

Smitten Kitten's® *Shopping Guide to Lube*

Every Body Edition

The Importance of Using Lube

Many people view personal lubricants as the solution to a “problem,” a last resort, or as a hindrance to authentic sexual satisfaction. But the fact is **lubricants can increase pleasure, safety, and satisfaction for any body at any age.** Shopping for lube can be a challenge because not all personal lubricants are right for everybody (and some lubes aren't really right for any body). It's not always easy for consumers and everyday people to access the information we need to make informed choices about safe and healthy lubricants. That's why Smitten Kitten has researched lubricants from every angle, so you can discover the best lubes for your body.

Smitten Kitten's Mission

Smitten Kitten is a progressive, sex positive, education based sex toy store and resource center for everyone.

We were the first ever totally non-toxic and body safe sex toy retailer in the world, and continue to advocate and educate for safer sex toys, supplies, and lubricants.

Our staff of sex educators receive training on everything from the newest innovations in vibrators to the effects of chemotherapy on sexual function, and provide thorough, customized customer service and education to all of our clients.

We also provide public workshops and classes for everyone, as well as specific to medical professionals, on topics around sex and sexuality, speak and teach in our local community, and facilitate workshops at conferences around the country.

Our Lube Education Project

We realized that important consumer health and safety information about lube wasn't accessible... or didn't even seem to exist! So we've taken an in-depth look at the safety and quality of the lubricants we sell, along with similar products more widely available in drug stores.

We understand that many people are dissatisfied with their lubricant and struggle to find one to suit their needs. Finding a lubricant that works for you can make a positive impact in the quality of your sex life and well-being. This is especially true for people with allergies or sensitivities, people who are taking antidepressants, or those experiencing hormonal changes resulting from menopause, pregnancy, hysterectomy, radiation, or chemotherapy. With all this in mind, we've read, researched, and compiled as much information as possible on personal lubricants for our customers and medical professionals.

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What type of lube is best for you?

There are four major types of personal lubricants, classified by their primary ingredients. Each type of lube has particular strengths and weaknesses which make it better suited for specific activities, uses, personal preferences, and bodies.

Water Based

PROS:

- The most common, affordable, and widely available type of personal lubricant
- Feels most like the body's natural lubrication
- Available in a wide variety of consistencies, from thick gels to thinner liquids
- Compatible with all sex toy materials and safer sex barrier methods

CONS:

- Will dry out quickest of any type of lube, as it evaporates and/or soaks into the skin
- Generally has the longest ingredients list and always contains preservatives, making it the most potentially irritating type of lube, especially for those with sensitive skin, compromised mucous membrane integrity, or compromised immune systems

Silicone

PROS:

- Regarded as hypoallergenic, as it typically doesn't soak into the skin and doesn't need preservatives
- Lasts the longest of any type of lubricant and isn't water-soluble, making it great for play in the shower or bath
- From brand to brand most silicone lubricants have very similar consistencies, although there are a few options available for thicker or thinner consistencies
- Compatible with all safer sex barrier methods; in fact, it is the lube used on almost all pre-lubricated condoms

CONS:

- Few options available in convenience or grocery stores, but silicone lube is gaining in popularity with a variety of options available at sex toy stores or online
- Not always compatible with solid silicone sex toys

Oil Based

Only plant oil based products are recommended for use as personal lubricants; petroleum based oils (like Vaseline) can breed bacteria inside of the body and should never be used internally.

PROS:

- Hydrates and improves the elasticity of sensitive, fragile, and thinning skin and mucous membranes over time
- Lasts longer than water based lubricants, but not as long as silicone based
- The only type of lubricant that is actually 100% organic
- Compatible with all non-toxic sex toy materials

CONS:

- NOT compatible with safer sex barriers made from latex or polyisoprene
- Takes longer to clear out of the body than other types of lubricants, therefore is not recommended for people who experience chronic, recurring bacterial vaginosis, urinary tract infections, or yeast overgrowth

Hybrid (Silicone & Water)

PROS:

- Less likely to cause irritation than water based lubes, but not regarded as hypoallergenic
- Lasts longer than water based lubricants, but not as long as silicone based
- Many brands feel similar, but there is some variance in available consistencies
- Compatible with all sex toy materials and safer sex barrier methods

CONS:

- Newer product with less information available and less general availability outside of sex toy stores or online

LUBE COMPATIBILITY!

Sex Toys and Safer Sex Barriers

toy material lube type →	SILICONE	ABS PLASTIC	GLASS, STEEL, WOOD, STONE	SAFER SEX BARRIERS
WATER BASED				
SILICONE BASED				
HYBRID water and silicone together				
OIL BASED				

*Oil Based Lubricants ARE compatible with Polyurethane or Nitrile barrier methods, which are uncommon, but do exist: Trojan Supra™ Condoms (Polyurethane), MidKnight® Nitrile Gloves, or the FC2™ Receptive Condoms (Nitrile).



Here's a handy chart that explains what types of lubricant are okay to use with toys and safer sex barriers. People often get confused about which lube is safe to use with what material. But as you can see here, there are really only two incompatibility issues to worry about.

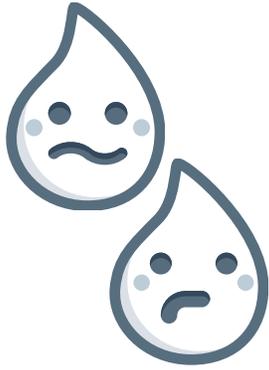
- Avoid using silicone lubricant with silicone sex toys. It's not always an issue, but occasionally silicone lube can change the surface texture of a silicone toy and cause it to peel or look foggy and smudged.
- NEVER use oil based lubricants with latex or polyisoprene condoms, dental dams or gloves. The oil will eat right through, rendering the barrier useless! Yikes.

Take An In-Depth Look At Water Based Lube!

There are two major characteristics particular to water based lubes that are more accurate predictors of their safety than any one ingredient, which are pH and osmolality. First, we'll take a closer look at pH. **If you experience burning or stinging when you use lube, the information on this page could be really important!**

What is pH?

- pH is the measure of a solution's acidity or basicity on a scale
- from 0-14. A pH of 0 would be the most acidic, a pH of 14
- would be most basic, and a pH of 7 would be neutral. Check
- out the chart on the next page for examples to put this idea
- in a real life context.



Vaginal pH

Vaginal pH plays an important role in the immune function of the vulvovaginal microbiome, as it helps maintain the balance of healthy bacteria and yeast, and acts as a defense against pathogen transmission.

Vaginal pH naturally changes throughout the menstrual cycle and is closely tied with estrogen and progesterone levels. As the body changes with menopause, or other causes of decreased estrogen, the pH of the vagina rises from 3.5-5.5 to closer to 6-7. This is a completely natural occurrence which doesn't necessarily reflect poor health; however, it does leave the genitals more susceptible to BV, UTIs, yeast overgrowth, or pathogens.

When combined with other effects of low estrogen this raise in pH can create an environment where very acidic lubricants cause burning or stinging.

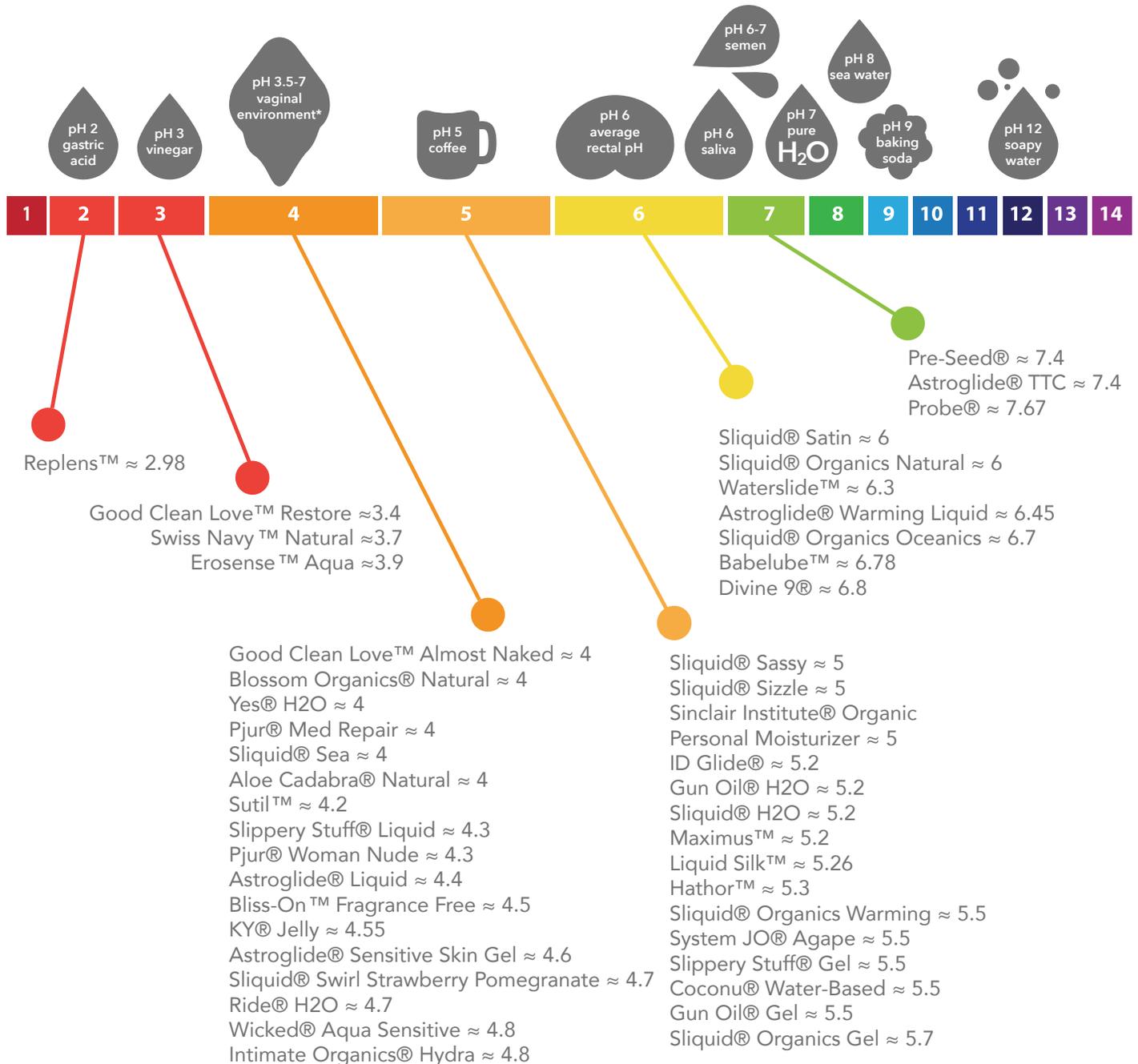
Anal pH

Anal pH is closer to neutral, usually between 6 and 7, and remains in this range consistently throughout hormone fluctuations and the lifespan. pH inside of the anus and rectum helps protect the mucous membranes there from absorbing anything harmful, and acts as a buffer between alkaline fecal matter and the body.

Many personal lubricants have pH values around 4 or 5, so if they're used rectally, especially in a body with any lesions, sores, or openings in the rectal mucous membranes, they may cause stinging and irritation. Finding a lubricant with a pH closer to 6-7 may be more appropriate for the anal environment. Silicone and plant oil-based lubricants are also extremely popular for anal play, and don't have pH values to worry about!

pH LEVELS OF WATER BASED LUBRICANTS

*The range of "normal" vaginal pH is far greater than what has traditionally been understood. Vaginal pH varies widely in relation to hormonal levels and different bacterial populations, and the range stated here accounts for normal pH fluctuations that happen over a menstrual cycle and throughout life. A higher pH correlates to lower estrogen. A pH higher than 4.5 has often been seen as an indicator of bacterial vaginosis — however, recent studies have shown that most people with vaginas can regularly experience relatively high vaginal pH without the occurrence of BV.



¹Cone, Richard A. "Vaginal microbiota and sexually transmitted infections that may influence transmission of cell-associated HIV." Journal of Infectious Diseases 210.suppl 3 (2014): S616-S621.

Genital Wellness & The Lube You Choose

Vulvovaginal Mucous Membranes

The vulva, vagina and cervix are made of four different mucous membrane structures which all function in slightly different ways, contain various glands, and have unique epithelial layer structures. (The “**epithelial layer**” is the outermost layer of skin on a mucous membrane.) All of the epithelial configurations contained in the vulvovaginal microbiome are nonkeratinized, meaning that they allow water to flow freely through their cell membranes. This means that water based lubes easily affect the cellular structure and function of these cells.

Epithelial layer function changes with age: as estrogen production decreases the epithelial structures in the vulvovaginal microbiome become thinner and less elastic, and the muscles underlying the skin may atrophy and become less elastic as well.

Anal/Rectal Mucous Membranes

Mucous membranes in the anus and rectum are primarily covered in a single layer of nonkeratinized, columnar epithelium. This means that the outermost layer of skin on the mucous membranes inside the rectum are typically only one cell layer thick, with a rigid structure, which makes them inelastic and delicate. It also means that they allow water to flow freely through their cell membranes. Rectal mucous membranes may be extremely vulnerable to tears and the potential negative effects of hyperosmotic lubricants, which is partially why using lubricant to protect rectal membranes is so important!

Penile Mucous Membranes

The penis doesn't have a lot of surface area covered by mucous membranes. If a penis is uncircumcised, then the skin under the intact foreskin may be a mucocutaneous epithelium, meaning that it's partially keratinized, so it allows a smaller amount of water to flow freely through its cell membranes.

There is also mucous membrane inside of the urethra, which is similar in structure to that of the vaginal opening. It is nonkeratinized, but multilayered, so it allows water to flow freely through its cell membranes, but is flexible and resilient.



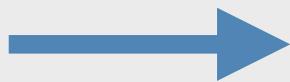
More Important Lube Science Facts!

We said that there are two major characteristics particular to water based lubes that are more accurate predictors of their safety than any one ingredient. The first one was pH. Now we'll take a look at the second one, osmolality.

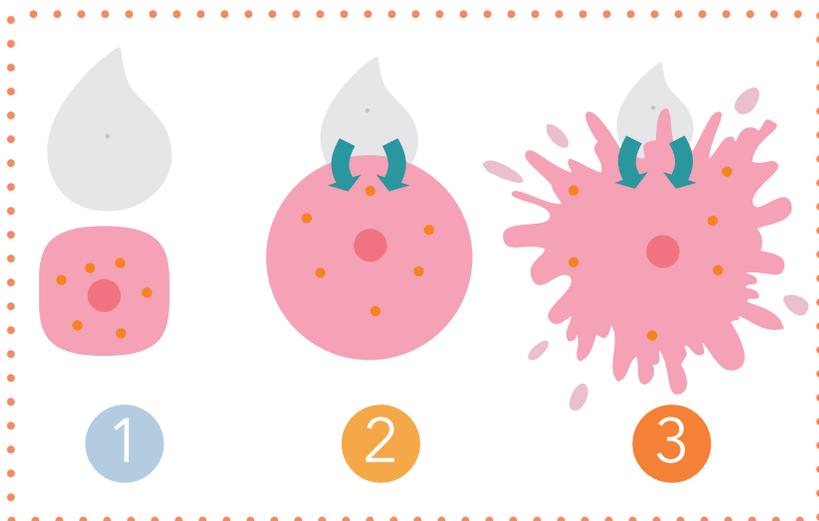
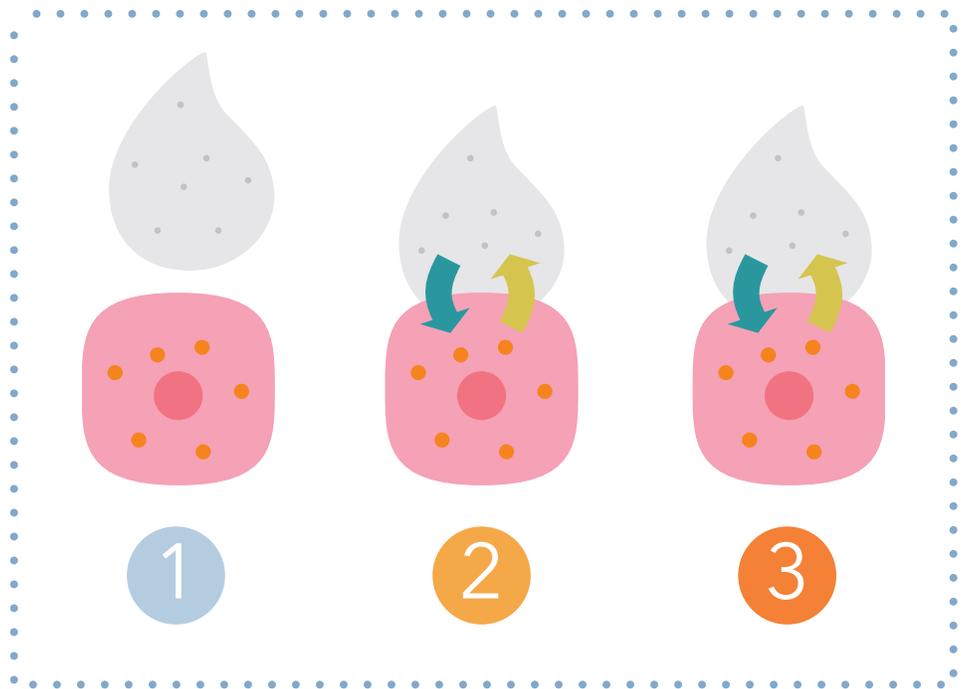
What is Osmolality?

Osmolality is the measure of dissolved particles per unit of water, shown as mOsm/kg (milliosmoles per kilogram). More simply put, osmolality is the concentration of a water based lubricant. The osmolality of a lubricant is important because the epithelial layer and the body's natural mucus are constantly trying to maintain an equilibrium of water pressure.

When a lubricant has an osmolality similar to that of the mucus and mucous membranes of the genitals, the osmotic pressure is equalized and the cells' integrity is not compromised. Here's what that looks like:



ISO-OSMOTIC LUBE



When a lubricant has an osmolality far lower than that of the mucus and mucous membranes of the genitals, the imbalance in water pressure can flood the cell and cause it to rupture.



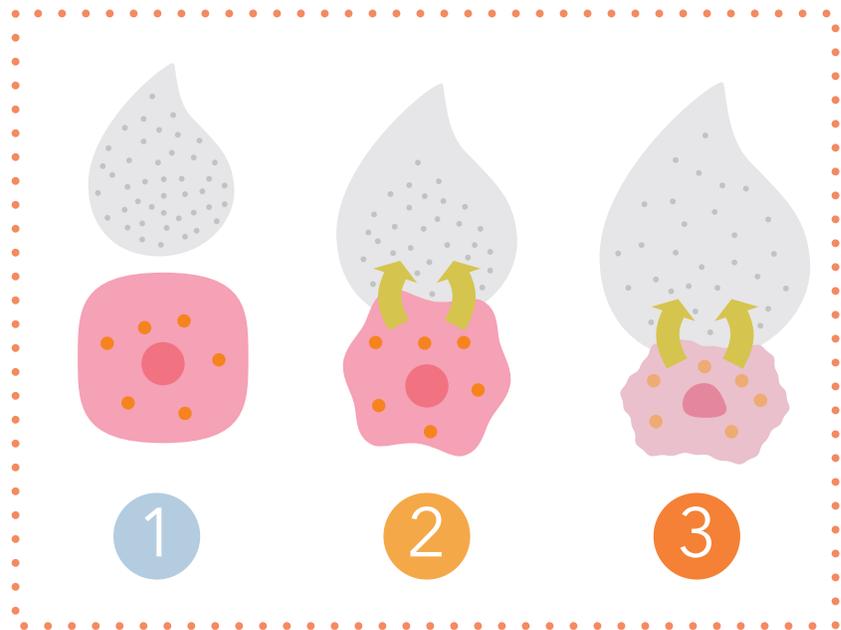
HYPO-OSMOTIC LUBE

But more often than not, water based lubes are **hyperosmotic**, meaning they have a higher osmolality than that of the body's mucus.

Hyperosmotic lubricants dehydrate the body's mucus and mucous membranes, and if they have a drastically higher osmolality this dehydration is so complete that the cells die and slough off, leaving the body irritated and more susceptible to infection.



HYPEROSMOTIC LUBE



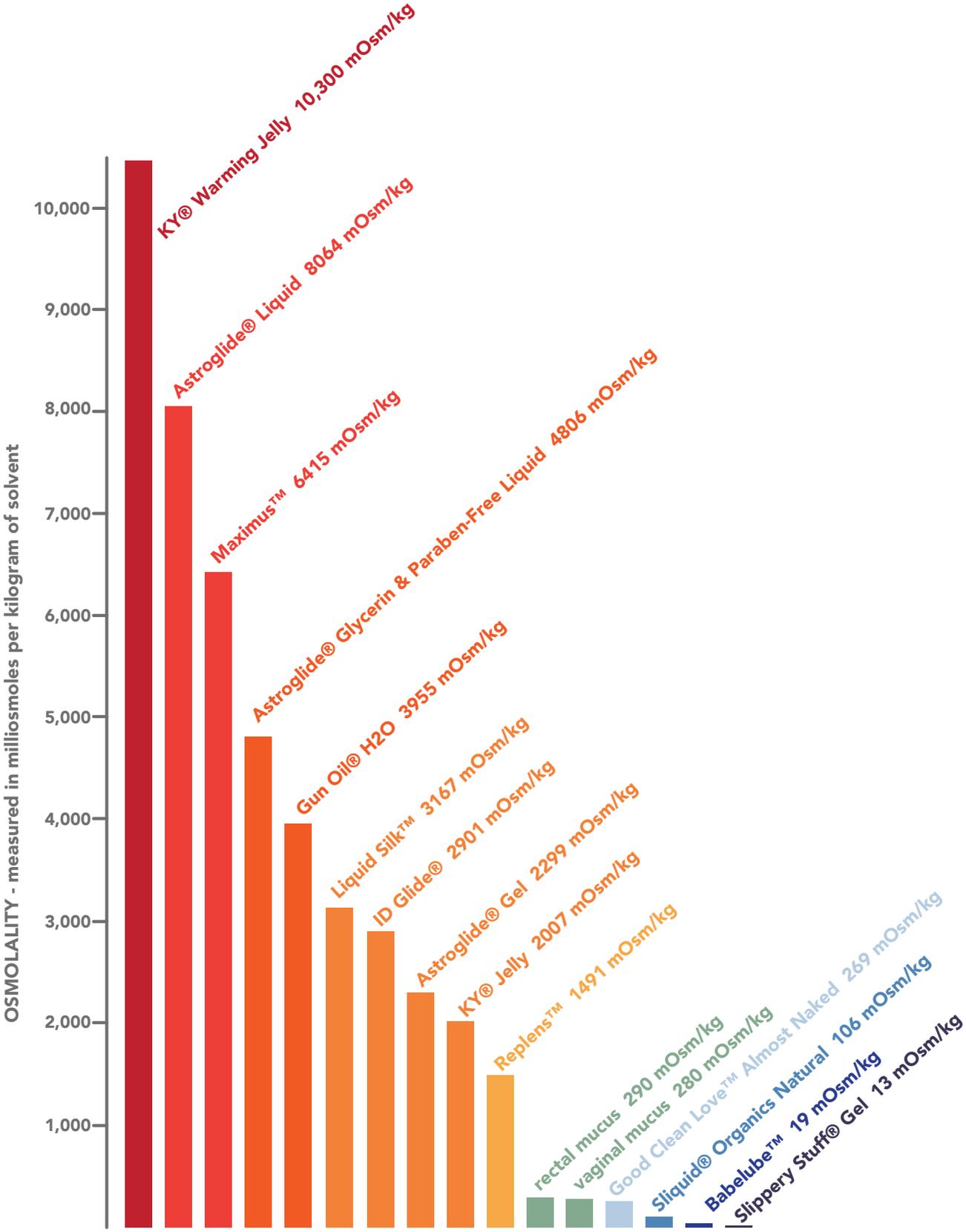
On the next page you'll see a graph that shows the osmolality of many commonly available water based lubricants, along with the average osmolality of vaginal and rectal mucus for comparison. Many products on the graph have osmolalities that are far higher than those of healthy mucus.

If this seems like a potential health risk... that's because it is.

In 2012, the World Health Organization issued this advisory note: "Most commercial personal lubricants have high osmolalities (2000-6000 mOsm/kg)... the normal osmolality of female vaginal secretions is 260-290 mOsm/kg and in human semen it is 250-380 mOsm/kg... **Ideally, the osmolality of a personal lubricant should not exceed 380 mOsm/kg to minimize any risk of epithelial damage...** It is therefore recommended on an interim basis that procurement agencies should source lubricants with osmolalities of not greater than 1200 mOsm/kg."

It's frustrating to see so many lubricants with osmolalities beyond the recommended limits. But don't worry, there are still safe, body friendly products to choose from.

OSMOLALITY OF WATER BASED LUBRICANTS



Ingredients to Watch Out For



Every body is different and may have sensitivities or allergies to a variety of ingredients in personal lubricants, so it's always important to read the ingredients list before putting a lube on your body! There are a few ingredients, however, that are bad news for most bodies and should generally be avoided.



Glycerin(e) - a sugar alcohol that has anecdotally been linked with yeast overgrowth and directly corresponds with increased osmolality. Any water based lubricant that has glycerine in its first three ingredients is more likely to be significantly hyperosmotic.

Propylene Glycol - a chemical derived from petroleum (aka "petrochemical") which has been linked with BV and is a sensitizer, meaning the more you're exposed to it the more likely you are to have allergic reactions to it. Any water based lubricant that has propylene glycol in its first three ingredients is more likely to be significantly hyperosmotic.

Nonoxynol 9 & Chlorhexidine Gluconate - both of these ingredients are surface acting agents (aka "surfactants"), which change the surface tension and permeability of cell membranes. Both are designed to kill microbes in an effort to make them sterile or antiseptic, but this also kills healthy bacteria and compromises epithelial cell integrity. These ingredients, as used in lubricants, can lead to a burning or stinging sensation, and leave the body more susceptible to STI and pathogen transmission for 24-27 hours.

Petroleum Oils - these oils are ideal breeding grounds for bacteria and take a long time to be cleared from inside of the body, so they're never recommended for use as a personal lubricant.

Polyquaternium-15 - used as a preservative and skin adherent in a limited number of water based lubricants and spermicides. It can enhance viral activity and infectivity of HIV and potentially similar viruses, so it's not advisable to use in situations where STI contraction or transmission is possible.

Benzocaine - a numbing ingredient that is a potential skin irritant. Numbing lubes can be used responsibly, but it's important to remember to listen to the body's pain responses. If penetration or friction is painful, numbing ingredients will not solve the problem, and the body will continue to react to pain or irritation even if the sensation has been dulled. Continuing painful activities, with or without numbing products, can actually lead to increased or chronic pain.

Sugars - some lubricants use sugars, like glucose, honey, or maltodextrin, for flavor. However, all of these ingredients can feed yeast, dry sticky or tacky, and throw off the natural balance of the vulvovaginal environment; therefore, they're not recommended for internal use.