

New Address

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Fairfield, NJ 07004

Mail
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Gibraltar Laboratories,
Inc.
122 Fairfield Rd.
07004

Concern about 1, 4 Dioxane

Manufacturers of cosmetics and dish detergents may want to test their raw materials and finished products for trace levels of 1,4 Dioxane. While FDA does not have a published limit it is specified in California's Prop 65 as a carcinogen. GBL has a sensitive Gas Chromatography method that can rapidly detect the presence of 1, 4 Dioxane. Please call if you would like further information.

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<http://amomsblog.wordpress.com/2008/03/14/popular-green-products-test-positive-for-toxicant/>

Popular 'green' products test positive for toxicant

March 14, 2008

Well, this just sucks. Guess I have to change my soap and shampoo again. Ugh.

Popular 'green' products test positive for toxicant

A cancer-causing chemical is found in almost half of 100 such goods studied.

By Marla Cone, Los Angeles Times Staff Writer
March 14, 2008

New tests of 100 "natural" and "organic" soaps, shampoos and other consumer products show that nearly half of them contained a cancer-causing chemical that is a byproduct of petrochemicals used in manufacturing.

Many items that tested positive for the carcinogen are well-known brands, including Kiss My Face, Alba, Seventh Generation and Nature's Gate products, sold in retail stores across the nation.

The findings of the Organic Consumers Assn., a consumer advocacy group, are sending a jolt through the natural products industry. Gathering today in Anaheim for a national trade show, many leaders worry that the test results will taint the industry in the eyes of the public.



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Of the 100 products tested, 47 had detectable levels of 1,4-dioxane, which the Environmental Protection Agency has declared a probable human carcinogen because it causes cancer in lab animals.

Most traditional soaps and shampoos contain 1,4-dioxane. But the discovery that the chemical is present in many housecleaning and personal care products, including some for babies, that are advertised as being natural, organic or “green” comes as somewhat of a surprise.

“For companies to knowingly or even carelessly put a carcinogen into commerce in this day and age is barbaric, I think, particularly products that have the moniker of natural or self-proclaimed ‘organic,’ ” said consumer advocate and author David Steinberg, who directed the study.

“We need standards,” he said. “Consumers walk into a health-food store or natural-product supermarket with the expectation that the product they purchase will be natural or safer than what they could purchase at the drugstore or supermarket.”

The compound is not intentionally added to products; it is a byproduct of a process used to soften harsh detergents. It is formed when foaming agents, or surfactants, are processed with ethylene oxide or similar petrochemicals.

Said Martin Wolf, Seventh Generation Inc.’s director of product and environmental technology, “The natural world is filled with things that can harm. . . . All we can do is work as hard as we can to keep the levels as low as possible and keep our products as safe as possible.”

Hain Celestial Group, the Boulder, Colo.-based owner of four of the tested companies — Alba, Jason, Avalon Organics and Zia Natural Skincare— said Thursday that it would reevaluate all of its products. Two Alba and three Jason products contained 1,4-dioxane, but the chemical was not detected in tested Avalon and Zia products.

“We are committed to selling products without detectable levels of 1,4-dioxane . . . and will review all formulations accordingly,” said Lisa Lehndorff, Hain Celestial’s director of corporate consumer relations.

No one knows exactly what amount of the compound may be unsafe. In scientific studies, lab animals that had been fed 1,4-dioxane for many weeks developed nasal, liver and gall bladder cancers. But scientists do not now know what, if any, cancer risk humans face from years-long use of products containing the chemical.

The Food and Drug Administration, which regulates cosmetics, has set no standards for 1,4-dioxane. The agency has occasionally tested products for the compound since the late 1970s and says levels of it have substantially declined since then. The FDA says the current levels “do not present a hazard to consumers,” although it has advised the industry to reduce amounts in cosmetics as much as possible.

Many companies in the “natural” business have been striving for years to



eliminate 1,4-dioxane. They use coconut or other plant oils as surfactants, and they have reformulated products and added a process called vacuum-stripping. But traces still remain, in the parts-per-million range.

Josef Koester of Cognis Corp., a Cincinnati-based chemical company that caters to manufacturers seeking “green” compounds, said most companies can avoid 1,4-dioxane but that it “typically requires a higher price point and sometimes performance restrictions for the product. How green the formulators want to go — it is their choice.”

Some organic company owners said it is deceptive for many products to be called natural when the carcinogenic compound indicates that petrochemicals are used in their manufacture.

No standards govern the words natural or organic for personal care products. But a few companies, including TerrEssentials, Dr. Bronner’s Magic Soaps and Sensibility Soaps Inc., which makes the Nourish brand, have certified their products as organic under the U.S. Department of Agriculture’s food standards.

“It makes it really difficult for us to communicate real organic when our little voice gets lost in this sea of products that are all claiming to meet the [USDA organic] standard when, in fact, they don’t,” said Diana Kaye, co-founder of TerrEssentials, a small Maryland company. All six TerrEssentials soaps and other products tested were free of 1,4-dioxane.

Other brands, including Burt’s Bees, Desert Essence and EO, are not certified to meet organic food standards but still contained no 1,4-dioxane in the tests.

But because the vast majority of shampoos, soaps and other consumer goods do not carry the USDA organic seal, it’s nearly impossible for buyers to know whether the ones they use contain 1,4-dioxane because the chemical is not listed on ingredient labels. Products most likely to contain the compound usually list polyethylene glycol or compounds with the syllables PEG, short for polyethylene glycol, -eth or -oxynol-, according to the FDA.

Method, a San Francisco-based company whose products are sold at Target, intentionally does not call its products “natural,” said co-founder Adam Lowry. Instead, the labels say “naturally derived” because the plant oils have been processed with ethylene oxide to make them better cleansers.

Three of its products were tested, and two — its ultra-concentrated dish soap and a hand soap — contained 1,4-dioxane.

“For us there are no alternatives that are still effective,” Lowry said. “Unless you can have a high-performance product, if you have a green product or a natural product, then what’s the point of having one that doesn’t work?”

Method’s creamy hand soap, which had 7 parts per million of 1,4-dioxane in the tests, has been reformulated and now contains none, Lowry said.

“We 100% believe that our products are completely safe and there’s zero risk,”

“...1, 4
Dioxane is a
natural
component of
food products
like tomatoes
and shrimp...”
J&J website
<http://www.johnsonsbaby.com/faq.do>

1, 4 Dioxane
is quickly
detected by
Gas Chroma-
tography, GC

he said.

Whole Foods on Thursday declined to say whether the test results would prompt any changes in products sold at its stores. Three of four products tested in Whole Foods' own product line, 365 Everyday Value, contained 1,4-dioxane.

Dishwashing liquids are particularly hard to keep free of 1,4-dioxane because they require surfactants that are powerful grease cutters.

Seventh Generation uses coconut oil in its dish soaps, which although it is processed with a petrochemical and vacuum-stripped, still contains almost 2 parts per million of 1,4-dioxane. Wolf said the only way to remove all traces would be to use another surfactant that irritates skin, which the Burlington, Vt.-based company considers unacceptable.

Seventh Generation is "working with several surfactant manufacturers to look for alternatives to this process to modify coconut oil," Wolf said. "We're not there yet. We have more work to do."

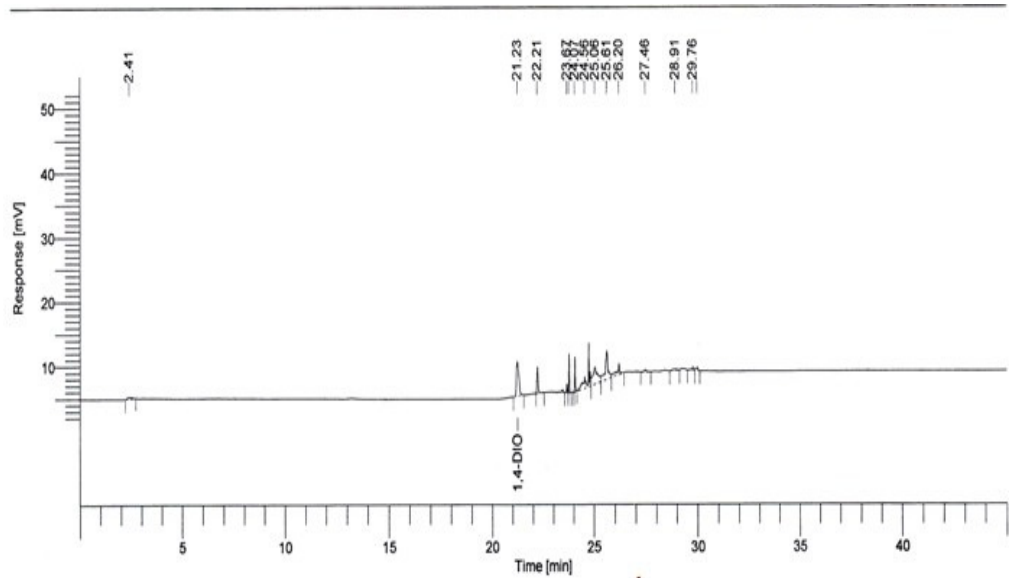


Figure 1: 1, 4 dioxane at ~ 2 ppm by GC FID



For More
information about
interpreting
MSDSs go to

<http://www.ilpi.com/msds/ref/pel.html>

The MSDS for 1,4 Dioxane is shown below.

PEL is permissible exposure limit. If PEL = 100 ppm, this means that one can stay in room with less than 100 ppm of the rated substance without exceeding exposure limits.

PEL TWA is permissible exposure limit - time weighted average. This is the average concentration that one can be exposed to over a specified time period (usually 8 h). If PEL is 100 ppm with an 8 h TWA, this means that one can be exposed to a rated material for 8 hours so long as the time weighted average of exposure does not exceed 100 ppm.

I have seen a few reports of PEL values with a "skin notation". This implies that the material may be injected via dermal absorption. This is a concern when breathing is blocked (via respirator). There is an OSHA report which indicated the skin notation for dioxane. This suggests that dioxane in a cosmetic product has a dermal absorption route and that the PEL respiratory values may apply.

CIEL is the concentration which "at no time should this exposure limit be exceeded."

"TWA levels are usually lower than ceiling values. Thus, a worker may be exposed to a level higher than the TWA for part of the day (but still lower than the ceiling value) as long as he is exposed to levels below the TWA for the rest of the day."

1, 4 Dioxane MSDS

WA: 72 (mg/m³) from ACGIH (TLV) [United States] => Most probably an air-born concentration limit

TWA: 20 (ppm) from ACGIH (TLV) [United States]

CEIL: 3.6 (mg/m³) from NIOSH => Most probably an air-born concentration limit

CEIL: 1 (ppm) from NIOSH

TWA: 25 (ppm) from OSHA (PEL) [United States]

TWA: 90 (mg/m³) from OSHA (PEL) [United States] => Most probably an air-born concentration limit

TWA: 25 STEL: 100 (ppm) [United Kingdom (UK)]

TWA: 91 STEL: 366 (mg/m³) [United Kingdom (UK)] => Most probably an air-born concentration limit

CEIL: 100 (ppm) from OSHA (PEL) [United States] Most relevant?

CEIL: 360 (mg/m³) from OSHA (PEL) [United States] => Most probably an air-born concentration limit