TOXIC CHEMICALS IN DOLLAR STORE PRODUCTS: 2022 REPORT

Discount retailers continue to push toxic superheroes, food packaging, cookware and electronics
EXECUTIVE SUMMARY

The Campaign for Healthier Solutions a project of the Coming Clean and the Environmental Justice and Health Alliance commissioned The Ecology Center Healthy Stuff Lab to conduct a screening of consumer products sold at discount retailers, also known as dollar stores. The target retailers include Dollar Tree, Family Dollar, Dollar General, Five Below and 99 Cents Only Stores. This report presents a summary of the results of the testing and highlights select products with hazardous chemicals of concern.

Sample Collection: In early 2021, 226 products were purchased from all of the leading dollar store retailers in the US and Canada. Products were purchased from seven states (Michigan, Pennsylvania, California, New Mexico, Washington, Maine, Texas) and Ontario, Canada. Products tested included 226 consumer products, 33 cans of food, and 22 packages of microwave popcorn. Receipts from 28 store purchases were also tested. The 226 products contained a total of 635 unique components or materials. Each of these were tested using one or more test methods, depending on the typical chemicals of concern for that product type. For food products, the packaging, not the food, was tested.

Chemicals of concern are those which, due to their inherent hazardous properties, present a known or reasonably suspected risk to human health and/or the environment. The levels of concern for each chemical were established by Healthy Stuff Lab by reviewing levels restricted in one or more of the most protective government, corporate, or third-party standards on hazards in consumer products.

These levels are similar to those used in our 2015 sampling of dollar store products. You can access the 2015 report here.

Products were subjected to 4 different analytical techniques:

High-definition X-ray fluorescence spectroscopy (HD XRF): 635 product components were screened for elements of interest by HD XRF using an HD Mobile spectrometer by XOS. This technique measures levels of elements heavier than aluminum on the periodic table. This includes toxic metals such as lead and cadmium as well as bromine, chlorine, and phosphorus that, depending on the matrix, can indicate flame retardant chemicals.

Fourier Transform Infrared (FTIR) spectroscopy: A subset of components were analyzed by FTIR to determine the polymer type (for example, cotton or polyethylene) and major additives. A subset were also subject to solvent extraction followed by FTIR to test for the presence of additives such as plasticizers or flame retardant chemicals.

Gas Chromatography/Mass Spectrometry (GC/MS) Analysis: Eleven products determined to contain ortho-phthalates (“phthalates”) or alternative plasticizers according to our FTIR screening were sent for further analysis at Eurofins, a contract laboratory. Eurofins quantified phthalates by following the CPSC test method CPSC-CH-C1001-09.4. The method uses solvent extraction followed by internal standard addition and analysis of the extract by gas chromatography-mass spectrometry (GC-MS) for phthalates and other plasticizers of interest. The lab tested for eleven phthalates and four alternative plasticizers.

Total Fluorine by Oxygen Flask Combustion and Ion-Selective Electrode: Select food packaging was evaluated for possible PFAS presence at Galbraith Laboratories by measuring total fluorine. This method detects fluorine from both polymeric and non-polymeric PFAS and thus is used to screen items for likely PFAS.

Threshold Levels, in parts per million

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>&gt; 100</td>
</tr>
<tr>
<td>Bromine</td>
<td>&gt; 400</td>
</tr>
<tr>
<td>Cadmium</td>
<td>&gt; 100</td>
</tr>
<tr>
<td>Chlorine</td>
<td>&gt; 1,000</td>
</tr>
<tr>
<td>Chromium</td>
<td>&gt; 100</td>
</tr>
<tr>
<td>Mercury</td>
<td>&gt; 100</td>
</tr>
<tr>
<td>Lead</td>
<td>&gt; 100</td>
</tr>
<tr>
<td>Antimony</td>
<td>&gt; 100</td>
</tr>
<tr>
<td>Tin</td>
<td>&gt; 100</td>
</tr>
</tbody>
</table>
CHEMICAL HAZARD SCREENING SUMMARY

The preliminary screening results for products indicate a number of chemical hazards are present in these products. **Overall, one-half (53%) of the products screened had one or more chemicals of concern.** The following concerns were identified in the products which were tested.

- Canned food products with toxic interior can coatings, including BPA-based epoxy and PVC can body coatings
- Pans and cookware coated with PTFE (a PFAS coating) and BPA-based epoxy
- Microwave popcorn products with PFAS coatings inside the packaging. 100% of microwave popcorn tested positive for PFAS coatings
- Bisphenol S in 100% of store receipts tested from all retailers
- Products made with flexible PVC which had banned, regulated or inadequately studied plasticizers
- Consumer electronics with lead solder, flame retardants and phthalate plasticizers
- A variety of products which contained other chemicals of concern, including antimony compounds, organotins and bromine

### Number of Products with Chemical of Concern (COC) Detected, above screening level

#### ALL PRODUCTS - US & CANADA RETAILED

<table>
<thead>
<tr>
<th>Retailer</th>
<th># Products</th>
<th>1 or more COC</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five Below</td>
<td>38</td>
<td>25</td>
<td>66%</td>
</tr>
<tr>
<td>Family Dollar</td>
<td>37</td>
<td>18</td>
<td>49%</td>
</tr>
<tr>
<td>Dollar Tree</td>
<td>87</td>
<td>52</td>
<td>60%</td>
</tr>
<tr>
<td>Dollar General</td>
<td>32</td>
<td>12</td>
<td>38%</td>
</tr>
<tr>
<td>99 Cents Only Stores</td>
<td>32</td>
<td>13</td>
<td>44%</td>
</tr>
<tr>
<td><strong>ALL - 2021</strong></td>
<td>226</td>
<td>120</td>
<td>53%</td>
</tr>
<tr>
<td><strong>ALL – 2015 Report</strong></td>
<td>164</td>
<td>132</td>
<td>80%</td>
</tr>
</tbody>
</table>

#### US RETAILED PRODUCTS

<table>
<thead>
<tr>
<th>Retailer</th>
<th># Products</th>
<th>1 or more COC</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five Below</td>
<td>38</td>
<td>25</td>
<td>66%</td>
</tr>
<tr>
<td>Family Dollar</td>
<td>37</td>
<td>18</td>
<td>49%</td>
</tr>
<tr>
<td>Dollar Tree</td>
<td>67</td>
<td>40</td>
<td>61%</td>
</tr>
<tr>
<td>Dollar General</td>
<td>32</td>
<td>12</td>
<td>38%</td>
</tr>
<tr>
<td>99 Cents Only Stores</td>
<td>32</td>
<td>13</td>
<td>41%</td>
</tr>
<tr>
<td><strong>ALL</strong></td>
<td>206</td>
<td>108</td>
<td>53%</td>
</tr>
</tbody>
</table>

#### CANADA RETAILED PRODUCTS

<table>
<thead>
<tr>
<th>Retailer</th>
<th># Products</th>
<th>1 or more COC</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dollar Tree</td>
<td>20</td>
<td>12</td>
<td>60%</td>
</tr>
</tbody>
</table>

*Note: This data is preliminary and subject to change as further analysis of these products is completed.*
FIVE BELOW PRODUCT HIGHLIGHTS

DISNEY FROZEN II HAIR SET ASSEMBLY
Retailer: Five Below  
Brand/Distributor: Townley  
UPC: 1956542666  
Retailer State: Maine  
Chemicals of concern: PVC components (>50% chlorine), Ortho Phthalate plasticizer

SQUISHY UNICORN HEADPHONES
Retailer: Five Below  
Brand/Distributor: Traxx, 1616 Holdings, Inc.  
UPC: 9223406267  
Retailer State: California  
Chemicals of concern: Ortho Phthalate plasticizer

DISNEY PRINCESS KIDSAFE WIRELESS HEADPHONES, AGES 6+
Retailer: Five Below  
Brand/Distributor: Disney, 1616 Holdings, Inc.  
UPC: 9223406245  
Retailer State: Maine  
Chemicals of concern: TDCIPP (chlorinated tris) flame retardant in earphone foam, 65.6% (656,000 ppm) lead in solder
MINNIE MOUSE HEADPHONES
Retailer: Five Below  
Brand/Distributor: Disney, 1616 Holdings, Inc.  
UPC: 9223401735  
Retailer State: Michigan  
Chemicals of concern: PVC components (>50% chlorine), Ortho Phthalate plasticizer, TCPP flame retardant, 56% (560,623 ppm) lead in solder

MARVEL AVENGERS KID SAFE HEADPHONES
Retailer: Five Below  
Brand/Distributor: 1616 Holdings, Inc  
UPC: 9223405437  
Retailer State: Michigan  
Chemicals of concern: PVC components (>50% chlorine), trichlorophenyl phosphate (TCPP) flame retardant, 38% (381,869 ppm) lead in solder

SUPERMAN HEADPHONES
Retailer: Five Below  
Brand/Distributor: Sakar  
UPC: 2133180826  
Retailer State: Michigan  
Chemicals of concern: PVC components (>50% chlorine), Ortho Phthalate plasticizer, trichlorophenyl phosphate (TCPP) flame retardant, 61% (612,081 ppm) lead in solder
DISCO COLOR CHANGING BATH LIGHT
Retailer: Five Below  
Brand/Distributor: Xtreme Tech, JemAccessories  
UPC: 0510622354  
Retailer State: Michigan  
Chemicals of concern: Ortho Phthalate plasticizer, 45.6% (456,455 ppm) lead in solder

CAMPBELL’S CHICKEN & STAR SHAPE PASTA
Retailer: Five Below  
Brand/Distributor: Campbell’s  
UPC: 5100015076  
Chemicals of concern: PVC copolymer can coating

PURCHASE RECEIPTS
Retailer: Five Below  
UPC: N/A  
Retailer State: Multiple  
Chemicals of concern: All receipts tested positive for Bisphenol S
DOLLAR TREE & FAMILY DOLLAR PRODUCT HIGHLIGHTS

COOKING CONCEPTS PIZZA PAN
Retailer: Dollar Tree
Brand/Distributor: Cooking Concepts
UPC: 3927715283
Retailer State: Michigan
Chemicals of concern: BPA-based epoxy based non-stick coating

COOKING CONCEPTS CAKE PAN
Retailer: Dollar Tree
Brand/Distributor: Cooking Concepts
UPC: 3927715283
Retailer State: Michigan
Chemicals of concern: BPA-based epoxy based non-stick coating

FAMILY CHEF 10-INCH FRY PAN NON-STICK
Retailer: Family Dollar
Brand/Distributor: Family Chef
UPC: 32251294525
Retailer State: Michigan
Chemicals of concern: PTFE (PFAS) based non-stick coating
FUNNY TEETH

Retailer: Dollar Tree  
Brand/Distributor: Joking Around, Green-brier International, Inc.  
UPC: 3927772533  
Retailer State: Ontario, Canada  
Chemicals of concern: 17.4% (174,000 ppm) lead in solder

KIDS MUSICAL TOY CAR

Retailer: Dollar Tree  
Brand/Distributor: Kidgets, Midwood Brands, LLC  
UPC: 3225157309  
Retailer State: Texas  
Chemicals of concern: 17.4% (174,000 ppm) lead in solder

VIVITAR KIDSAFE STEREO HEADPHONES

Retailer: Family Dollar  
Brand/Distributor: Vivitar, Skar International  
UPC: 8106648531  
Retailer State: Texas  
Chemicals of concern: 2.2% lead (22,000 ppm) in solder; PVC cable insulation and coated fabrics with DOTP plasticizers
TOXIC CHEMICALS IN DOLLAR STORE PRODUCTS

AUDIO CABLE WITH CARRYING CASE

Retailer: Dollar Tree
Brand/Distributor: Greenbrier International
UPC: 3927789219
Retailer State: Michigan
Chemicals of concern: PVC components (>50% chlorine), Phthalate and DOTP plasticizers

EARBUDS

Retailer: Dollar Tree
UPC: 3927755468
Retailer State: Michigan
Chemicals of concern: PVC components (>50% chlorine), DOTP plasticizer, 14.1% (141,000 ppm) lead in solder

POP WEAVER BUTTER MICROWAVE POPCORN

Retailer: Dollar Tree
Brand/Distributor: Pop Weaver
UPC: 4166702929
Retailer State: Texas
Chemicals of concern: 353 ppm Total Fluorine (PFAS grease-proof coating present)
DOLLY MIXED VEGETABLES
Retailer: Dollar Tree
Brand/Distributor: Dolly
UPC: 3913957419
Chemicals of concern: BPA-based epoxy

DEERFIELD MIXED VEGETABLE
Retailer: Dollar Tree
Brand/Distributor: Deerfield
UPC: 5306900571
Chemicals of concern: BPA-based epoxy

PURCHASE RECEIPTS
Retailer: Dollar Tree and Family Dollar
UPC: N/A
Retailer State: Multiple
Chemicals of concern: All receipts tested positive for Bisphenol S
DOLLAR GENERAL PRODUCT HIGHLIGHTS

ORVILLE REDENBACHER’S POPCORN
Retailer: Dollar General
Retailer State: California
Chemicals of concern: 625 PPM Total Fluorine (PFAS grease-proof coating present)

TRUE LIVING 9 IN. ROUND CAKE PAN
Retailer: Dollar General
UPC: 7286701468
Retailer State: Michigan
Chemicals of concern: PTFE (PFAS Fluoro-polymer) + PES (Polyethersulfone)

WACKY LIPS
Retailer: Dollar General
UPC: 7565601355
Retailer State: California
Chemicals of concern: PVC (>50% chlorine), DOTP Plasticizer
CLOVER VALLEY SHREDDED WHITE CHICKEN

Retailer: Dollar General
Brand/Distributor: Clover Valley, Old East Main Co.
UPC: 1972216724
Retailer State: California
Chemicals of concern: PVC copolymer coating on interior of the can

EVOATION NON-STICK FRY PAN SET

Retailer: Dollar General
UPC: 635928028104
Retailer State: Michigan
Chemicals of concern: BPA-based Epoxy Coating

PURCHASE RECEIPTS

Retailer: Dollar General
UPC: N/A
Retailer State: California
Chemicals of concern: All receipts tested positive for Bisphenol S
99 CENTS ONLY STORES PRODUCT HIGHLIGHTS

NOISE REDUCING COLOR EARBUDS

Retailer: 99 Cents Only Stores
Brand/Distributor: Momentum Brands
UPC: 7641611875
Retailer State: California
Chemicals of concern: PVC components (>50% chlorine), Ortho Phthalate plasticizer, 18.3% (183,000 ppm) lead in solder

ACT II, BUTTER LOVER MICROWAVE POPCORN

Retailer: 99 Cents Only Stores
Brand/Distributor: Act II
UPC: 7615023258
Retailer State: California
Chemicals of concern: 473 ppm Total Fluorine (PFAS grease-proof coating present)

Summer is Inside Tomato Paste

Retailer: 99 Cents Only Stores
Brand/Distributor: Summer Is Inside
UPC: 7393415078
Retailer State: California
Chemicals of concern: PVC copolymer can coating
POLAR CANNED SARDINES
Retailer: 99 Cents Only Stores
Brand/Distributor: MW Polar Foods
UPC: 7402700167
Retailer State: California
Chemicals of concern: BPA-based epoxy can coating

LIBBY’S CHICKEN VIENNA SAUSAGE
Retailer: 99 Cents Only Stores
Brand/Distributor: Libby’s
UPC: 3900008669
Retailer State: California
Chemicals of concern: PVC copolymer can coating

PURCHASE RECEIPTS
Retailer: 99 Cents Only Stores
UPC: N/A
Retailer State: Multiple
Chemicals of concern: All receipts tested positive for Bisphenol S
ACKNOWLEDGEMENTS

The Campaign for Healthier Solutions is a project of the Environmental Justice Health Alliance for Chemical Policy Reform and Coming Clean. We would like to recognize the anchor groups, affiliates, and partner organizations that were essential in moving this project forward. Their continued commitment to protect Environmental Justice Communities has made the campaign’s progress over the years possible.

The products from Canada were purchased by our allies at Environmental Defence Canada.

We also would like to give a special mention to the Ecology Center Healthy Stuff Lab for testing the products we purchased, then compiling, analyzing, and explaining the data for this report. We have worked with them numerous times in the past and look forward to future collaborations.

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Harambee House – Savannah, Georgia

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Learning Disabilities Association of Maine – Windham, Maine
Environmental Defence Canada – Toronto, Canada
Clean Production Action

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