

PHTHALATE USAGE IN NOVALIS FLOORING

*THIS BULLETIN COVERS ONLY THE FOLLOWING NovaFloor COLLECTIONS
FROM NOVALIS INTERNATIONAL, LTD.*

PROVIDENCE, LYNDON, CASA, KEMPTEN AND HARTSFIELD SOLID VINYL FLOORING

Phthalates have recently come under scrutiny in the media again, specifically in the cosmetics industry, which has led to an examination into other products which contain the compounds. Phthalates defined by Merriam-Webster are

“: any of various salts or esters of phthalic acid used especially as plasticizers and in solvents”¹

The Center for Disease Control and Protection states that

“Phthalates are a group of chemicals used to make plastics more flexible and harder to break. They are often called plasticizers. Some phthalates are used as solvents (dissolving agents) for other materials. They are used in hundreds of products, such as vinyl flooring, adhesives, detergents, lubricating oils, automotive plastics, plastic clothes (raincoats), and personal-care products (soaps, shampoos, hair sprays, and nail polishes). Phthalates are used widely in polyvinyl chloride plastics, which are used to make products such as plastic packaging film and sheets, garden hoses, inflatable toys, blood-storage containers, medical tubing, and some children's toys.”²

Exposure to phthalates comes from many different sources in our lives, from drinking and eating foods stored in or in contact with containers made with phthalates to breathing in air which has phthalate va-

por or particles mixed in with it. Exposure may be greater in children than adults, mostly because of the behaviors that children exhibit regarding putting things, including their hands, in their mouths. How many times do we see our child chewing on a plastic cup or container? Phthalates, once in the body, are broken down and converted into metabolites that pass out of the human body quickly in urine.

Of note though, is that the CDC, International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP, part of the U.S. Department of Health and Human Services) and other government agencies have stated the effects of exposure to low levels of phthalates are unknown. While there is evidence of health risks in laboratory tests in animals and some field case studies involving workers in factories that manufacture the phthalates of exposure to high or concentrated levels of phthalates, the results of many of those tests are still labeled as inconclusive.

Media reports, advocacy groups and special interests have all been cited in the news as having conclusive evidence of the risks and dangers to us for these everyday products. These reports, however, do fail to mention that the Environmental Protection Agency regularly monitors and tests these products and a host of others for toxicity levels and exposure risks.³

What is seen in the referenced reports is widespread use of the word phthalates, while not actually specifically identifying to the reader the specific phthalate compounds that each of the plastic or vinyl compounds contain. Rigid plastic products use different phthalates than do flexible or soft plastics; vinyls used in raincoats, car dashboards, vinyl floors or 3-ring binders may also use different phthalates in their chemical composition. The most commonly used phthalates in consumer goods that are known to be toxic and cause adverse effects, are BBP, DBP, BNP and DEHP⁴.

So where does vinyl flooring fit into this issue?

Most articles just reference vinyl flooring when citing test results; digging into the tests show that the products used for testing are vinyl sheet flooring, vinyl composition tile, rubber flooring and natural linoleum. Solid vinyl (SV) tiles and planks (aka Luxury Vinyl Tiles and Planks) while making up the quickest growing market segment in hard surface flooring today, were not widely used in the late 1990s and early 2000s when most of the tests were conducted. SV products such as LVT/P are comprised of poly vinyl chloride and certain phthalates with percentages of total makeup depending on the manufacturer. PVC is likely between 30 and 45% of the makeup of the product, while phthalates commonly only make up about a third of that, or close to 10% of the completed product. It should be stated here that the poly vinyl chloride (PVC) used in the vinyl flooring does not typically have any phthalates in its composition, not is it like to be found in the poly urethane coatings used by some of the manufacturers.

Human exposure to the phthalates found in vinyl flooring by off-gassing when exposed to high temperatures, which will then allow the compounds to bind to dust

particles or dirt particles on the surface of the floor. Thus, the manner of exposure is mostly via contact to human skin. It is known that the increase in percentages of exposure in young children happens when they exhibit the normal behavior of putting things which may have come into contact with contaminated particles in their mouths. In all of the studies conducted regarding exposure to phthalates, the manner of exposure is consistently via direct injection to the bloodstream, direct inhalation of vapors or ingestion of contaminated substances. None of the tests conducted deal with epidermal exposures to contaminated particles, which will have an extremely lower amount of the phthalate bound to them.

How do we limit our exposure to these compounds? With flooring it is as simple as regular damp mopping of the flooring to remove the contaminated particles. This will severely limit the amount of contamination that will come in contact with human skin.

Phthalates and Novalis Flooring

The phthalates that are found Novalis SV products, Diisononyl Phthalate (DiNP) and Di-n-octyl Phthalate (DOP), are not currently compounds that are banned or under as considerable scrutiny as DeHP or BNP. According to the Fourth National Report on Human Exposure to Environmental Chemicals (CDC, 2009) while DiNP is considered an animal carcinogen, it has not been evaluated to be a carcinogen to humans by the IARC or the NTP. Other studies have also supported this conclusion regarding DiNP. DnOP, or DOP, has shown in concentrated levels of injection to cause developmental issues in lab animals; again it is not shown to be a major contributor to developmental problems in humans.

Novalis Solid Vinyl flooring is also tested to rigorous standards imposed by various agencies globally, such as ASTM International, European agencies CEN, CENELEC or ETSI and the globally recognized SCS Global Services. Of these agencies, SCS Global specifically tests building materials for environmental, sustainability and food quality certification, auditing, testing and standards development. Flooring products, such as Novalis Solid Vinyl Flooring, are regularly tested by SCS for the coveted FloorScore® Certification. This certification assures that the flooring products and the adhesives used for installation meet the strict indoor air quality (IAQ) requirements by the Resilient Floor Covering Institute (RFCI) with SCS. Products bearing the FloorScore® label also meet the indoor air quality emissions criteria of LEED, CHPS, and the Green Guide for Health Care, and are recognized by a long list of healthy building programs.⁵

Novalis is proud to state that our flooring products meet this globally recognized standard for emissions of volatile organic compounds. The test methods employed in this certification include standards set by the California Environmental Protection Agency and the U.S. Environmental Protection Agency. The results ensure that the flooring products do not exceed one half of the allowable limits of concentration for chemical release of harmful compounds, while also recognizing that there are other products in the installed environment that will be contributing to these levels in the environmental atmosphere.

Novalis International has a strong commitment to the safety and welfare of our customers and the environment, which is evident in the certifications we have for our products and the efforts to reduce the amount of waste and energy employed during our manufacturing processes. Our products are also made from 100% virgin PVC, which means we use no after-market or post-consumer recycled vinyl in our flooring. This ensures that we will not have any foreign chemical, heavy metals or other possibly banned substances in our product.

Our commitment to green manufacturing and the environment starts in our factory. We recycle 100% of the water used in our manufacturing processes. Novalis has reduced 80% of our steam energy consumption since 2009 by developing new innovations in production. We are a zero-waste production facility as all production waste goes back into making the same grade product again. We at Novalis are committed to the safety of you and your family and will continue to improve our processes and compounds to ensure you have peace of mind about the floors you have in your home.

For more information about the sources used in this bulletin please see the information below. You can also visit SCS Global Services for more information on the FloorScore® Certification, follow this link: <http://www.scsglobalservices.com/floorscore>.

Footnotes

- 1 Merriam-Webster Dictionary Online, www.merriam-webster.com/dictionary/phthalate
- 2 "Case Study: Phthalates", (no author), www.chemicalbodyburden.org/cs_phthalate.htm,
- 3 "Killer Backpacks and Other Nonsense", Junie Gunlock, www.iwf.org, August 2012
- 4 "NTP-CERHR Monograph on the Potential Human Reproductive and Developmental Effects of Di-n -Octyl Phthalate (DnOP)"; National Toxicology Program, March 2003
- 5 www.scsglobalservices.com/floorscore

Sources

Articles and studies

“NTP-CERHR Monograph on the Potential Human Reproductive and Developmental Effects of Di-n -Octyl Phthalate (DnOP)”; National Toxicology Program, March 2003, NIH Pub. No. 03-4484

“NTP-CERHR Monograph on the Potential Human Reproductive and Developmental Effects of Di-isononyl Phthalate (DINP)”; National Toxicology Program, March 2003, NIH Pub. No. 03-4484

“Fourth National Report on Human Exposure to Environmental Chemicals”; Center for Disease Control, 2009

“Congress Must Protect People from Toxic Chemicals Known to Cause Harm: Vinyl Chloride”; Sarah Janssen, M.D., Ph.D., MPH, Natural Resources Defense Council, July 2010

“Resilient Flooring & Chemical Hazards, A Comparative Analysis of Vinyl and Other Alternatives for Health Care”; Tom Lent, Julie Silas, Jim Vallette, Healthy Building Network, April 2009

“Air Toxics Hot Spots Program, Risk Assessment Guidelines, Part III, Technical Support Document for the Determination of Non-cancer Chronic Reference Exposure Levels”, California Environmental Protection Agency, February 2000

“Assessment of Technical Basis for a PVC-Related Materials Credit in LEED®, Public Review Draft Approved for Release by TSAC”; TSAC PVC Task Group, U.S. Green Building Council, December 2004

“Killer Backpacks and Other Nonsense”, Junie Gunlock, Independent Womens Forum, published on www.iwf.com, August 2012

“Chemical in plastic tied to preemie problems”; Associated Press, published on www.nbcnews.com, July 2009

“Chemicals in vinyl flooring and wallpaper raise worries”; Linda Carroll, published on www.nbcnews.com, November 2010

Websites

National Toxicology Program, Department of Health and Human Services, www.ntp.niehs.nih.gov

Office of Environmental Health Hazard Assessment, California Environmental Protection Agency, www.Oehha.ca.gov

Centers for Disease Control, www.cdc.gov

Coming Clean Network, www.chemicalbodyburden.org

Resilient Floor Covering Institute, www.rfci.com

The Vinyl Institute, www.Vinylinfo.org

Independent Women’s Forum, www.iwf.org

Center for Health, Environment & Justice, www.chej.org

Scientific Certification Systems, www.scsglobalservices.com