

# Ask the Ingredient Expert

**Q** OK, I'M GOING TO ASK THE big question: what's wrong with mineral oil?

**A:** As far as I'm concerned, nothing. True, mineral oil is derived from petroleum - a non-renewable resource from the earth. But chemists in the know theorize about 80 percent of the ingredients used in cosmetics - even 'natural' ones - are either solely or partially derived from petroleum. When you add those ingredients that are transported using petroleum-powered vehicles, are processed using petroleum-derived plastic containers, the number reaches 100 percent. So excluding mineral oil from a product solely because it is not eco-friendly seems rather exclusionary or shall I dare - instigated by a savvy marketing team, don't you think?

That being said, when using mineral oil in a cosmetic, it must be the right grade of mineral oil.

Like motor oil, mineral oil is available in different grades. 'Technical grade', used by machinists to lubricate engines and equipment, is the most unpurified form of the oil. According to the World Health Organization, contaminants in this grade are linked in epidemiological studies to higher cancer rates among machinists when compared to the rest of the population. Other groups of contaminants not removed during the processing of the oil have been shown to cause skin irritation or clogged pores. Needless to say, most cosmetic manufacturers try to stay away from the technical grade of mineral oil.

Traditionally, the cosmetic industry has used the oil's 'cosmetic grade', which is more purified than the technical grade, but still contains some comedogenic material. On a rating of 0 to 5, with five being highly pore-clogging, the cosmetic grade of mineral oil usually receives a one or two rating depending upon the methodology of the test. Because the cosmetic grade has been so widely used in the past, mineral oil has been viewed by many skin care professionals as a contributor to clogged pores.

Knowing the pore-clogging potential of the first two grades of mineral oil, not to mention the possible irritation and carcinogenicity quotients of the technical grade, many manufacturers still formulating with this oil are restricting their use only to the pharmaceutical grade, known as Mineral Oil USP (the USP stands for United States Pharmacopoeia, the U.S. government document which lists the required pharmaceutical standards for this oil). Mineral Oil USP is a water-white oil, indicating that it is free of impurities, it is also not likely to clog pores, and has therefore received a 0 to 1 rating in most comedogenicity tests.

Unfortunately, because mineral oil is so effective at sealing the skin from air (an action known as 'occlusive'), some dermatologists believe it can magnify the pore-clogging potential of comedogenic ingredients by trapping them in the pore area. So, while Mineral Oil USP is not



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comedogenic, caution should be used when this oil is in leave-on products containing pore-clogging ingredients, at least when these products are applied to clog-sensitive skin. What's the best way to tell if the product is or isn't likely to clog pores? Ask the manufacturer if it has undergone comedogenicity testing on humans - not animals, since animals often react differently from humans. If the formulation has been tested, find out its rating on the 0 to 5 scale.

Also, because mineral oil is listed in the ingredient list simply as 'mineral oil', you cannot know which grade is in the product without asking this, too, of its maker.

One last thing: some professionals are now wary of mineral oil because it is flammable. If you've ever had an oil fire in the kitchen, you know that virtually any oil is flammable, whether it's corn oil, sesame oil, avocado oil, olive oil,

bacon fat or shortening. But if you want an excuse not to use mineral oil, I guess that's as good as any.

**Q:** Do children under two have special sunscreen needs? Should I recommend avoiding certain ingredients?

**A:** Although some experts may disagree, others believe it is wise to avoid chemical absorbers like octyl methoxycinnamate, avobenzone and the benzophenone family and stick to physical blockers that rely on titanium dioxide and zinc oxide with an SPF 15 or higher.

I would also recommend choosing very simple formulas. Avoid fragrance, colorants, essential oils, plant extracts, vitamins or other ingredients that aren't directly related to protecting the skin from sunlight.

Any formula for children this young

should definitely be pre-market tested and proven safe for their use - not just for adults, which is how most sunscreens are tested. I would suggest these safety tests include oral toxicity, skin and eye irritation and allergy sensitization.

For older children, you will also want to look for formulas that have been tested and proven to be very-water-resistant\* and very-sweat-resistant\* - meaning that under each of these conditions the sunscreen should remain active for up to 80 minutes, unless the skin is towel-dried before that time. And, since kids are so active outdoors, testing the product to make sure it is rubproof during impromptu sessions of tag or wrestling is also a big plus.

Children of any age or shade should wear a minimum SPF 15 sunscreen everyday - not just in the summer when the sun is strongest. That's because we now know at least 80 percent of the sun damage we receive in our lives is acquired before the age of 18, and 78 percent of all sun damage is from incidental exposure when we are not even concerned with sunlight.

Just think, if you had worn an SPF 15 everyday when you were a child, your skin could have avoided much of the damage that now looks back at you in the mirror every morning. Wouldn't that be a great gift to give a child? ■

\* These are now the phrases FDA recommends using in place of waterproof and sweatproof.

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