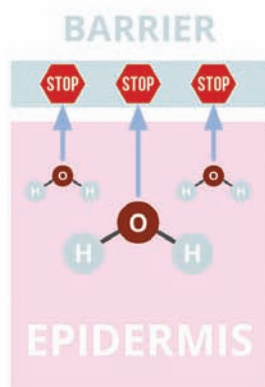


PeriodicGraphics With Compound Interest

A collaboration between C&EN and Andy Brunning, author of the popular graphics blog Compound Interest (compoundchem.com). To see all of C&EN's Periodic Graphics, visit <http://cenm.ag/periodicgraphics>.

THE CHEMISTRY OF LIP BALMS

It's winter in the Northern Hemisphere, so many of us will be reaching for the lip balm to relieve our chapped or dry lips. Here, we look at the chemicals that help this pocket product moisturize and protect.



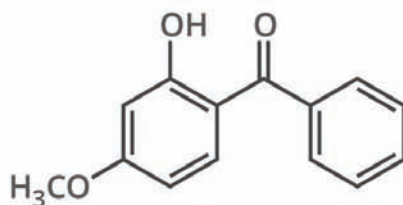
OCCLUSIVE MATERIALS



PETROLEUM JELLY Mixture of hydrocarbons with 25+ carbon atoms

Occlusive materials help prevent moisture loss by forming a barrier over the upper layer of the skin. Petroleum jelly, lanolin, dimethicone, and waxes can all be used for this purpose. They also impart a greasy feel.

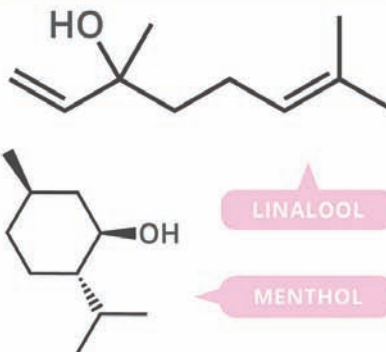
SUNSCREENS



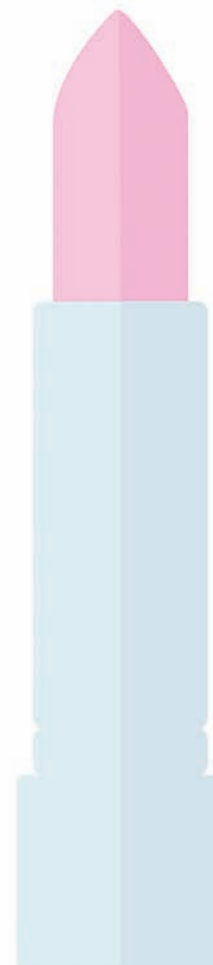
OXYBENZONE

Manufacturers often include molecules that absorb UV light, and therefore act as sunscreens, in lip balms. Several different compounds can be used, including oxybenzone, avobenzone, and titanium dioxide.

OTHER INGREDIENTS



Fragrance compounds such as linalool, citral, and geraniol improve a lip balm's aroma. Manufacturers sometimes add menthol to lend a cooling effect.



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