



## DUKE UNIVERSITY SCHOOL OF MEDICINE

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July 23, 2018

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### TESTING LAB INFORMATION:

Attached is a list of the outstanding tests still needed for completion of the toxicological evaluation of your company's product(s). IF A PRODUCT IS ALREADY APPROVED BUT STILL NOTES OUTSTANDING LEAD(CPSIA) TESTING, THIS IS JUST TO NOTICE YOU THAT CPSIA LEAD TESTING IS REQUIRED ANNUALLY. LEAD(LHAMA) testing is only required at the time of a formula change or 5 year review. Some laboratories that can provide testing are referenced below. When no test method is indicated, you should obtain a technical specification from the manufacturer of the ingredient. The numbers under "Test Method" can be interpreted as follows:

1. EN71.3 (1994), ASTM D5517 or their equivalent (for metal solubility testing) (Lab: b,e, k,p,q,r,s,t)
2. DCMA Synthetic intestinal juice method for extracting aromatic amines; ETAD No 212; or DIN 55 610 extraction followed by EN 14362-1 testing (Lab: k, p)
3. Test for eye or skin irritation, either in vivo {Draize} (labs: c,j,m) or in vitro {Eytex, Bovine Corneal Opacity Test or Matek EpiOcular Test, Matek EpiCutaneous Test} (Labs: d,i,t)
4. DCMA method for PCBs (polychlorinated biphenyls) in Pigments, EPA Method 8082 or their equivalent (Lab: k)
5. pH of your product (Labs: b,e,g,p,q,r,t)
6. Closed or open cup test for flammability (Setaflash; ASTM D92) (Labs: b,k,p,q,r,t)
7. % Respirable silica (respirable fraction as measured by Andreason Pipette or Sedigraph (fraction with an aerodynamic diameter of 4.25 microns or less) x crystalline silica in the 4.25 micron fraction) (Labs: h,l)
8. % asbestos fibers with an aspect ratio of 1:5 or greater and length >5 microns as determined by TEM/X-ray diffraction (Lab: g,k,l)
9. Viscosity in Saybolt unit seconds at 100 degrees Fahrenheit by Gardner Bubble Viscosity tubes, or the equivalent. (Lab: b,k,r,t)

A. Solid combustibility as measured by the FHSA test for flammable solids (hold candle flame on tip for 5 seconds. A combustible marker is one that burns for 60 sec. and drips flaming plastic) (Lab: b,h,q,r or see ACMI for test method)

B. free formaldehyde as measured by head space analysis with trapping in chromatropic acid and analysis by colorimetry or gas or ion chromatography (Lab: b,k,p,q,t)

C. monomeric ethylene oxide (GC headspace analysis method of Tegewa, or its equivalent) (Lab: b,k,p)

D: Ink laydown testing in terms of micrograms of ink lain down per cm of line (Labs: h,p,r)

E. Resiprable dust production assessment (labs: h)

F. Solubility in synthetic lung fluid (cytosol) for cobalt (lab: e)

G. Hexavalent chromium (EPA digestion method D3060A and EPA hexavalent chromium assay procedure 7196A or its equivalent) (lab: b,k,p,q,r,s,t)

H. We will need to see the manufacturer's specification for levels of this chemical in this ingredient.

I. Respirable fraction as measured by Andreason Pipette or Sedigraph (fraction with an aerodynamic diameter of 4.25 microns or less). (Labs:h,l)

J. Sensitization testing by Bueler test in guinea pigs or murine local lymph node assay (Labs: c,j,m,t)

K. Test for autocombustibility using ASTM method D6810 (labs b,h)

L. Particle size measurement by dynamic light scattering, laser scattering in aqueous hexametaphosphate solution, centrifugal photo-sedimentation or by an equivalent methodology (lab: l,o,t)

M. Testing for soluble metal using Canada's HPA Solubility Test (lab: e,p,r,s,t)

N. Aerosol flammability testing (lab: h,k,r)

O. pH and acid/alkali reserve per Canada's CCCR-2001 (lab: b,k,t)

P. Phthalate esters in plastics (lab: b,k,p,q,s)

Q. Aerosol spray pattern testing (lab: h)

R. Marker abuse testing in conformance with 16CFR1500.53 (lab: n,k,r,s)

S. Metal testing in plastics using ASTM D3335 for digestion or microwave digestion followed by EPA 3050/EPA 7420 or by XRF (lab: e,p,q,r,s)

T. Synthetic Intestinal Juice Method for Extraction (Stopford, et al, 2003) with gravimetric analysis. (lab: e)

U. Total metal testing by XRF or by AA/ICP after nitric acid (or its equivalent) digestion (lab: e,k,p,q,r,s)

V. Benzene in solvents (b,k,p,q)

W. total lead testing in conformance with CPSIA requirements in substrates, plastics and imprints, test method CPSC-CH-E1002-08\_1 (see: [http://www.cpsc.gov/PageFiles/125609/CPSC-CH-E1002-08\\_1.pdf](http://www.cpsc.gov/PageFiles/125609/CPSC-CH-E1002-08_1.pdf).) and in surface coatings and paints, test method SC-CH-E1003-09 (see: <http://www.cpsc.gov/PageFiles/128129/CPSC-CH-E1003-09.pdf>.) Testing must be done by a CPSC-approved laboratory listed at <http://www.cpsc.gov/cgi-bin/labsearch>

X. 3,3'-dichlorobenzidine: DCMA Analytical Method for the Extraction and Determination of Aromatic Nitroamines in Organic Pigments using Simulated Intestinal Juice (k).

- Y. Acrylic acid in polymers using ASTM Method D4094 (f)
- Z. Acrylonitrile in polymers (p)
  - ~. Spectrophotometric Method for the determination of CI Pigments (Violet 1 & Red 81) extracted with simulated intestinal juice solution as proposed by the Analytical Committee of the DCMA (p)
  - !. Rosin in polymers and resins (t)
- @. VOC content for non-aerosol products in line with CARB method 310:  
<http://www.arb.ca.gov/testmeth/cptm/method310.pdf> (a)
- #. PNAHs (including naphthalene) in solvents, carbon black and oils (u, v, p)
- \* ASTM D56 Closed cup Flash Point (x)

Laboratories offering tests noted above:

a. Eurofins Product Testing NA  
180 Blue Ravine Road, Ste. B  
Folsom, CA 95630, USA  
+1-800-985-5955  
web: <http://www.eurofins.com/en/about-us/laboratory-contacts/usa/eurofins-product-testing-folsom.aspx>  
email: [atl@airtoxics.com](mailto:atl@airtoxics.com)

b. Case Consulting Laboratories  
622 Rt. 10  
Whippany, NJ 07891  
Telephone: 973-428-9666  
Fax: 973-887-4419  
Email: [c.willis@case-labs.com](mailto:c.willis@case-labs.com)  
Web site: <http://www.case-labs.com>

c. Celsis Laboratory Group  
600 W. Chicago Ave., Suite 625  
Chicago, IL 60654-2822  
Telephone: 312-476-1200  
FAX: 312-476-1201  
Email: [info@celsislabs.com](mailto:info@celsislabs.com)  
Web: <http://www.celsis.com>

d. InVitro International  
17751 Sky Park East, Ste. G  
Irvine CA 92614  
Telephone 800-246-8487  
Fax: 949-851-4985  
Email: [invitro@invitrointl.com](mailto:invitro@invitrointl.com)  
Web: <http://www.invitrointl.com>

e: Kirby Health Center Toxicology Laboratory

71 N. Franklin St.

Wilkes-Barre, PA 18701

Telephone 570-822-4278

FAX: 570-825-9926

Email: [dcappellini@epix.net](mailto:dcappellini@epix.net)

Web: <http://www.kirbyhealthcenter.org/lab.html>

Results of samples sent to Kirby will be sent to you and Duke, unless you specify otherwise.

f. Polyhedron Laboratories

web site: <http://www.polyhedronlab.com/chemical-composition/wet-chemistry.html>.

address: 10626 Kinghurst

Houston, TX 77099

Tel: 281.879.8600

Fax: 281.879.8666

Email: [techsales@polyhedronlab.com](mailto:techsales@polyhedronlab.com)

web: <http://www.polyhedronlab.com/>

g. Dr. RJ Dal Santo

JMS Environmental Associates, Ltd.

816 Burr Oak Dr.

Westmont, Illinois 60559

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Email: [jmsenviro@jmsenviro.com](mailto:jmsenviro@jmsenviro.com)

web: <http://www.jmsenviro.com/>

h. Stopford Associates

3300 New Sharon Church Road

Hillsborough, NC 27278

Telephone: 919-732-7442

Fax: 919-286-5647

Email: [wstopford@earthlink.net](mailto:wstopford@earthlink.net)

i. Thomas L. Stephens & Associates

3310 Keller Springs Road, Suite 130

Carrollton, TX 75006

Telephone: 972-392-1529

FAX: 972-392-2347

Email: [tstephens@stephens-associates.com](mailto:tstephens@stephens-associates.com)

Web: [www.stephens-associates.com](http://www.stephens-associates.com)

j. Tox Monitor/BSR

33 West Chicago Ave.

Oak Park, IL 60302

Telephone: 708-345-6970

Fax: 708-383-0591

Email: [ToxBSR@aol.com](mailto:ToxBSR@aol.com)

Web: <http://toxmonitorbsr.com/>

k. SGS Consumer Testing Services

291 Fairfield Avenue

Fairfield, NJ 07004

Tel 973-461-1495

[deanna.oreliano@sgs.com](mailto:deanna.oreliano@sgs.com)

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Web: <http://www.pacificbiolabs.com>

n. Bureau Veritas Consumer Products Services, Inc  
100 Northpointe Parkway  
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Tel: 716-505-3300  
FAX: 716-505-3301  
Email: [stephen.galbo@us.bureauveritas.com](mailto:stephen.galbo@us.bureauveritas.com)  
Web: <http://www.us.bureauveritas.com>

o. Delta Analytical Instruments, Inc.  
1061 Main St.  
North Huntingdon, PA 15642  
Tel: 724-864-9850  
Fax: 724-864-9851  
Email: [kmuoio@deltalab.com](mailto:kmuoio@deltalab.com)  
Web: <http://www.deltalab.com>

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web: <http://www.atslab.com/ats-ndt-marietta-ga.php>  
FAX: 770-514-3299  
Tel: 678-444-2965

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Floral Park, NY 11001  
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web: <http://www.insightlabs.com/>

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s. Modern Testing Services, LLC  
244 Liberty St., Suite 1  
Brockton, MA 02301  
tel: 508-232-3663  
email: [michael.fong@moderntestingservices.com](mailto:michael.fong@moderntestingservices.com)  
web; <http://www.mts-global.com/en/?AspxAutoDetectCookieSupport=1>

t. Intertek Testing Services  
Building No 86, 1198 Qinzhou Road North  
Shanghai 200233  
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Fax: 86-2154262347 x 327  
Email: [vicki.chen@intertek.com](mailto:vicki.chen@intertek.com)  
web: <http://ts.nist.gov/standards/scopes/2008490.htm>

u. EMSL Analytical, Inc.  
200 Route 130 North  
Cinnaminson, NJ 08077  
(856) 858-4800  
800-220-3675  
Email: [ezambrano@emsl.com](mailto:ezambrano@emsl.com)

v. Xenco Laboratories  
6017 Financial Dr.  
Norcross GA 30071  
Tel: 770-449-8800  
Fax: 770-449-5477  
Email: [brad.luchini@xenco.com](mailto:brad.luchini@xenco.com)

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