.43	46.63	14.75	307.75

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Herbs and spices					
Salt, 1 g	28	0.05	0.03	0.01	0.14
Saffron, 0.5 g	2	0.06	0.01	0.06	0.07
Dill, dried, 0.5 g*	1	0.03	0.00	0.03	0.03
Bay leaf, dried, 0.5 g*	1	0.06	0.00	0.06	0.06
Chervil, 1.5 g*	2	0.06	0.00	0.06	0.06
Dill, fresh, 1.5 g*	2	0.09	0.00	0.09	0.09
Holy basil, 1.5 g*	1	0.09	0.00	0.09	0.09
Mustard seed, 0.5 g	3	0.26	0.09	0.19	0.38
Mango ginger, 1.5 g*	1	0.17	0.00	0.17	0.17
Onion, dried, 0.5 g*	1	0.17	0.00	0.17	0.17
Annatto, 0.5 g	2	0.32	0.01	0.32	0.33
Wasabi, dry, 0.5 g	2	0.35	0.01	0.35	0.36
Ginger, fresh, 1.5 g	10	0.27	0.17	0.00	0.62
Tamarind, 1.5 g	2	0.24	0.24	0.00	0.48
Asafoetida, 0.5 g*	1	0.26	0.00	0.26	0.26
Cloves, 0.5 g	3	0.38	0.11	0.30	0.54
Turmeric powder, 0.5 g	2	0.41	0.16	0.25	0.57
Allspice, 0.5 g	2	0.41	0.29	0.13	0.70
Linden inflorescence, dry, 0.5 g*	1	0.42	0.00	0.42	0.42
Sumac, 0.5 g	4	0.63	0.14	0.50	0.86
Coriander seeds, 0.5 g	2	0.70	0.02	0.68	0.72
Ginger, dry, 0.5 g	8	0.55	0.31	0.15	1.20
Mint leaves, 1.5 g*	1	0.63	0.00	0.63	0.63
Rosemary, dry, 0.5 g	5	0.55	0.52	0.18	1.54
Cilantro, 1.5 g	2	0.76	0.10	0.66	0.86
Mango powder, 0.5 g*	1	0.66	0.00	0.66	0.66
Parsley, dry, 0.5 g	2	0.60	0.51	0.10	1.11
Nutmeg, 0.5 g	4	0.68	0.42	0.00	1.11
Garlic, dry, 0.5 g	5	0.62	0.55	0.00	1.39
Chives, 1.5 g*	2	0.75	0.00	0.75	0.75
Ramsons, 1.5 g*	1	0.75	0.00	0.75	0.75
Mahaleb cherry, 0.5 g*	1	0.77	0.00	0.77	0.77
Curry leaves, dry, 0.5 g	5	0.87	0.17	0.57	1.01
Mint, dry, 0.5 g	6	0.72	0.60	0.19	1.70
Paprika, 0.5 g	11	0.89	0.37	0.08	1.42
St. John's Wort, dry, 0.5 g*	1	0.99	0.00	0.99	0.99
Garlic, 4 g	20	0.83	0.62	0.16	2.44
Fenugreek, 0.5 g	4	0.98	0.45	0.27	1.39
Basil, dry, 0.5 g	14	0.77	0.89	0.12	3.37
Cinnamon, 0.5 g	9	0.93	1.70	0.00	5.65
Herbs and spices, unspecified, 0.5 g	22	1.00	0.44	0.03	1.94
Cardamom, 0.5 g	5	1.10	0.64	0.11	2.14
Peppermint, dry, 0.5 g	6	1.56	0.38	1.05	2.23
Oak bark, dry, 0.5 g*	1	1.02	0.00	1.02	1.02
Cumin, 0.5 g	7	1.41	0.86	0.80	3.47

Nickel in Foods: Summary tables, unweighted, September 2025

Pomegranate seed, 0.5 g*	1	1.05	0.00	1.05	1.05
Marjoram, dry, 0.5 g	3	1.84	0.09	1.72	1.93
Mace, 0.5 g*	1	1.30	0.00	1.30	1.30
Curry leaves, 1.5 g*	1	1.40	0.00	1.40	1.40
Omum, dry, 0.5 g*	1	1.48	0.00	1.48	1.48
Nigella seeds, 0.5 g	5	2.13	0.33	1.57	2.48
Bishop's weed, 0.5 g*	1	1.60	0.00	1.60	1.60
Rosemary, fresh, 1.5 g	4	2.30	0.27	1.98	2.73
Anise, 0.5 g*	1	1.99	0.00	1.99	1.99
Anchovy paste, 15 g	4	2.16	1.29	0.38	3.60
Parsley, fresh, 1.5 g	11	1.96	1.81	0.11	5.72
Sage, dry, 0.5 g	2	3.19	0.24	2.95	3.44
Oregano, dry, 0.5 g	5	2.38	2.10	0.20	5.30
Thyme, dry, 0.5 g	6	2.81	1.59	0.50	4.97
Lemon balm, 0.5 g*	1	3.01	0.00	3.01	3.01
Pepper, black, 0.5 g	13	2.40	2.86	0.40	11.50
Basil, fresh, 1.5 g	4	3.67	0.48	2.99	4.23
Hot peppers, dried, 0.5 g	7	3.13	2.96	0.18	7.62
Gourmet salt, 1 g	10	2.75	3.82	0.21	12.41
Ramen noodle powder, 1.5 g*	1	4.95	0.00	4.95	4.95
Oregano, fresh, 1.5 g	5	5.26	1.08	3.72	6.45
Cayenne pepper, 0.5 g	3	5.83	4.06	2.19	11.50
Fennel, dry, 0.5 g	3	5.55	5.45	1.43	13.25
Savoury, dried, 0.5 g*	1	7.95	0.00	7.95	7.95
Hot peppers, 40 g	10	10.48	3.33	5.60	16.40

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Fats and oils					
Olive oil, 10 g	90	0.21	0.16	0.01	0.98
Cottonseed oil, 10 g	2	0.32	0.06	0.27	0.38
Lard, 10 g	4	0.35	0.14	0.10	0.43
Butter, 10 g	97	0.30	0.27	0.06	1.63
Almond oil, 10 g*	1	0.25	0.00	0.25	0.25
Corn oil, 10 g	9	0.34	0.30	0.02	1.00
Pumpkin seed oil, 10 g*	2	0.32	0.00	0.32	0.32
Grapeseed oil, 10 g	3	0.39	0.29	0.19	0.80
Palm oil, 10 g	2	0.42	0.32	0.10	0.73
Vegetable oils, unspecified, 10 g	81	0.35	0.49	0.02	3.29
Mustard oil, 10 g	4	0.54	0.27	0.27	0.96
Rice oil, 10 g	2	0.55	0.25	0.30	0.80
Hazelnut oil, 10 g	2	0.49	0.41	0.07	0.90
Sunflower oil, 10 g	26	0.50	0.49	0.02	2.40
Avocado oil, 10 g	11	0.64	0.42	0.14	1.40
Cocoa butter, 10 g	3	0.82	0.08	0.70	0.89
Peanut oil, 10 g	3	0.76	0.42	0.26	1.28
Soybean oil, 10 g	9	0.93	1.02	0.03	3.20
Coconut oil, 10 g	5	0.93	1.36	0.08	3.60
Canola/rapeseed oil , 10 g	12	1.20	1.27	0.20	4.20
Sesame oil, 10 g	3	1.54	1.03	0.75	3.00
Margarine, 10 g	138	1.36	2.74	0.02	18.31
Ghee, 10 g	13	6.57	6.72	1.00	20.34
Shortening, 10 g	7	11.90	7.26	4.21	23.79

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Snacks and desserts					
Baba ganoush, 30 g*	1	0.35	0.00	0.35	0.35
Breadfruit, dried, 40 g*	1	0.48	0.00	0.48	0.48
Popsicle, 30 g	50	0.53	0.26	0.24	1.56
Pork rinds, 20 g	2	1.83	0.77	1.06	2.60
Gelatin dessert, 130 g	69	1.65	1.20	0.33	8.00

Nickel in Foods: Summary tables, unweighted, September 2025

Vanilla ice cream or frozen yogurt, 129 g	159	1.97	1.26	0.46	12.90
Applesauce, 110 g	78	2.16	1.82	0.50	11.00
Chewing gum, 3 g	18	2.05	2.29	0.09	8.31
Graham crackers, 30 g	50	2.85	0.82	0.30	4.50
Sherbert/sorbet, 129 g	52	2.40	2.03	0.65	8.51
Raisins, yogurt candy coated, 40 g*	1	2.60	0.00	2.60	2.60
Pretzels, 50 g	51	3.74	1.56	0.40	8.25
Raisins, 40 g	74	3.34	2.42	0.40	14.12
Dried cherries, 40 g*	1	2.71	0.00	2.71	2.71
Dried mango, 40 g*	1	4.40	0.00	4.40	4.40
Banana chips, 40 g*	1	4.80	0.00	4.80	4.80
Cereal bar, rice, 35 g*	1	7.35	0.00	7.35	7.35
Dried strawberry, 40 g	3	7.16	4.33	3.83	13.28
Potato chips, 50 g	83	7.67	3.91	1.81	21.30
Dried currants, 40 g*	1	8.04	0.00	8.04	8.04
Cookies, not chocolate, 30 g	79	6.17	10.22	0.24	63.60
Vegetable chips, 50 g	8	9.28	5.45	1.60	17.65
Rice pudding, 130 g	6	9.36	5.64	2.73	16.25
Savoury crisps, 50 g	7	9.83	6.47	1.00	18.50
Pudding, not chocolate, 130 g	55	9.68	9.35	0.27	57.20
Corn chips, 50 g	60	10.33	2.55	5.25	16.05
Dried dates, 40 g	5	12.24	1.83	8.80	14.00
Snacks, corn-based, 50 g	4	13.65	2.94	8.60	16.00
Popcorn, 50 g	73	14.51	5.49	0.75	40.65
Dried blueberry, 40 g*	1	15.56	0.00	15.56	15.56
Dried pear, 40 g*	1	15.64	0.00	15.64	15.64
Dried rosehips, 40 g*	1	16.00	0.00	16.00	16.00
Cookies with nuts, 30 g	5	15.16	6.44	8.91	27.24
Dried mulberry, 40 g*	1	17.28	0.00	17.28	17.28
Cookies with chocolate, 30 g	130	16.71	7.49	0.30	68.70
Snacks, potato-based, 50 g*	1	19.00	0.00	19.00	19.00
Prunes, 40 g	4	21.45	3.66	16.00	24.80
Cereal bar, 35 g	62	21.63	8.25	3.22	45.50
Pudding, chocolate, 130 g	8	26.86	7.00	16.90	36.27
Cereal bar, with chocolate, 35 g	13	23.40	17.29	9.31	63.35
Ice cream desserts, 129 g	46	20.82	22.47	0.54	101.39
Dried cranberry, 40 g*	1	25.76	0.00	25.76	25.76
Dried pineapple, 40 g*	1	25.76	0.00	25.76	25.76
Dried apricots, 40 g	6	32.07	11.86	19.60	48.00
Cookies with chocolate and nuts, 40 g*	1	40.00	0.00	40.00	40.00
Dried raspberry, 40 g	2	40.50	9.90	30.60	50.40
Dried figs, 40 g	3	49.13	4.05	43.40	52.00
Chocolate ice cream, 129 g	28	49.74	9.29	28.38	64.50
Ice cream, non-dairy, 129 g	3	42.83	30.32	14.06	84.75
Dried fruit and nuts, 50 g	4	67.51	20.10	34.55	88.50
Snacks, bean-based, 50 g	3	69.67	44.17	25.50	130.00

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Sugars and sweets					
Lactose powder, 1.4 g*	1	0.01	0.00	0.01	0.01
Xylitol, 1.4 g*	1	0.04	0.00	0.04	0.04
Sugar, white, 4 g	71	0.07	0.04	0.00	0.28
Fructose, 4 g*	2	0.12	0.00	0.12	0.12
Sugar, brown, 4 g	10	0.34	0.16	0.03	0.68
Corn/glucose syrup, 30 g*	1	0.60	0.00	0.60	0.60
Molasses, 20 g	2	1.01	0.99	0.02	2.00
Gummy candy, 40 g	8	1.53	1.44	0.24	4.00
Candy, 40 g	86	1.77	2.07	0.32	8.40
Sweetened evaporated milk, 30 g*	1	2.16	0.00	2.16	2.16
Syrup, not chocolate, 60 g	76	2.19	3.81	0.23	18.00

Nickel in Foods: Summary tables, unweighted, September 2025

Honey, 20 g	120	2.32	3.84	0.01	18.00
White chocolate, 15 g	2	7.17	6.63	0.54	13.80
Marzipan, 30 g*	2	9.60	0.00	9.60	9.60
Malt syrup, 30 g*	1	12.72	0.00	12.72	12.72
Maple syrup, 60 g	4	17.40	1.02	16.14	18.72
Licorice, 40 g	5	16.72	9.43	4.00	27.20
Chocolate confections with nuts, 40 g	86	23.82	19.59	0.80	113.60
Confections with nuts, 50 g	3	29.25	20.15	1.50	48.75
Syrup, carob, 60 g*	1	33.00	0.00	33.00	33.00
Chocolate confections, 40 g	116	36.49	19.58	2.40	125.64
Syrup, chocolate , 60 g	56	54.12	15.51	1.68	79.44
Chocolate, 40 g	53	71.19	52.77	17.60	196.00

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Sauces, dips, condiments and spreads					
Chili sauce, 15 g	3	0.29	0.13	0.13	0.45
Mayonnaise, 15 g	79	0.30	0.20	0.02	1.50
Hollandaise sauce, 30 g*	1	0.42	0.00	0.42	0.42
Relish, 15 g*	1	0.45	0.00	0.45	0.45
Mustard, 5 g	57	0.52	0.21	0.01	1.08
Fruit jelly, 15 g	51	0.51	0.33	0.12	1.32
Horseradish, 5 g	5	1.17	0.41	0.55	1.50
Chutney, 15 g	2	1.23	1.02	0.22	2.25
Ketchup, 15 g	61	1.57	0.97	0.23	4.58
Dips, dairy-based, 30 g	64	1.32	2.17	0.02	13.71
Fruit jams, 15 g	55	1.45	2.30	0.09	13.89
Barbecue sauce, 15 g	28	2.13	0.99	0.75	4.50
Bechamel sauce, 125 g	11	1.50	2.30	0.37	8.53
Sweet and sour sauce, 30 g	52	2.51	1.49	0.23	8.07
Oyster sauce, 15 g*	1	1.13	0.00	1.13	1.13
Soy mayonnaise, 15 g	2	4.28	2.32	1.97	6.60
Teriyaki sauce, 15 g*	1	3.45	0.00	3.45	3.45
Pad thai sauce, 125 g*	1	5.04	0.00	5.04	5.04
Soy sauce, 15 g	23	6.61	5.90	0.11	30.05
Salsa, 60 g	50	7.87	3.60	0.60	23.16
Gravy, 60 g	53	8.13	7.44	0.48	30.36
Guacamole, 30 g	2	9.38	7.28	2.10	16.65
Dressings, 30 g	170	5.29	26.98	0.04	213.00
Hummus / pulse dips, 30 g	20	12.21	7.69	2.72	32.70
Chocolate hazelnut spread, 15 g	2	17.45	0.95	16.50	18.39
Curry sauce, 125 g	4	14.66	9.73	4.93	25.00
Tartar sauce, 30 g	3	15.40	20.93	0.53	45.00
Pesto, 60 g	11	26.19	23.83	1.19	81.00
Satay sauce, 125 g*	1	50.00	0.00	50.00	50.00

	Number of sources	Mean Ni (ug/serving)	Stddev (ug/serving)	Min Ni (ug/serving)	Max Ni (ug/serving)
Miscellaneous					
Vanilla extract, 1 g	15	0.02	0.03	0.00	0.14
Yeast, 0.6 g	19	0.10	0.06	0.04	0.27
Emulsifer, 1.5 g	2	0.20	0.12	0.08	0.33
Tempura batter, 30 g*	1	0.22	0.00	0.22	0.22
Nutritional yeast, 5 g*	1	0.50	0.00	0.50	0.50
Baking powder, 0.6 g	20	0.75	0.56	0.08	1.94
Vinegar, 15 g	8	0.84	0.62	0.11	1.95
Agar, 0.6 g	2	1.00	0.20	0.81	1.20
Baking soda, 0.6 g	3	1.02	0.50	0.40	1.62
Barley malt, dried, 5 g*	1	2.65	0.00	2.65	2.65
Tomato sauce, 60 g	63	6.15	2.28	2.13	12.00
Bouillon powder, 6 g	10	5.95	3.83	0.12	9.00
Vekao powder, 5 g*	1	6.90	0.00	6.90	6.90

Nickel in Foods: Summary tables, unweighted, September 2025

Broth, 250 g	17	9.58	3.59	5.00	19.00
Tomato paste, 30 g	15	10.38	4.68	6.00	22.20
Carob flour, 5 g*	1	10.60	0.00	10.60	10.60
Protein powder, 30 g	22	15.91	13.67	3.00	48.00
Cocoa mass, 5 g	2	28.98	0.38	28.60	29.35
Coconut, dried, 15 g	8	24.45	13.52	2.25	42.60
Cocoa powder, 5 g	15	50.90	13.54	27.00	85.00