Basic Functionality - Water Soluble and Dispersible Natural Polymers, Gums, Starches and Hydrocolloids

1) VenaSilk and OryzaSilk work similarly and are best used in emulsions as neither are completely water soluble. VenaSilk and OryzaSilk do not swell in water as typical gums do. They should not be utilized in (most) surfactant based systems such as shampoo and body wash since the solids will typically fall out of solution. VenaSilk and OryzaSilk work beautifully when utilized in emulsions and will provide a cushiony feel as well as build stability. The recommended usage is about 0.5%-2% in emulsions. We don’t recommend usage in cationic emulsions.

2) GuarSilk is best used in shampoo, body wash and hair conditioners. GuarSilk can be used in emulsions for skincare but may not have a particularly good feel. GuarSilk utilized at 0.2% in a shampoo or body wash can mitigate the squeaky clean feel when using certain surfactants such as the polyglucosides. GuarSilk is cationic, but will be compatible with most anionic surfactants. GuarSilk must be well hydrated in water prior to using.

3) HEC is completely water soluble and works beautifully to make a clear gel. HEC functions by swelling in water. HEC is nonionic and is compatible with most water soluble ingredients. Water soluble ingredients can be added to make an all water soluble gelled product. HEC is not an emulsifier and will not hold oil. HEC will not effectively thicken surfactant based systems as it will eventually thin out. HEC can be used on skin or hair. HEC can be used effectively in emulsions to build viscosity and stability from the water phase. It will also enhance the feel in application. The recommended usage is 0.5%-2% - but more or less can be used depending on the formulation. In emulsions, HEC offers lovely feel in application as well as stability/viscosity from the water phase.

4) Extraordinary XG is completely water soluble and was created for hair care, but is fine for skin care. Extraordinary XG forms a lovely clear gel and functions by swelling in water. Since Extraordinary XG is anionic, it may not be compatible with cationics such as hydrolyzed proteins or quaternary compounds. Extraordinary can be used in most emulsions which are nonionic or anionic (Natramulse) emulsions to build viscosity/stability from the water phase. Extraordinary is not an emulsifier and will not hold oil. Extraordinary XG is known for its ability to offer light to moderate hold in hair care.

5) XanThix is my favorite stabilizer/thickener for the water phase of emulsions. XanThix is completely water soluble but will not emulsify oil. XanThix functions by swelling in water. XanThix is effective when utilized at very small percentages. Only 0.1%-0.3% is needed in emulsions. Any higher and the feel and functionality will greatly diminish and it will become rather nasty. But when used properly, XanThix will greatly enhance the feel, stability, and functionality of emulsions. As XanThix is anionic it should not be used with cationic emulsifiers such as BTMS. XanThix can thicken surfactant based systems to some extent, but they will almost always eventually thin out. Sometimes XanThix will have synergy with other thickeners such as MaizeThix or Ultramaize or Crothix Liquid to thicken surfactant based systems – but it’s tricky. XanThix is fabulous in emulsions!
6) Ultramaize is completely water soluble and will help to thicken and stabilize emulsions. Ultramaize functions by swelling in water. Ultramaize is not an emulsifier, but can hold very small amounts (1-2%) of oil. Ultramaize works beautifully when utilized from 0.5%-2%. Ultramaize is also one of my favorite water phase thickeners/stabilizers and like XanThix will greatly enhance the stability and feel of emulsions. Ultramaize can sometimes be used in low surfactant systems – particularly if synergy is built using other structural agents such as XanThix. When utilized in high surfactant systems Ultramaize will typically fall out of solution. Ultramaize is fabulous in emulsions!

7) Most emulsions benefit from using a water phase thickener/stabilizer. Emulsions made with Plantamulse Pastilles, Sugarmulse, Olivem 1000, and Olivoil Glutamate Emulsifier will be greatly enhanced by utilizing water phase thickeners/stabilizers such as XanThix, HEC or Ultramaize. XanThix and HEC both provide a nice slip in application. Ultramaize offers some slip, but is also “cushiony”. VenaSilk and OryzaSilk have a different functionality and offer a cushiony pleasant feel.

8) Most sample formulas in the Formulary demonstrate how to utilize these ingredients. None of these thickeners/stabilizers are oil soluble. All are water soluble or partly water soluble (VenaSilk, OryzaSilk). But even so, these powders should all be dispersed into the melted/hot oil phase of emulsions. Once the oil phase solids have melted, remove from heat and disperse the powder into the oil. When the particles are all separate and well dispersed, pour the heated water phase into the oil. Depending on the formula, proceed with creating the emulsion.