

Results of our apple juice and grape juice tests

We tested 88 samples of apple juice and grape juice purchased in August and September, 2011, in Connecticut, New Jersey, and New York. We tested one sample from each of three lots of the majority of the juices, most of which were made from concentrate in ready-to-drink packages (bottles or juice boxes). As the country-of-origin-labeling (COOL) column below indicates, some juice samples we tested were made from concentrate that came from multiple countries, while others came solely from the United States or another single country. There's no federal limit for arsenic or lead in juice. In our tests, 25 percent of samples exceeded the 5-ppb (parts per billion) total lead limit for bottled water, and 10 percent exceeded the 10-ppb limit for total arsenic in drinking water. In addition to test results for total lead and total arsenic, the table below displays test results for inorganic arsenic species, which are carcinogenic, and organic arsenic species, which may also be a health concern. Most arsenic we detected was inorganic. Our tests don't offer conclusions about overall levels in any juice type or brand.

Product	Country-of-origin labeling (COOL)	Juice type (RTD = ready-to-drink package)	Package type	Size (fl. oz.)	Lot #	Total arsenic (ppb)	Total inorganic arsenic species (ppb) ^[1]	Total organic arsenic species (ppb) ^[1]	Total lead (ppb)
365 Everyday Value Organic 100% Apple Juice (Whole Foods)	Turkey, Argentina, New Zealand	RTD	Plastic bottle	64	1	7.11	5.89	0.60	3.49
	Argentina	RTD	Plastic bottle	64	2	7.00	6.74	0.71	3.79
America's Choice 100% Apple Juice (A&P)	China	RTD	Plastic bottle	64	1	1.67	1.03	0.55	1.40
	China	RTD	Plastic bottle	64	2	4.37 ^[2]	3.85 ^[2]	0.94 ^[2]	5.56 ^[2]
	China	RTD	Plastic bottle	64	3	1.37	0.60	0.51	0.50
Apple & Eve 100% Apple Juice	USA, Argentina, China	RTD	Juice box(es)	8 x 6.75	1	5.02	2.49	1.88	2.05
	USA, Argentina, China	RTD	Juice box(es)	8 x 6.75	2	5.30	3.06	2.23	3.44
	USA, Argentina, China	RTD	Juice box(es)	8 x 6.75	3	10.5	4.13	4.85	1.90
Gerber 100% Apple Juice	Argentina	RTD	Plastic bottle(s)	4 x 4	1	9.69	10.48	0.92	13.6
	Argentina	RTD	Plastic bottle(s)	4 x 4	2	8.66	7.65	0.88	7.08
	Argentina	RTD	Plastic bottle(s)	4 x 4	3	5.82	3.48	0.69	3.41
Gerber Organic 100% Apple Juice	Argentina	RTD	Plastic bottle(s)	4 x 4	1	5.74	4.44	0.90	2.21
	Argentina	RTD	Plastic bottle(s)	4 x 4	2	5.68	4.55	0.95	2.28
	Argentina	RTD	Plastic bottle(s)	4 x 4	3	5.47	3.89	0.78	2.23
Gold Emblem 100% Apple Juice (CVS)	China	RTD	Plastic bottle	64	1	3.14	2.05	0.69	2.87
	China	RTD	Plastic bottle	64	2	9.38	4.99 ^[3]	3.94 ^[3]	5.57
	China	RTD	Plastic bottle	64	3	8.56	5.44	3.61	4.84
Gold Emblem 100% Grape Juice (CVS)	USA, Argentina	RTD	Plastic bottle	64	1	7.47	6.80	1.54 ^[3]	8.64
	Spain, USA	RTD	Plastic bottle	64	2	7.05	5.97	0.89	7.15
	USA, Spain	RTD	Plastic bottle	64	3	5.89	4.06	0.63	6.45
Great Value 100% Apple Juice with added fiber Not From Concentrate (Walmart)	USA	RTD	Plastic bottle	64	1	3.85	2.66	0.94	0.24
	USA	RTD	Plastic bottle	64	2	2.97	2.35	0.87	0.14
	USA	RTD	Plastic bottle	64	3	2.93	1.90	0.61	0.25
Great Value 100% Apple Juice (Walmart)	Argentina, China	RTD	Plastic bottle	64	1	10.1	5.79	4.26	3.68
	Argentina, China	RTD	Plastic bottle	64	2	13.9	5.09	8.40	5.12
	Argentina, China	RTD	Plastic bottle	64	3	11.5	4.86	8.05	5.07
Great Value 100% Apple Juice (Walmart)	S. Africa, China	RTD	Plastic bottle(s)	6 x 10	1	5.46	3.76	1.85	3.44
Joe's Kids 100% Apple Juice (Trader Joe's)	Chile	RTD	Juice box(es)	8 x 6.75	1	4.12	3.44	0.49	5.28
	Chile	RTD	Juice box(es)	8 x 6.75	2	4.07	3.55	0.50	5.55
	Chile	RTD	Juice box(es)	8 x 6.75	3	5.69	5.09	0.48	9.68
Juicy Juice 100% Apple Juice	China	RTD	Plastic bottle	64	1	2.95	2.37	1.24	2.34
	China	RTD	Plastic bottle	64	2	1.73	1.34	0.67	0.83
	China	RTD	Plastic bottle	64	3	1.74	1.01	0.50	1.33
Juicy Juice 100% Apple Juice	China	RTD	Juice box(es)	8 x 6.75	1	1.28	0.79	0.53	1.44
	China	RTD	Juice box(es)	8 x 6.75	2	2.83	0.32	0.48	2.78
	China	RTD	Juice box(es)	8 x 6.75	3	1.93	1.05	0.51	2.19
Juicy Juice 100% Apple Juice Non Frozen Concentrate	China	Concentrate (non-frozen)	Can	11.5	1	4.24 ^[4]	4.97 ^[4]	0.19 ^[4]	1.54 ^[4]
	China	Concentrate (non-frozen)	Can	11.5	2	2.04 ^[4]	1.52 ^[4]	0.62 ^[4]	2.17 ^[4]
	China	Concentrate (non-frozen)	Can	11.5	3	1.92 ^[4]	1.67 ^[4]	1.28 ^[3] ^[4]	1.36 ^[4]
Juicy Juice 100% Apple Juice	Brazil	RTD	Plastic bottle(s)	6 x 10	1	1.68	1.18	0.48	1.14
	Brazil	RTD	Plastic bottle(s)	6 x 10	2	1.92	1.28	0.48	3.50
	Brazil	RTD	Plastic bottle(s)	6 x 10	3	1.80 ^[2]	1.11 ^[2]	0.48 ^[2]	1.18 ^[2]
Lucky Leaf 100% Apple Juice	China	RTD	Plastic bottle	64	1	3.19	2.24	0.49	1.23
	USA, S. Africa	RTD	Plastic bottle	64	2	2.30	1.75	0.48	0.75
Minute Maid 100% Apple Juice	USA, Argentina, Austria, Chile, China, Germany, Turkey	RTD	Plastic bottle(s)	6 x 10	1	6.22	4.57	1.59	6.51
	USA, Argentina, Austria, Chile, China, Germany, Turkey	RTD	Plastic bottle(s)	6 x 10	2	6.64	4.36	1.75	6.51
	USA, Argentina, Austria, Chile, China, Germany, Turkey	RTD	Plastic bottle(s)	6 x 10	3	6.71	3.38	2.36	4.15
Minute Maid 100% Apple Juice (Packaged for McDonalds)	USA, Argentina, Austria, Chile, China, Germany, Turkey	RTD	Juice box	6.75	1	2.04	0.86	0.49	0.76
	USA, Argentina, Austria, Chile, China, Germany, Turkey	RTD	Juice box	6.75	2	5.58	3.28	2.43	5.32
	USA, Argentina, Austria, Chile, China, Germany, Turkey	RTD	Juice box	6.75	3	2.39	1.49	0.50	2.13
Mott's Original 100% Apple Juice	USA and China	RTD	Plastic bottle	64	1	7.50	4.35	2.85	2.14
	USA and China	RTD	Plastic bottle	64	2	3.99	2.11	1.81	2.75
	USA, Argentina, and China	RTD	Plastic bottle	64	3	7.87	6.55	0.84	3.79
Mott's Original 100% Apple Juice	USA and China	RTD	Juice box(es)	4 x 4.23	1	10.2	5.20	4.69	0.57
	USA and China	RTD	Juice box(es)	4 x 4.23	2	3.97	3.30	0.65	0.71
	USA and China	RTD	Juice box(es)	4 x 4.23	3	4.22	2.76	0.60	0.67
Mott's Original 100% Apple Juice	China	RTD	Juice box(es)	8 x 6.75	1	2.12	1.64	0.66	1.32
	China	RTD	Juice box(es)	8 x 6.75	2	2.76	1.87	0.48	1.05
	China	RTD	Juice box(es)	8 x 6.75	3	2.26 ^[2]	1.54 ^[2]	0.52 ^[2]	0.59 ^[2]
Nature's Own 100% Apple Juice	USA, Argentina, Chile, and/or China	RTD	Plastic bottle	64	1	2.35	1.38	0.57	0.86
	USA, Argentina, Chile, and/or China	RTD	Plastic bottle	64	2	2.32	1.41	0.76	0.88
Old Orchard 100% Apple Juice Frozen Concentrate	Argentina, Chile, China, Poland, USA	Concentrate (frozen)	Plastic Tube	12	1	1.57 ^[4]	1.72 ^[4]	0.39 ^[4]	0.64 ^[4]
	Argentina, Chile, China, Poland, USA	Concentrate (frozen)	Plastic Tube	12	2	1.83 ^[4]	1.25 ^[4]	0.66 ^[4]	0.60 ^[4]
	Argentina, Chile, China, Poland, USA	Concentrate (frozen)	Plastic Tube	12	3	4.77 ^[4]	1.00 ^[4]	2.99 ^[4]	1.26 ^[4]
Red Jacket Orchards 100% Fuji Apple Juice Never From Concentrate (refrigerated)	USA	RTD (refrigerated)	Plastic bottle	32	1	1.61	1.01	0.62	0.21
	USA	RTD (refrigerated)	Plastic bottle	32	2	1.32	0.84	0.54	0.14
	USA	RTD (refrigerated)	Plastic bottle	32	3	1.81 ^[2]	0.51 ^[2]	0.48 ^[2]	0.21 ^[2]
Rite Aid Pantry 100% Apple Juice	China	RTD	Plastic bottle	32	1	6.35	6.41	0.77	2.59
	China	RTD	Plastic bottle	32	2	1.45	0.92	0.74	0.45
	China	RTD	Plastic bottle	32	3	1.14	0.43	0.48	0.64
Seneca 100% Apple Juice Frozen Concentrate	USA, Argentina, China	Concentrate (frozen)	Cardboard tube	12	1	2.34 ^[4]	2.17 ^[4]	0.39 ^[4]	5.54 ^[4]
	USA, Argentina, China	Concentrate (frozen)	Cardboard tube	12	2	4.38 ^[4]	1.68 ^[4]	2.14 ^[4]	3.17 ^[4]
	USA, Argentina, China	Concentrate (frozen)	Cardboard tube	12	3	2.32 ^[4]	1.24 ^[4]	0.41 ^[4]	0.92 ^[4]
Tropicana 100% Apple Juice	Germany, Austria, Italy, Hungary, Argentina, Chile, Turkey, Brazil, USA, China	RTD	Plastic bottle(s)	4 x 15.2	1	1.48	0.71	0.48	1.04
	Germany, Austria, Italy, Hungary, Argentina, Chile, Turkey, Brazil, USA, China	RTD	Plastic bottle(s)	4 x 15.2	2	2.10	1.65	0.61	0.53
	Germany, Austria, Italy, Hungary, Argentina, Chile, Turkey, Brazil, USA, China	RTD	Plastic bottle(s)	4 x 15.2	3	1.53	0.74	0.50	0.95
Walgreens 100% Apple Juice	Argentina, S. Africa, China	RTD	Plastic bottle	64	1	6.78	5.55	0.71	6.94
	Argentina, China	RTD	Plastic bottle	64	2	3.97	2.52	0.68	6.29
	Argentina, China	RTD	Plastic bottle	64	3	5.25	2.28	2.70	2.28
Walgreens 100% Grape Juice	USA, Spain	RTD	Plastic bottle	64	1	17.4	15.49	1.81	14.7
	USA, Argentina, Italy, Spain	RTD	Plastic bottle	64	2	9.71	6.82	0.67	15.9
	Not on label	RTD	Plastic bottle	64	3	24.7	20.48	1.71	10.1
Welch's 100% Apple Juice Pourable Concentrate	China, Chile, Argentina	Concentrate (non-frozen)	Can	11.5	1	2.83 ^[4]	2.95 ^[4]	0.76 ^[4]	1.24 ^[4]
	China, Chile, Argentina	Concentrate (non-frozen)	Can	11.5	2	1.09 ^[4]	1.08 ^[4]	0.61 ^[4]	0.62 ^[4]
	China, Chile, Argentina	Concentrate (non-frozen)	Can	11.5	3	4.08 ^[4]	2.96 ^[4]	0.53 ^[4]	1.33 ^[4]
Welch's 100% Grape Juice	USA	RTD	Plastic bottle	64	1	12.4	9.77	0.98	9.23
	USA	RTD	Plastic bottle	64	2	7.06	4.52	0.92	3.45
	USA	RTD	Plastic bottle	64	3	10.7	7.72	0.79	7.13

Total arsenic and total lead by ICP-DRC-MS with reporting limits of 0.053 ppb for arsenic and 0.006 ppb for lead. Arsenic species by IC-ICP-DRC-MS with the following reporting limits: 0.14 ppb for As III; 0.18 ppb and 0.70 ppb for As V; 0.16 ppb and 0.52 ppb for monomethylarsonic acid (MMA), dimethylarsinic acid (DMA), and trimethylarsine oxide (TMAO).

[1] For calculation of sums of arsenic species, all values reported as less than detection limits (NDs) were applied as the full 100% of the detection levels. Total Inorganic Arsenic is the sum of arsenite (As III) and arsenate (As V), and Total Organic Arsenic is the sum of MMA, DMA and TMAO. The sum of all arsenic species may not add up to 100% of total arsenic due to limitation of the applied speciation method and variabilities in different methods used for the two analyses.

[2] Averages of two blind duplicates analyses.

[3] Duplicate results of one or more arsenic species varied more than others, probably due to complex sample matrices.

[4] Results of "concentrate" samples divided by 4 to account for 4X dilution from using 1 part juice and 3 parts water as per label instruction; amounts of arsenic and lead in the water used assumed insignificant.