

# Shedding Light On Sunscreens

**What you need to know before you spread sunscreen all over yourself this summer. Some are safer than others**

**W**e're all familiar with the ritual — slathering white milky sunscreen over every inch of our skin as we head out for a day on the water. We do this because we know the importance of sun safety, especially for our children. But have you ever stopped to think about the chemicals in these lotions, and whether such constant use is really healthy for our bodies? Active ingredients in sunscreens are divided into two categories:

- Chemical-based substances that *absorb* UVA and/or UVB rays and prevent these rays from reaching our skin
- Physical block sunscreens that *reflect* UVA and UVB rays away from the skin.

Many active ingredients only protect against a portion of the sun's rays, so most sunscreen brands contain more than one active ingredient for a broader spectrum of UVA and UVB coverage. Sunscreen's regulator — the U.S. Food and Drug Administration (FDA) — has been criticized for either being too sluggish in approving active ingredients already in wide use overseas, or for not thoroughly investigating possible health effects before these chemicals are sold on the U.S. market. PABA (para amino benzoic acid) is a prime example. Once the wonder drug of sunscreens, foreign countries are now dropping PABA as an approved ingredient after widespread consumer complaints of skin irritations led sunscreen manufacturers to turn to other ingredients.

Meanwhile, the effectiveness of SPF (sun protection factor) ratings is a whole different issue; the FDA has spent 10 years developing guidelines for SPFs. Sunscreen manufacturers have been promised updates to the FDA's "1999 sunscreen monograph," but are still waiting. These new guidelines are expected to address SPF ratings, label wording, and the safety of active ingredients. At press time, FDA spokeswoman Rita Chappelle said the agency would unveil new sunscreen standards in the coming months.

How concerned you should be about the active ingredients in sunscreen depends on who you talk to — the FDA, of course, stands behind the 17 active ingredients on its approved list, saying they are all safe and effective ingredients. But scientific research is focusing on some FDA-approved active ingredients that are suspected of disrupting hormones, increasing free radicals (increasing the risk of skin cancer), and those that could penetrate and build up in our bodies, such as newly developed nanoparticle-sized ingredients. The jury is still out on these concerns. Skin specialists warn that potential risks of using sunscreen are less than the very real threat of skin cancer which, according to the National Cancer Institute, tops one million new cases each year in the U.S. alone. Sun protection is a must for boaters and there are dozens of products and ingredients to choose from. Prior to the FDA issuing



## Suggested Products

We went shopping, spent time examining the labels of dozens of sunscreens on the market, and found the following selected products free of problematic ingredients. Others may also fit the bill; so be sure and read the label before you buy. (To check your favorite sunscreen's ingredients, go to [www.BoatUS.com/Magazine](http://www.BoatUS.com/Magazine) and check the chart only available in our digital edition.)

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| <p><b>Soleo Organics Sunscreen</b><br/> <b>Marie Veronique Organics</b><br/> <b>Crème de Soleil, SPF 30+</b><br/> <b>Badger SPF 30</b><br/> <b>Lavera SPF 30 Babies &amp; Children</b><br/> <b>Devita Solar Body Block 30</b><br/> <b>UV Natural ADULT</b><br/> <b>Sunscreen SPF 30+</b><br/> <b>EltaMD UV Physical SPF 41</b></p> | <p><b>Jason Sunbrellas® Chemical</b><br/> <b>Free Sun Block SPF30+</b><br/> <b>Kabana Skin Care Green</b><br/> <b>Screen Organic SPF20</b><br/> <b>Solar Rx Broad</b><br/> <b>Spectrum SPF 30+</b><br/> <b>Obagi Nu-Derm Physical</b><br/> <b>UV Block SPF 32</b><br/> <b>MelanSol®</b></p> |
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any new guidelines, here are four areas of research on active sunscreen ingredients currently ongoing:

**Estrogenic effects:** Numerous studies dating as far back as one reported in the *New Scientist* in 2001 suggest that active ingredients such as Octinoxate, Oxybenzone, and Homosalate cause estrogenic effects, which means they can mimic estrogen and could lead to developmental abnormalities. Dr. Adnan Nasir, a Clinical Assistant Professor of Dermatology at the University of North Carolina, Chapel Hill, is among the dermatologists who caution:

“I think these ingredients are best avoided in children and during pregnancy. As far as risks for otherwise healthy adults who have no risk factors for breast or ovarian cancer, I don’t know of any data that would suggest avoidance.” Regulatory bodies in the U.S. and Europe have not been convinced by studies attempting to prove the health risks of these ingredients.

**Increased production of free radicals:** Scientists are examining whether active ingredients such as Oxybenzone, PABA, Cinoxate, Octinoxate, Homosalate, Octisalate, and Menthyl anthranilate pro-

duce free radicals after they’ve been absorbed and broken down in human skin. Free radicals break down DNA and can cause an increased risk of skin cancer. “Our data shows,” says Dr Kerry Hanson, a University of California, Riverside, researcher, “that if coverage at the skin surface is low, the UV filters in sunscreens that have penetrated into the epidermis can potentially do more harm than good.” The European Union has required warning labels on sunscreens that contain Oxybenzone, although it has not banned the ingredient.

**Nanoparticle-sized ingredients:** Nanoparticles are ultra tiny particles, 100 nanometers or less. Sunscreen manufacturers have started using nanotechnology to make substances such as titanium dioxide and zinc oxide spread more easily and appear less greasy and pasty. However, the health risks of using nanoparticle-sized ingredients remain unestablished and numerous groups, including the Consumers Union, have called on the FDA to conduct safety testing and require nanoparticle disclosure on sunscreen labeling. To date, studies suggest nanoparticles are safe as long as they stay outside the skin; however blemishes and cuts could lead to nanoparticles entering skin tissue where they can cause damage to cell membranes, DNA, and protein. “Nanoparticles are virtually indestructible,” says Dr. Nasir. “Titanium is a metal.

“If nanoparticles enter the skin and body and can’t get out, then there is a potential for gradual accumulation of nanomaterials over time.” In Australia, many sunscreen manufacturers have begun producing and advertising “nano-free” sunscreen as a result of growing consumer concerns about nanoparticle-sized ingredients.

## Heavy Sunscreen Use And Vitamin D

Other than the general concern over the active ingredients listed above, long-term use of sunscreen doesn’t yet seem to pose health risks. However, new studies are showing that heavy use of sunscreens may interfere with the body’s natural production of vitamin D, which is a cancer-fighting nutrient. While some people advocate exposure to sunshine for adequate vitamin D, the American Academy of Dermatology recommends getting it through diet and vitamin supplements. Good dietary sources of vitamin D include fish (tuna, mackerel, salmon) and dairy products.

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## Read The Labels

When shopping for sunscreen, examine the active ingredients section on the label. When we did this, we discovered that the active ingredients and dosage for Aveeno Baby SPF 55 was exactly the same as the adult-blend Aveeno Continuous Protection SPF 55, both containing Oxybenzone and Homosalate, which doctors warn against using on children under age 6. Aveeno isn't alone. Coppertone and Banana Boat also market special baby or children's sunscreen formulas that have these ingredients (in smaller doses than the adult formulas).

*Consumer Reports* recently looked at sunscreens that companies claimed did not use nanoparticles. The magazine's find: four out of five sunscreens actually did contain the ultra-small particles (of zinc or titanium). The FDA doesn't currently require sunscreen manufacturers to label nanoparticle-sized ingredients. The best way to tell whether a sunscreen has nanoparticle-sized zinc or titanium is to test how well it spreads. If it becomes transparent when rubbed on, it probably uses nanoparticles.

## Tips For Boaters:

- Use a broad-spectrum (UVA & UVB) water-resistant sunscreen that is SPF 15 or greater.
- Apply sunscreen like you would paint. Use two coats to cover problem spots.
- Re-apply sunscreen every two hours as most sunscreens break down and become ineffective after two hours.
- Wear a sunscreen lip balm to prevent lip cancer.
- Hats and shade are always a good idea.
- Wear UVA- and UVB-blocking sunglasses.
- Wear UV- blocking clothing or treat your clothes with Rit SunGuard Laundry Treatment UV Protectant, which coats your clothes with SPF 30 (lasts 20 washes).

## Best Ingredients For Children Under Six:

Zinc-based ingredients are best for children because zinc is a naturally occurring compound in our bodies.

It's also important for children to wear hats and protective clothing and avoid sun exposure between 10 a.m. and 4 p.m.

## Best Sunscreens For Sensitive Skin:

For allergies, eczema, or sensitive skin, physical blockers are best. "The most common sunscreen allergy is directed to PABA," says Dr. Clay Cockerell, clinical professor of Dermatology and Dermatopathology, and director of Cockerell and Associates Dermopath Diagnostics of Dallas, Texas. Dr. Cockerell is developing a sunscreen body wash aimed at people who resist using sunscreens such as children. The SPF 20 protection would remain on the skin even after rinsing.

## Best Ingredients For Boaters:

**Zinc oxide** — a blocker that protects against UVA and UVB rays.

**Ecamsule** (Mexoryl SX) — a chemical popular in Europe, Canada, and Australia, approved by the FDA in 2006.

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