

School Supplies 2023: Lead and Cadmium in School Supplies



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Abstract

In 2023, the Washington State Department of Ecology partnered with the Washington State Attorney General’s Office to investigate lead and cadmium in school supplies. We targeted pencil pouches and backpacks marketed and sold as school supplies for children 12 years or younger. The United States Consumer Product Safety Commission (CPSC 2023a) regulates lead and cadmium content in children’s products at the federal level. The levels of concern identified in this study are derived from the regulatory levels determined by the Consumer Product Safety Improvement Act (CPSIA) (CPSC 2023b).

We purchased products available online to Washington residents in the summer of 2023, coinciding with the beginning of the 2023 – 2024 school year. We collected twenty unique products (17 pencil pouches and three backpacks) in multiple sets, and sixty component samples were submitted for lead and cadmium analysis. Fifty-seven samples (95%) contained lead, cadmium, or both above the reporting limit of 1.0 part per million (ppm). Forty-two samples (70%) contained lead, cadmium, or both above the levels of concern (90 ppm for lead and 75 ppm for cadmium). Eighty percent (80%) of product multiples tested had significantly similar lead and cadmium results.

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Background

Children are at greater risk for health problems from exposure to toxic chemicals than adults because they are growing rapidly (CDC 2024). Exposure can occur through common child development behaviors such as putting objects into their mouths and through hand-to-mouth behaviors (CDC 2024). Everyday use of products may increase a child’s contact with toxic chemicals.

The Washington State Department of Ecology (Ecology) regularly conducts studies to analyze children’s products for the presence of restricted toxic chemicals. Ecology conducted an initial study in 2015, then partnered with the Washington State Attorney General’s Office (AGO) to conduct additional studies in 2017, 2018, 2019, 2021, and 2023 to continue assessing lead and cadmium levels in school supply products.

Table 1. Summary of laboratory results from past school supply studies.

Study Year	2017	2018	2019	2021
Number of Samples (N)	60	76	76	49
N > Method Reporting Limit (MRL) ¹ for Lead and/or Cadmium	57	76	76	41
N > Regulatory Limits ² for Lead and/or Cadmium	31	67	72	24

¹ MRL = 1.0 ppm

² Regulatory Limits: Lead = 90 ppm, Cadmium = 40 ppm

Past studies identified lead, cadmium, or both metals in 84 to 100 percent of products tested. The laboratory results with detections ranged from 1.01 to 13,800 parts per million (ppm) of lead and 1.01 to 1,270 ppm of cadmium. This report documents the procedures and findings from the 2023 study.

Methods

Product Collection

Ecology’s Quality Assurance (QA) Officer approved the Quality Assurance Project Plan, *School Supplies 2023: Addendum 1 to Lead and Cadmium in School Supplies, 2021*, before we conducted the 2023 product purchasing, sample preparation, lab analysis, and data reporting (Smith 2023). The QA Project Plan outlines the purchasing strategy, sample processing and analysis methods, quality objectives, quality control, study timeline, budget, and data reporting method. We followed standard operating procedures (SOPs) and QA Project Plan-specified methods for the final data review.

The following discussion notes minor deviations from the QA Project Plan. Deviations occurred around product availability. These deviations did not adversely affect the study data quality.

We used data from previous school supplies studies to prioritize product selection for this study. Product branding, unique naming, design schemes, and color patterns from previously tested products informed product selection for the 2023 study. Products purchased had designs appealing to children or were marketed in a manner indicating they were designed for a child 12 years of age or younger.

We purchased 80 products (four multiples (sets) of 20 individual products) from third-party sellers on Walmart.com. We purchased seventeen sets of pencil pouches and three sets of backpacks. Eight of the products appeared to be the same or very similar to products tested in Ecology's previous school supplies studies (Sekerak 2024; Trumbull 2024a; Trumbull 2024b). Six products were close alternatives to past study products, and four products had not been previously tested by Ecology. We purchased six sets of products from two sellers and four sets from two additional sellers. Third-party sellers sold and shipped the products. All purchasing events occurred on July 12, 2023.

Products arrived at Ecology Headquarters in Lacey, Washington, via the United States Postal Service (USPS), United Parcel Service (UPS), FedEx, SF Express, or China Post. All packages were received intact between July 15, 2023, and August 4, 2023.

One of the shipments received was missing a product multiple.

- Four **Assorted Blue and Green Glitter Pencil Pouch** multi-packs were ordered. Only three multi-packs were received.

One of the products was replaced by a similar product by a third-party seller.

- Four **Monster High Pink Pencil Pouches** were ordered. Four **Monster High Purple Pencil Pouches** were delivered.

Two individual items were slightly different than the other multiples.

- One **Green Camo Pencil Pouch** fabric was a slightly different color than the three multiples received.



Figure 1. Group photo of the four camouflage pencil pouches received.

The pencil pouch on the lower right is a different color than the other three pencil pouches.

- One **Disney Princess Pink Pencil Pouch** multiple had a different graphic, fabric color, and UPC than the other three.



Figure 2. Front and back photos of four Disney Princess pencil pouches received.

The pencil pouch in the lower right corner has a different graphic and is a lighter pink than the other three.

We placed all products in separate, clean, labeled zip-top bags and stored them in plastic totes. We labeled the totes according to the purchase event and stored them in restricted-access, locked cabinets in Ecology’s product testing room.

Sample Processing

We followed procedures for sample processing as referenced in the QA Project Plan (Smith 2023; Trumbull 2022). We documented products and accompanying product information in Ecology’s internal Product Testing Database (PTDB). We used unique product IDs generated by the PTDB to label the bags containing the products.

We randomly chose one product from each set of four multiples for deconstruction, componentizing, and screening. For pencil pouch multi-packs, we chose one individual pencil pouch for deconstruction and testing. We identified individual product components during processing and recorded them in the PTDB. We performed X-ray fluorescence (XRF) screening on each component of the fully deconstructed product to prioritize a component for lab analysis. We chose the components (or composites of components) for laboratory analysis if the screening results indicated levels of lead, cadmium, or both metals greater than or near the levels of concern.

We removed the component chosen for analysis from two products of the remaining product multiple set and sent them for lab analysis without screening.

Due to the missing fourth multiple of the **Assorted Blue and Green Glitter Pencil Pouch** multi-pack, we randomly chose a second pencil pouch (WM-60-13-3) from one of the three received multi-packs for testing.

The replacement **Monster High Purple Pencil Pouch** (WM-61-9/10/11/12) appeared to be the same product as the **Monster High Purple Pencil Pouch** (WM-59-1/2/3/4), purchased from a different seller. We chose a different component for lab analysis from each set of multiples.

We processed the **Green Camo Pencil Pouch** (WM-58-21) with a slightly different gray-green fabric color and sent it for analysis.

We processed the **Disney Princess Pink Pencil Pouch** (WM-61-8) with a lighter pink fabric color, different graphic, and different UPC and sent it for analysis.

We kept the fourth product multiple of each set intact and did not screen it. They remained in sealed zip-top bags from purchase until we transferred them to the AGO under chain of custody on October 18, 2023.

We selected 60 product components (one from each product) for lab analysis. The component samples consisted of:

- 27 metal zipper slides and zipper pull samples (composited).
- 18 fabric pencil pouch or backpack material samples.
- 15 plastic seam tape samples.

We size-reduced components for analysis and placed them into pre-cleaned certified glass jars for transport to the lab. Composites of zipper slides and pulls were necessary to achieve the required weight for lab preparation and analysis.

A courier delivered the samples to Ecology's Manchester Environmental Laboratory (MEL), and the transport of samples met all chain-of-custody requirements for the study.

Laboratory Procedures

MEL prepared samples in one work order and five lab batches using microwave-assisted (less-hydrofluoric acid) digestion by U.S. Environmental Protection Agency (EPA) Method 3052. Analysis was performed following EPA Method 6020B using the inductively coupled plasma-mass spectrometry (ICP-MS).

The laboratory and Product Testing Database (PTDB) report results as milligrams per kilogram (mg/kg), which is equivalent to parts per million (ppm). This report will use parts per million (ppm) to report results, as regulatory language generally uses ppm to describe limits.

Data Quality

MEL validated study products and data following the study's QA Project Plan (Smith 2023; Trumbull 2022). We received a Stage 3 data validation report, laboratory case narrative, and electronic data deliverable via email on October 25, 2023. MEL's case narrative and data validation report provided a discussion and assessment of the data quality, analysis methods, instrument calibration, and quality control. All analyses followed the technical specifications, methods, and quality assurance/quality control requirements of MEL methods and the study's QAPP (Smith 2023; Trumbull 2022). The project manager reviewed and accepted all data.

All results without qualifiers are valid and useable as reported. Sample results with a "U" qualifier indicate that concentrations were not above the reporting limit.

Results with qualifiers and measurement quality objectives not met are discussed below:

Matrix spike (MS) and matrix spike duplicate (MSD) recoveries did not meet the acceptance limit for lead in two samples.

- The standard matrix spiking level (80 ppm) was insufficient for the elevated lead concentration in the component sample WM-59-1-6 (2,530 ppm). Results were not qualified on this basis, and the result is useable.
- The relative percent difference (RPD) between the MS and MSD for lead results WM-61-13-1 exceeded the control limit of 20 percent. The result was “J” qualified as an estimate. Lead was positively identified at a concentration well above the 90 ppm limit, and the result is usable.

Results

We submitted 60 product component samples to MEL for testing — one sample from each of the three multiples of the 20 unique products. Of the 60 component samples, 57 samples (95%) contained lead, and 51 samples (85%) contained cadmium above the reporting limit (1.0 ppm) or the adjusted reporting limit (Appendix A). Detected concentrations of lead ranged from 15 ppm to 3050 ppm. Detected concentrations of cadmium ranged from 1.56 ppm to 954 ppm.

Laboratory analysis values report the tested component’s total lead and cadmium content. CPSC regulates total lead content at 100 ppm, with surface coatings and paints regulated at 90 ppm (CPSC 2023b). For this study, we set levels of concern for lead to 90 ppm due to the complexity of consumer products and the potential for surface coatings or paints in the components tested.

Table 2. Summary statistics for school supply components tested in the 2023 School Supplies study.

Analyte	Cadmium	Lead
Number of Products (N)	60	60
N > Method Reporting Limit (MRL) ¹	51	57
Maximum (ppm) of detections	954	3050
Minimum (ppm) of detections	1.6	15

¹MRL= 1 ppm for lead and cadmium.

Forty-two samples contained lead, cadmium, or both metals above the levels of concern of 90 ppm for lead and 75 ppm for cadmium. Those 42 samples were components from 14 unique products in multiples of three.

Twenty-seven of the component samples tested were composites of zipper pull and slides. Nine samples of zipper composites were found to contain lead levels above 90 ppm. Eighteen of the component samples tested were pencil pouch or backpack fabric material. All 18 fabric material samples contained lead levels above 90 ppm. Fifteen of the component samples tested were samples of the internal seam tape. Twelve internal seam tape samples were found to contain

lead above 90 ppm, and 11 were found to contain cadmium levels above 75 ppm. The product description and component identification numbers for those samples containing lead, cadmium, or both metals above levels of concern are listed below:

- The upper zipper pull and slide of all multiples of the **Cute White Panda Pencil Pouch** (WM-58-5-8, WM-58-6-1, WM-58-7-1) contained lead above 90 ppm.
- The zipper pull and slide of all multiples of the **Black 3-Ring Binder Pencil Pouch** (WM-58-13-2, WM-58-14-1, WM-58-15-1) contained lead above 90 ppm.
- The red mouth material of all multiples of the **Black Shark Backpack with USB Outlet** (WM-58-17-20, WM-58-18-1, WM-58-19-1) contained lead above 90 ppm.
- The camo material of all multiples of the **Green Camo Pencil Pouch** (WM-58-21-1, WM-58-22-3, WM-58-23-1) contained lead above 90 ppm.
- The tan cat material of all multiples of the **Cat Blue Canvas Pencil Pouch** (WM-58-9-1, WM-58-10-1, WM-58-11-1) contained lead above 90 ppm.
- The purple material of all multiples of the **Monster High Purple Pencil Pouch** (WM-59-1-6, WM-59-2-1, WM-59-3-1) contained lead above 90 ppm.
- The internal white seam tape of all multiples of the **Disney's Coco Blue Pencil Pouch** (WM-59-5-6, WM-59-6-1, WM-59-7-1) contained lead above 90 ppm.
- The printed material of all multiples of the **Trolls Character Pink Pencil Pouch** (WM-59-9-6, WM-59-10-1, WM-59-11-1) contained lead above 90 ppm.
- The internal black seam tape of all multiples of the **Ultimate Spiderman Red Pencil Pouch** (WM-59-13-6, WM-59-14-1, WM-59-15-1) contained lead above 90 ppm and cadmium above 75 ppm.
- The internal white seam tape of all multiples of the **Trolls Poppy Pink and Purple Pencil Pouch** (WM-59-17-6, WM-59-18-1, WM-59-19-1) contained lead above 90 ppm. The samples for WM-59-17 and WM-59-19 also contained cadmium levels above 75 ppm, with the sample for WM-59-18 just below the level of concern at 72.5 ppm. The relative standard deviation between the three samples is 7.3%.
- The internal white seam tape of all multiples of the **Disney's Moana Pink and Blue Pencil Pouch** (WM-59-21-8, WM-59-22-1, WM-59-23-1) contained cadmium above 75 ppm.
- The red boot outer material of all multiples of the **Assorted Boot Pencil Pouch** multi-pack (WM-60-1-19, WM-60-2-1, WM-60-3-1) contained lead above 90 ppm.
- The internal black seam tape of all multiples of the **Monster High Purple Pencil Pouch** (WM-61-9-1, WM-61-10-1, WM-61-11-1) contained lead above 90 ppm and cadmium above 75 ppm.
- The upper zipper pull and slide of all multiples of the **Spiderman 2-Pocket Backpack** (WM-61-13-1, WM-61-14-1, WM-61-15-1) contained lead above 90 ppm.

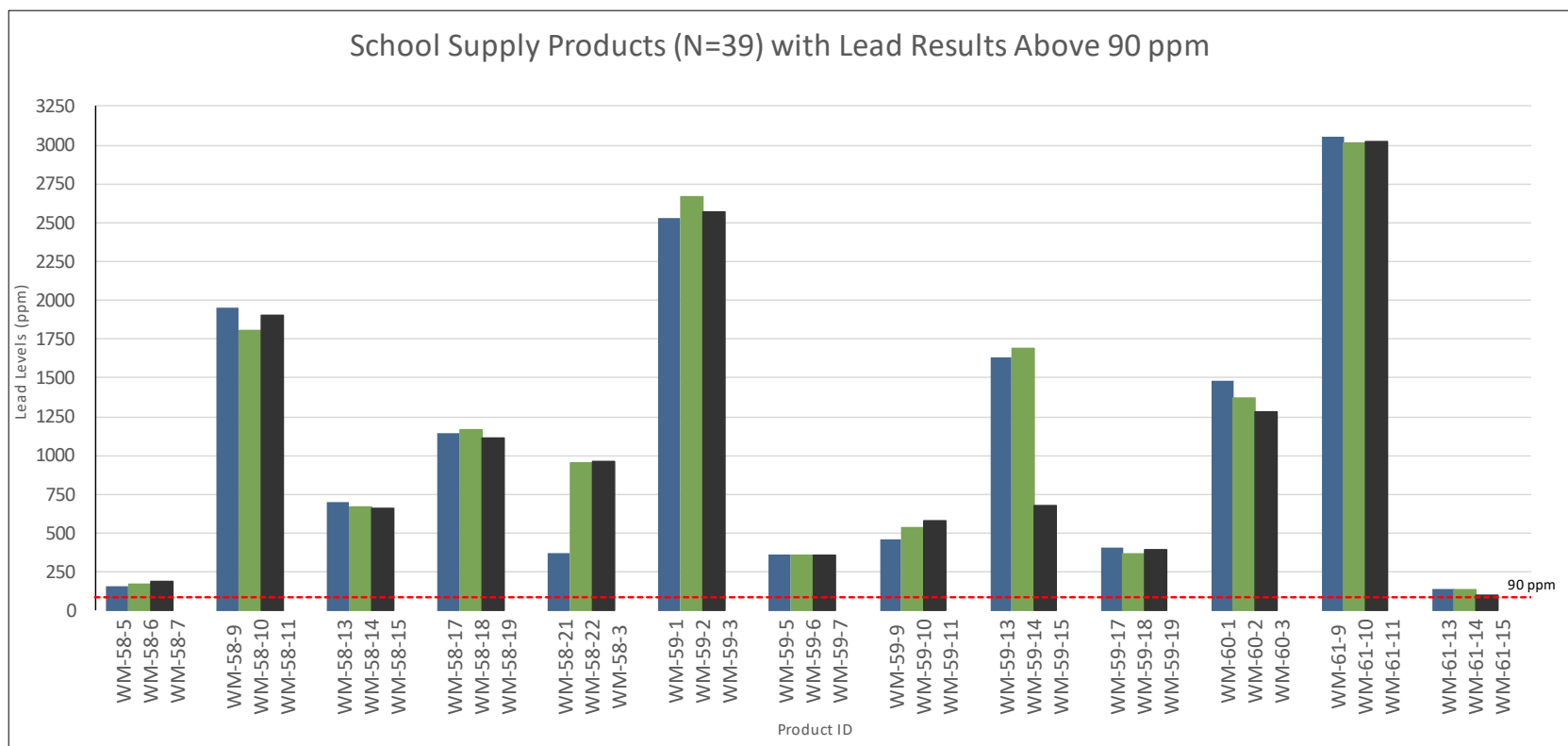


Figure 3. Summary of lead results shown in sets of product multiples with results above 90 ppm for school supply products tested in the 2023 School Supplies study.

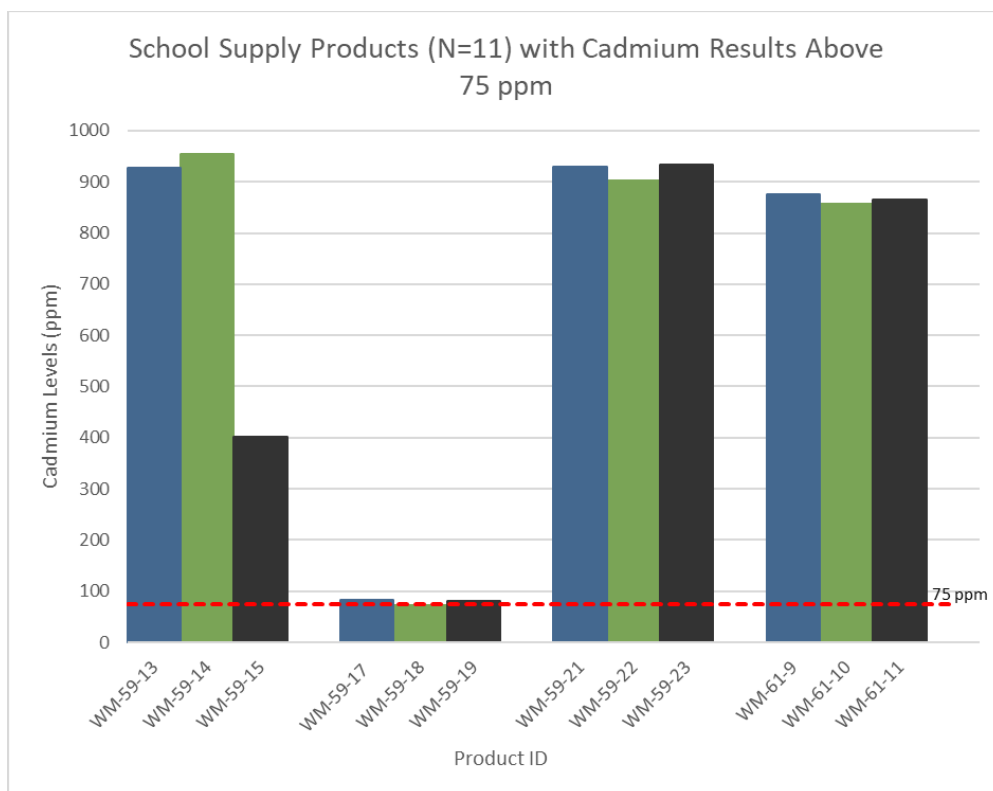


Figure 4. Summary of cadmium results shown in sets of product multiples with results above 75 ppm for school supply products tested in the 2023 School Supplies Study.

WM-59-18-1 results were below 75 ppm (72.5 ppm).

We tested products in multiples of three to assess potential variability among items that appeared to be the same product. We found that the majority (16 out of 20) of the product multiple sets tested contained similar levels of lead and cadmium. The relative standard deviation (RSD) was used to quantify the similarity between the product multiple results (Appendix A). We use an RSD of $\leq 20\%$ as a quality objective in product testing studies for assessing laboratory data quality and precision. In this study, we also used RSD to compare the results of product multiples, where an RSD of $\leq 20\%$ means there was little variability among results and the samples are similar. In 16 of 20 product multiple sets, the RSD of the results was under 20%. Those samples with RSD greater than 20% are listed below:

- The camo fabric material of all multiples of the **Green Camo Pencil Pouch** (WM-58-21-1, WM-58-22-3, WM-58-23-1) contained lead above 90 ppm and cadmium below 75 ppm. The RSD of the three multiples was 44.2% for lead and 72% for cadmium. The fabric color for WM-58-21-1 was slightly different than the other multiples; however, the UPC was the same.
- The internal black seam tape of all multiples of the **Ultimate Spiderman Red Pencil Pouch** (WM-59-13-6, WM-59-14-1, WM-59-15-1) contained lead above 90 ppm and

cadmium above 75 ppm. The RSD of the three multiples was 42.8% for lead and 40.9% for cadmium. The product multiples were not visually different.

- The zipper pull and slide composites of all multiples of Yellow Hearts Pouch from the **Assorted Pink and Yellow Pencil Pouch with Dots and Hearts** multi-pack (WM-60-9, WM-60-10, WM-60-11) contained lead above the reporting limit. The RSD between the three multiples was 55%. The product multiples were not visually different.
- The zipper pull and slide composites of all multiples of the **Assorted Blue and Green Glitter Pencil Pouch** multi-pack (WM-60-13-1, WM-60-13-3, WM-60-15) contained lead and cadmium above the reporting limit. Due to the missing fourth multiple, a second item from WM-60-13 was chosen at random. One was a blue pouch (WM-60-13-1), and the other was a green pouch (WM-60-13-3). WM-60-15 was a blue pouch. The laboratory results for both blue pouches (WM-60-13-1 and WM-60-15) were similar. Lead was detected at 62.8 ppm and 64.6 ppm, and cadmium at 8.62 ppm and 8.82 ppm, respectively. Lab results from the green pouch (WM-60-13-3) were significantly lower at 25 ppm for lead and 2.96 ppm for cadmium. The RSD between the three multiples was 44.0% for lead and 48.9% for cadmium.

Conclusions

Fifty-seven of 60 samples (95%) of product components tested contained lead, cadmium, or both metals above the reporting limit of 1.0 ppm. We found that forty-two of 60 samples (70%) of product components tested contained lead, cadmium, or both metals above the levels of concern of 90 ppm for lead and 75 ppm for cadmium.

We assumed that individual items marketed as the same product would be manufactured with the same materials. We tested each unique product in multiples of three to test this assumption. Eighty percent (80%) of the lead and cadmium results across product multiple sets were highly similar, with an RSD of less than 20%. We handled, processed, and stored each product in the same manner once received in Ecology's Product Testing Prep Room. Once at the laboratory, all samples were stored, handled, prepared, and tested in the same manner. The variance in laboratory results among product multiples may be due to many possibilities, including differences in raw materials, manufacturing processes, production batches, distribution batches, or a combination of multiple factors.

References

- CDC [Centers for Disease Control and Prevention]. 2024. *About Childhood Lead Poisoning Prevention*. Retrieved from <https://www.cdc.gov/lead-prevention/about/index.html>.
- CPSC [U.S. Consumer Product Safety Commission]. 2023a. *The Consumer Product Safety Improvement Act (CPSIA)*. Retrieved from <https://www.cpsc.gov/Regulations-Laws--Standards/Statutes/The-Consumer-Product-Safety-Improvement-Act>.
- CPSC [U.S. Consumer Product Safety Commission]. 2023b. Retrieved from <https://www.cpsc.gov/Business--Manufacturing/Business-Education/Lead/Lead-in-Paint>.
- Sekerak, S. 2024. School Supplies 2018: Lead and Cadmium in School Supplies. Publication 24-03-013. Washington State Department of Ecology, Olympia. <https://apps.ecology.wa.gov/publications/SummaryPages/2403013.html>
- Smith, L. 2023. School Supplies 2023: Addendum to Quality Assurance Project Plan: Lead and Cadmium in School Supplies 2021. Publication 23-03-117. Washington State Department of Ecology, Olympia. <https://apps.ecology.wa.gov/publications/SummaryPages/2303117.html>
- Trumbull, K. 2022. Quality Assurance Project Plan: Lead and Cadmium in School Supplies, 2021. Publication 22-03-108. Washington State Department of Ecology, Olympia. <https://apps.ecology.wa.gov./publications/SummaryPages/2203108.html>
- Trumbull, K. 2024a. School Supplies 2019: Lead and Cadmium in School Supplies. Publication 24-03-014. Washington State Department of Ecology, Olympia. <https://apps.ecology.wa.gov/publications/SummaryPages/2403014.html>
- Trumbull, K. 2024b. School Supplies 2021: Lead and Cadmium in School Supplies. Publication 24-03-015. Washington State Department of Ecology, Olympia. <https://apps.ecology.wa.gov/publications/SummaryPages/2403015.html>

Appendix A.

Table A-1. Summary Results for School Supplies 2023.

Product Description	Component ID	Component Description	UPC Number	Brand	Companies Associated (Distributor, Manufacturer, Importer, Licensee)	Lead (ppm)	Lead Relative Standard Deviation (RSD)	Cadmium (ppm)	Cadmium Relative Standard Deviation (RSD)
Plush Bee Backpack 1	WM-58-1-18	Upper Zipper Pull and Slide	—	kakoo	Walmart.com, Joybuy	1U	—	1U	—
Plush Bee Backpack 2	WM-58-2-1	Upper Zipper Pull and Slide	—	kakoo	Walmart.com, Joybuy	1U	—	1U	—
Plush Bee Backpack 3	WM-58-3-1	Upper Zipper Pull and Slide	—	kakoo	Walmart.com, Joybuy	1U	0.0	1U	0.0
Cute White Panda Pencil Pouch 1	WM-58-5-5	Upper Zipper Pull and Slide	—	Yiwula	Walmart.com, Joybuy	156	—	1.95	—
Cute White Panda Pencil Pouch 2	WM-58-6-1	Upper Zipper Pull and Slide	—	Yiwula	Walmart.com, Joybuy	174	—	1.63	—
Cute White Panda Pencil Pouch 3	WM-58-7-1	Upper Zipper Pull and Slide	—	Yiwula	Walmart.com, Joybuy	191	10.1	2.19	14.6
Cat Blue Canvas Pencil Pouch 1	WM-58-9-1	Tan Cat Material	—	Papaba	Walmart.com, Joybuy	1950	—	1U	—
Cat Blue Canvas Pencil Pouch 2	WM-58-10-1	Tan Cat Material	—	Papaba	Walmart.com, Joybuy	1810	—	1U	—

Product Description	Component ID	Component Description	UPC Number	Brand	Companies Associated (Distributor, Manufacturer, Importer, Licensee)	Lead (ppm)	Lead Relative Standard Deviation (RSD)	Cadmium (ppm)	Cadmium Relative Standard Deviation (RSD)
Cat Blue Canvas Pencil Pouch 3	WM-58-11-1	Tan Cat Material	—	Papaba	Walmart.com, Joybuy	1900	3.8	1U	0.0
Black 3-Ring Binder Pencil Pouch 1	WM-58-13-2	Zipper Pull and Slide	—	Advantus	Walmart.com, Joybuy	696	—	32.8	—
Black 3-Ring Binder Pencil Pouch 2	WM-58-14-1	Zipper Pull and Slide	—	Advantus	Walmart.com, Joybuy	667	—	33.8	—
Black 3-Ring Binder Pencil Pouch 3	WM-58-15-1	Zipper Pull and Slide	—	Advantus	Walmart.com, Joybuy	664	2.6	26	13.8
Black Shark Backpack with USB Port 1	WM-58-17-20	Red Mouth Material	—	Chamair	Walmart.com, Joybuy	1140	—	27.4	—
Black Shark Backpack with USB Port 2	WM-58-18-1	Red Mouth Material	—	Chamair	Walmart.com, Joybuy	1170	—	27.7	—
Black Shark Backpack with USB Port 3	WM-58-19-1	Red Mouth Material	—	Chamair	Walmart.com, Joybuy	1110	2.6	26.2	2.9
Green Camo Pencil Pouch 1 (Gray/Green)	WM-58-21-1	Side Camo Material	—	Xinrui	Walmart.com, Joybuy	374	—	3.1	—
Green Camo Pencil Pouch 2	WM-58-22-3	Side Camo Material	—	Xinrui	Walmart.com, Joybuy	953	—	24.7	—
Green Camo Pencil Pouch 3	WM-58-23-1	Side Camo Material	—	Xinrui	Walmart.com, Joybuy	965	44.2 [^]	26.7	72.0 [^]

Product Description	Component ID	Component Description	UPC Number	Brand	Companies Associated (Distributor, Manufacturer, Importer, Licensee)	Lead (ppm)	Lead Relative Standard Deviation (RSD)	Cadmium (ppm)	Cadmium Relative Standard Deviation (RSD)
Monster High Purple Pencil Pouch 1	WM-59-1-6	Purple Material	4714670059058	Mattel	Walmart.com, Directwells, Shinn Jee Enterprise Co., Ltd.	2530	—	2.74	—
Monster High Purple Pencil Pouch 2	WM-59-2-1	Purple Material	4714670059058	Mattel	Walmart.com, Directwells, Shinn Jee Enterprise Co., Ltd.	2670	—	2.83	—
Monster High Purple Pencil Pouch 3	WM-59-3-1	Purple Material	4714670059058	Mattel	Walmart.com, Directwells, Shinn Jee Enterprise Co., Ltd.	2570	2.8	2.88	2.5
Disney's Coco Blue Pencil Pouch 1	WM-59-5-6	Internal White Seam Tape	6927219880893	Disney	Walmart.com, Directwells, Dynamic International Co., Ltd.	362	—	63.8	—
Disney's Coco Blue Pencil Pouch 2	WM-59-6-1	Internal White Seam Tape	6927219880893	Disney	Walmart.com, Directwells, Dynamic International Co., Ltd.	357	—	62.9	—
Disney's Coco Blue Pencil Pouch 3	WM-59-7-1	Internal White Seam Tape	6927219880893	Disney	Walmart.com, Directwells, Dynamic International Co., Ltd.	361	0.7	64.2	1.0
Trolls Character Pink Pencil Pouch 1	WM-59-9-6	Printed Material	6927219880183	DreamWorks	Walmart.com, Directwells, DWA LLC	462	—	62.4	—
Trolls Character Pink Pencil Pouch 2	WM-59-10-1	Printed Material	6927219880183	DreamWorks	Walmart.com, Directwells, DWA LLC	539	—	65.3	—
Trolls Character Pink Pencil Pouch 3	WM-59-11-1	Printed Material	6927219880183	DreamWorks	Walmart.com, Directwells, DWA LLC	577	11.1	69.7	5.6

Product Description	Component ID	Component Description	UPC Number	Brand	Companies Associated (Distributor, Manufacturer, Importer, Licensee)	Lead (ppm)	Lead Relative Standard Deviation (RSD)	Cadmium (ppm)	Cadmium Relative Standard Deviation (RSD)
Ultimate Spiderman Red Pencil Pouch 1	WM-59-13-6	Internal Black Seam Tape	6927219880022	Marvel	Walmart.com, Directwells	1630	—	927	—
Ultimate Spiderman Red Pencil Pouch 2	WM-59-14-1	Internal Black Seam Tape	6927219880022	Marvel	Walmart.com, Directwells	1690	—	954	—
Ultimate Spiderman Red Pencil Pouch 3	WM-59-15-1	Internal Black Seam Tape	6927219880022	Marvel	Walmart.com, Directwells	675	42.8 [^]	402	40.9 [^]
Trolls Poppy Pink and Purple Pencil Pouch 1	WM-59-17-6	Internal White Seam Tape	4714127515076	DreamWorks Trolls	Walmart.com, Directwells, Pustaka Sri Dunia Sdn. Bhd.	403	—	83.3	—
Trolls Poppy Pink and Purple Pencil Pouch 2	WM-59-18-1	Internal White Seam Tape	4714127515076	DreamWorks Trolls	Walmart.com, Directwells, Pustaka Sri Dunia Sdn. Bhd.	368	—	72.5	—
Trolls Poppy Pink and Purple Pencil Pouch 3	WM-59-19-1	Internal White Seam Tape	4714127515076	DreamWorks Trolls	Walmart.com, Directwells, Pustaka Sri Dunia Sdn. Bhd.	394	4.7	81.4	7.3
Moana Pink and Blue Pencil Pouch 1	WM-59-21-8	Internal White Seam Tape	6927219880077	Disney	Walmart.com, Directwells, Dynamic International Co., Ltd.	20.2	—	929	—
Moana Pink and Blue Pencil Pouch 2	WM-59-22-1	Internal White Seam Tape	6927219880077	Disney	Walmart.com, Directwells, Dynamic International Co., Ltd.	20.9	—	903	—

Product Description	Component ID	Component Description	UPC Number	Brand	Companies Associated (Distributor, Manufacturer, Importer, Licensee)	Lead (ppm)	Lead Relative Standard Deviation (RSD)	Cadmium (ppm)	Cadmium Relative Standard Deviation (RSD)
Moana Pink and Blue Pencil Pouch 3	WM-59-23-1	Internal White Seam Tape	6927219880077	Disney	Walmart.com, Directwells, Dynamic International Co., Ltd.	20.1	2.1	933	1.8
Assorted Boot Pencil Pouch 1	WM-60-1-19	Red Boot: Outer Material	838157004622	Inkology	Walmart.com, MyOfficeInnovations, Inkology, Inc	1480	—	1U	—
Assorted Boot Pencil Pouch 2	WM-60-2-1	Red Boot: Outer Material	838157004622	Inkology	Walmart.com, MyOfficeInnovations, Inkology, Inc	1370	—	1U	—
Assorted Boot Pencil Pouch 3	WM-60-3-1	Red Boot: Outer Material	838157004622	Inkology	Walmart.com, MyOfficeInnovations, Inkology, Inc	1280	7.3	1U	0
Assorted Fruit Slice Pencil Pouch 1	WM-60-5-3	Lemon: Zipper Pull and Slide	838157004417	Inkology	Walmart.com, MyOfficeInnovations, Inkology, Inc	21.8	—	2.16	—
Assorted Fruit Slice Pencil Pouch 2	WM-60-6-1	Lemon: Zipper Pull and Slide	838157004417	Inkology	Walmart.com, MyOfficeInnovations, Inkology, Inc	21.5	—	1.63	—
Assorted Fruit Slice Pencil Pouch 3	WM-60-7-1	Lemon: Zipper Pull and Slide	838157004417	Inkology	Walmart.com, MyOfficeInnovations, Inkology, Inc	23.4	4.6	1.56	18.4

Product Description	Component ID	Component Description	UPC Number	Brand	Companies Associated (Distributor, Manufacturer, Importer, Licensee)	Lead (ppm)	Lead Relative Standard Deviation (RSD)	Cadmium (ppm)	Cadmium Relative Standard Deviation (RSD)
Assorted Pink and Yellow Pencil Pouch with Dots and Hearts 1	WM-60-9-8	Yellow Hearts Pouch: Zipper Pull and Slide	838157004288	Inkology	Walmart.com, MyOfficeInnovations, Inkology, Inc	28.6	—	14.1	—
Assorted Pink and Yellow Pencil Pouch with Dots and Hearts 2	WM-60-10-1	Yellow Hearts Pouch: Zipper Pull and Slide	838157004288	Inkology	Walmart.com, MyOfficeInnovations, Inkology, Inc	29.7	—	13.6	—
Assorted Pink and Yellow Pencil Pouch with Dots and Hearts 3	WM-60-11-1	Yellow Hearts Pouch: Zipper Pull and Slide	838157004288	Inkology	Walmart.com, MyOfficeInnovations, Inkology, Inc	69.8	55.0 [^]	14.9	4.6
Assorted Blue and Green Glitter Pencil Pouch 1	WM-60-13-1	Blue Pouch: Zipper Pull and Slide	838157004028	Inkology	Walmart.com, MyOfficeInnovations, Inkology, Inc	62.8	—	8.62	—
Assorted Blue and Green Glitter Pencil Pouch 1	WM-60-13-3	Green Pouch: Zipper Pull and Slide	838157004028	Inkology	Walmart.com, MyOfficeInnovations, Inkology, Inc	25	—	2.96	—
Assorted Blue and Green Glitter Pencil Pouch 3	WM-60-15-6	Blue Pouch: Zipper Pull and Slide	838157004028	Inkology	Walmart.com, MyOfficeInnovations, Inkology, Inc	64.6	44.0 [^]	8.82	48.9 [^]

Product Description	Component ID	Component Description	UPC Number	Brand	Companies Associated (Distributor, Manufacturer, Importer, Licensee)	Lead (ppm)	Lead Relative Standard Deviation (RSD)	Cadmium (ppm)	Cadmium Relative Standard Deviation (RSD)
Frozen Pink Pencil Pouch 1	WM-61-1-1	Zipper Pull and Slide	6940127820102	Disney	Walmart.com, S-Shopper, E- Match Enterprise Ltd.	17.9	—	2.54	—
Frozen Pink Pencil Pouch 2	WM-61-2-1	Zipper Pull and Slide	6940127820102	Disney	Walmart.com, S-Shopper, E- Match Enterprise Ltd.	22.1	—	2.61	—
Frozen Pink Pencil Pouch 3	WM-61-3-1	Zipper Pull and Slide	6940127820102	Disney	Walmart.com, S-Shopper, E- Match Enterprise Ltd.	17.9	12.6	2.47	2.8
Disney Princess Pink Pencil Pouch 1	WM-61-5-1	Zipper Pull and Slide	6940127826739	Disney	Walmart.com, S-Shopper, E- Match Enterprise Ltd.	16.6	—	2.91	—
Disney Princess Pink Pencil Pouch 2	WM-61-6-1	Zipper Pull and Slide	6940127826739	Disney	Walmart.com, S-Shopper, E- Match Enterprise Ltd.	17.7	4.5	2.42	13.0
Disney Princess Pink Pencil Pouch 4 (Light Pink)	WM-61-8-1	Zipper Pull and Slide	6940127826746*	Disney	Walmart.com, S-Shopper, E- Match Enterprise Ltd.	15	—	2.81	—
Monster High Purple Pencil Pouch 1	WM-61-9-6	Black Piping	4714670059058	Mattel	Walmart.com, S-Shopper, Shinn Jee Enterprise Co., Ltd.	3050	—	875	—
Monster High Purple Pencil Pouch 2	WM-61-10-1	Internal Black Seam Tape	4714670059058	Mattel	Walmart.com, S-Shopper, Shinn Jee Enterprise Co., Ltd.	3010	—	857	—
Monster High Purple Pencil Pouch 3	WM-61-11-1	Internal Black Seam Tape	4714670059058	Mattel	Walmart.com, S-Shopper, Shinn Jee Enterprise Co., Ltd.	3020	0.7	866	1.0

Product Description	Component ID	Component Description	UPC Number	Brand	Companies Associated (Distributor, Manufacturer, Importer, Licensee)	Lead (ppm)	Lead Relative Standard Deviation (RSD)	Cadmium (ppm)	Cadmium Relative Standard Deviation (RSD)
Spiderman 2-Pocket Backpack 1	WM-61-13-1	Upper Zipper Pull and Slide	840716252542	Marvel	Walmart.com, S-Shopper, Fast Forward New York	143 J	—	19 J	—
Spiderman 2-Pocket Backpack 2	WM-61-14-1	Upper Zipper Pull and Slide	840716252542	Marvel	Walmart.com, S-Shopper, Fast Forward New York	134	—	27.3	—
Spiderman 2-Pocket Backpack 3	WM-61-15-1	Upper Zipper Pull and Slide	840716252542	Marvel	Walmart.com, S-Shopper, Fast Forward New York	101	17.6	24.8	18.0

Bold = Detections above levels of concern (90ppm for lead, 75ppm for cadmium).

UPC = Universal Product Code.

U = Analyte not detected at or above reported result.

J = Analyte was positively identified and the value is approximate.

*= This product UPC indicates it is a different product than the other multiples. The analysis values were not included in the RSD.

^= RSD result above 20%.