



FVC-P50(Viscocare-PA50F)

Polymers with emulsifying and thickening power

Product Descriptions

FVC-P50(Viscocare-PA50F)

INCI/CTFA Name	Polyacrylamide & C13-14 Isoparaffin & Laureth-7
Appearance	Fluid Emulsion
Solid Content	45~49% Min.
pH 2%	5.0~7.0
Viscosity 2%	65,000 ~ 90,000 mPas
Residual acrylamide	2 ppm Max.
Shelf life	36 Month
Recommended usage	0.5~3%
China regulatory	Listed in IECIC, NMPA registered

Residual Acrylamide regulation is Leave-on product under 10ppm, the other product under 50ppm (5% Max level)



Product Line-up



	No Oil	No Oil	C13~14 Isoparaffin (Light)	Isohexadecane (Light)	Polyisobutene (Light)	Hydrogenated Polydecene (Smooth)	Squalane (Smooth)
Acrylate (Fresh)	FVC-90 (Viscocare- HA50F)	Coming up E.O. Free FVC-90		FVC-E50 (Viscocare- EG50F)	Coming up E.O. Free FVC-E50		Coming up Mineral Oil Free FVC-N40
AMPS (Soft)							
Polyacrylate-13 (Rich)						FVC-400 (Viscocare- P400F)	
Acrylamide (Rich)			FVC-P50 (Viscocare- PA50F)				

Contents

- Product Features
- Self Phase Inversion-able Emulsion Thickener
- Emulsification Power
- Thickening Capability
 - Per Thickener Concentration
 - Per pH Effect
 - Per existence of Electrolyte
- Compatibility with Solvents
- Sensory
- Formulation Tips

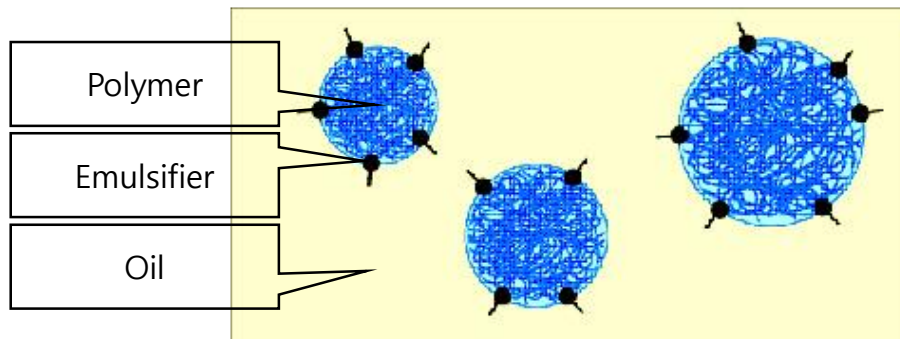


Product Features

- Self-phase inversion-able emulsion type thickener that is already neutralized and is easily dispersed
- Viscosity can be formed under a wide range of pH (3–11).
- Excellent thickener, stabilizer, emulsifier at low usage
- Emulsification capacity for a variety of oils
- Stable structure provides excellent thickening effects in DHA, AHA, H₂O₂, Solvent, etc
- It's light and easy to pick-up formulation is possible.
- Residual solvent free (Benzene, n-butanol, Ethyl Acetate, Butyl Acetate)

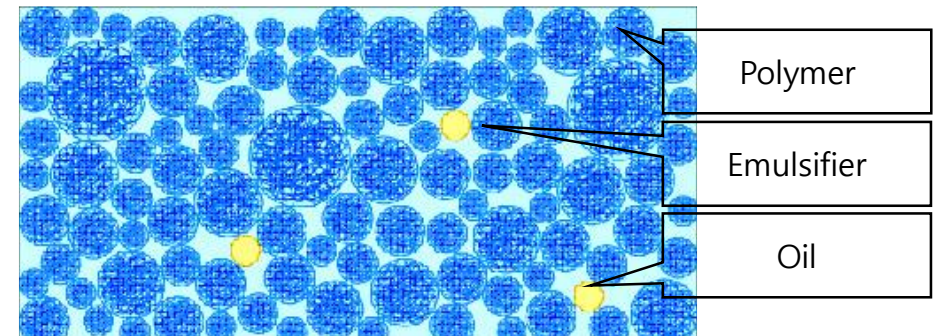
Self Phase Inversion-able Emulsion Thickener

- Convenient to use compared to traditional thickener
- A thickener in the form of a W/O emulsion that does not require neutralization and is easy to disperse in water
- Easy to store in humid places.
- Residual solvent free



W/O Emulsion
FVC-P50(Viscocare-PA50F)

Add into
Water Phase
(Phase Inversion)



O/W Emulsion
Water + FVC-P50(Viscocare-PA50F)

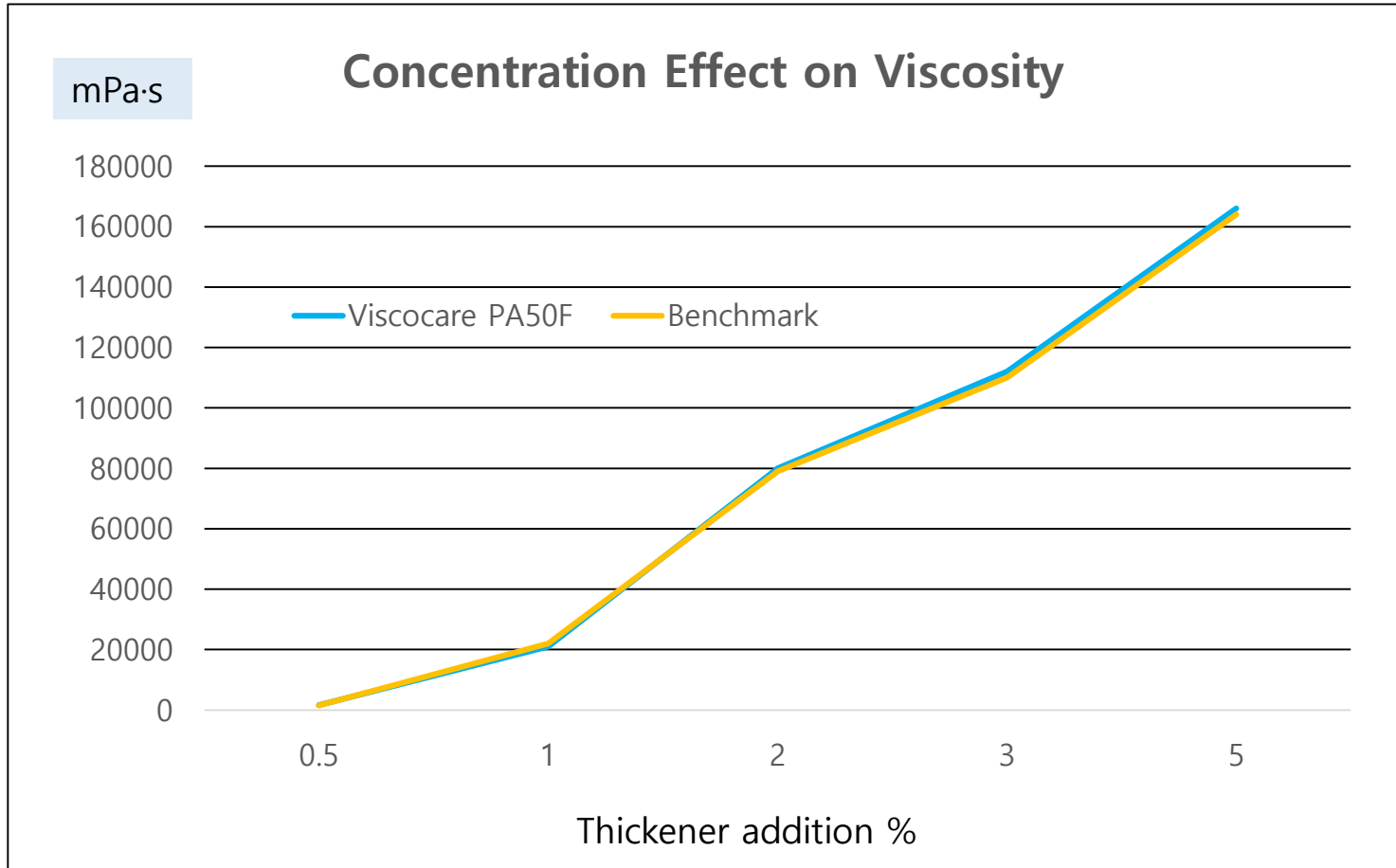
Emulsification Power



Oil	Formula			Stability at 45°C
	FVC-P50(%)	Oil(%)	DI Water(%)	
Isohexadecane	3	40	57	> 1 month
Liquid paraffin	3	40	57	> 1 month
Squalane	3	40	57	> 1 month
Caprylic /Capric triglyceride	3	40	57	> 1 month
C12-15 Alkyl benzoate	3	40	57	> 1 month
Isononyl isononanoate	3	10	87	> 1 month
Jojoba oil	3	40	57	> 1 month
Dimethicone	3	10	87	> 1 month
Cyclomethicone	3	10	87	> 1 month

FVC-P50(Viscocare-PA50F) emulsifies all types of oil and stabilizes regardless of the viscosity and pH of the final emulsion. No heating, emulsifier addition and HLB adjustment were performed in the test, and only simple stirring was used

Thickening Capability Per Concentration Change



- **Objectives**

- Measure the viscosity at various concentrations and compare it to a benchmark

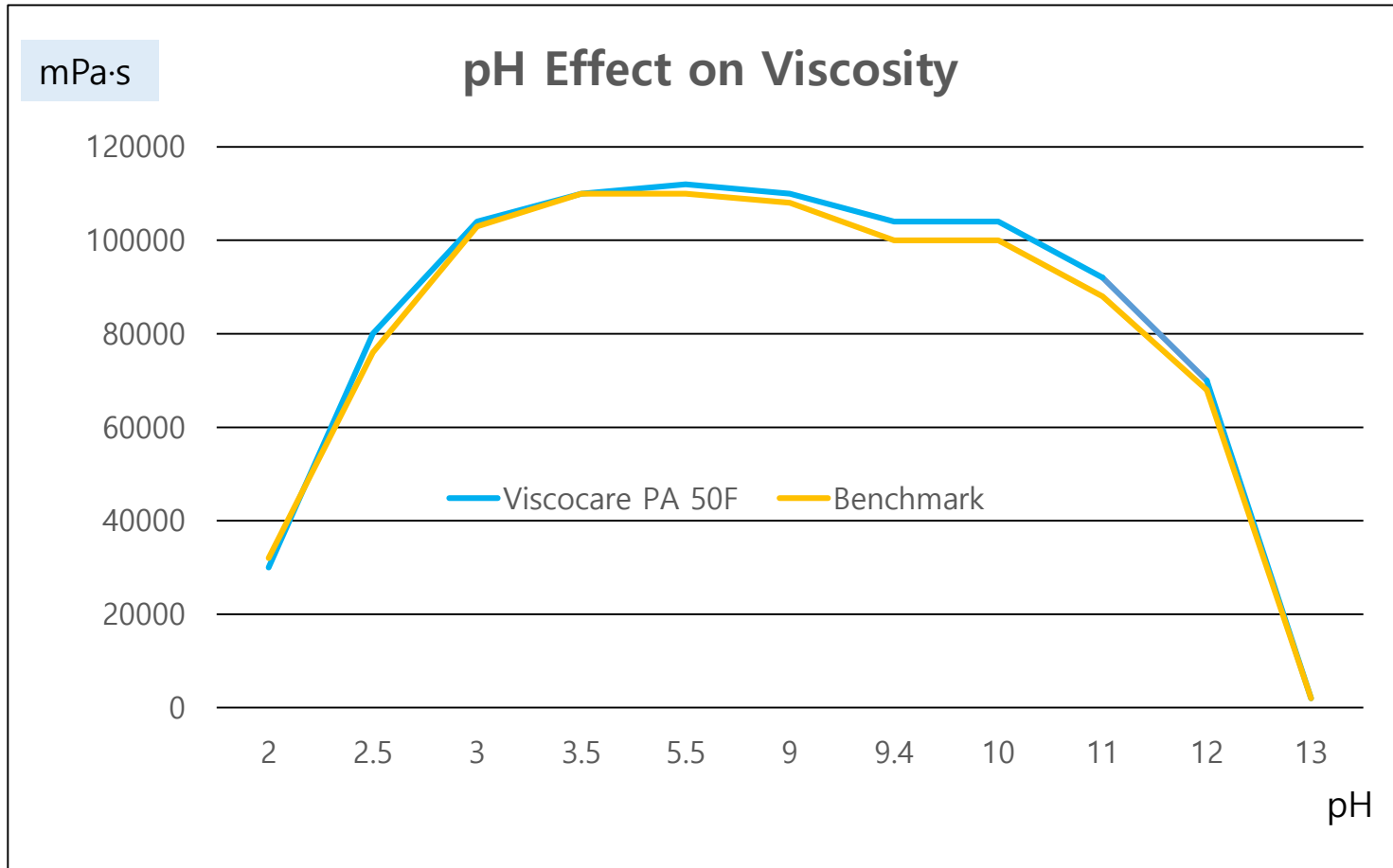
- **Methods**

- Prepare solution of 0.5 – 5.0 % of FVC-P50 (Viscocare-PA50F).
- Using automatic agitation in low concentration
- In high concentration, using manual agitation
- RVT Viscometer

- **Result**

- The viscosity profile of FVC-P50 (Viscocare-PA50F) at various concentrations is very similar to the benchmark one

Thickening capability over a wide pH range



➤ Objectives

- How much it can increase viscosity in pH conditions from acid to base. It also compares with benchmark.

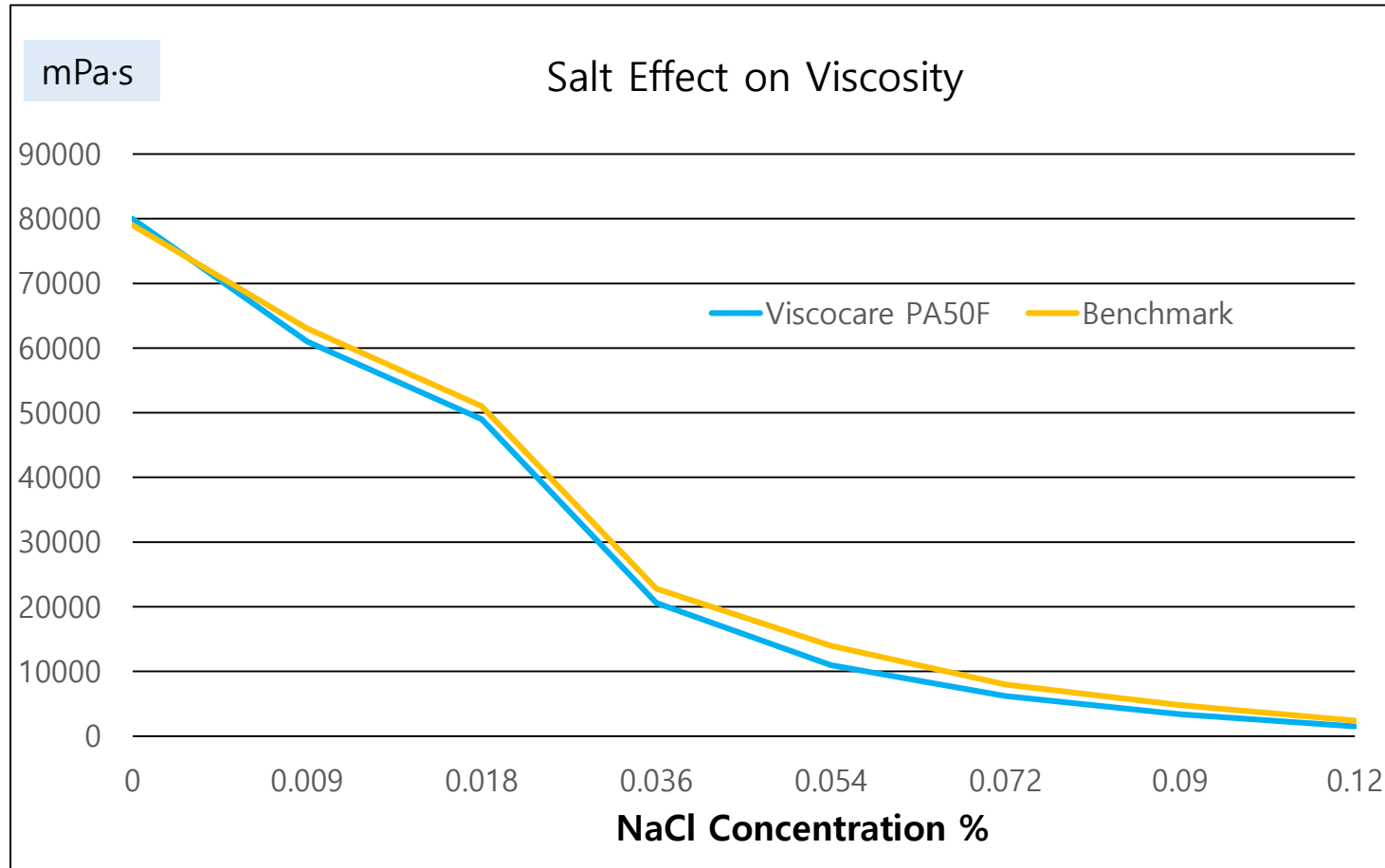
➤ Methods

- Prepare 3% FVC-P50 (Viscocare-PA50F) & benchmark in DI Water, respectively.
- Add Lactic acid or 10% NaOH solution to make a designed pH in 3% FVC-P50 (Viscocare-PA50F) solution & benchmark one, respectively.

➤ Result

- Viscosity profile is similar to a benchmark's one. We confirm 3% FVC-P50 (Viscocare-PA50F) solution in DI water is generating the viscosity between pH 3 and 11.

Thickening capability in presence of Electrolytes



- **Objectives**

- For the purpose of checking the viscosity resistance to the electrolyte

- **Methods**

- Prepare 2% FVC-P50(Viscocare-PA50F) solution in DI water. Do same for benchmark.

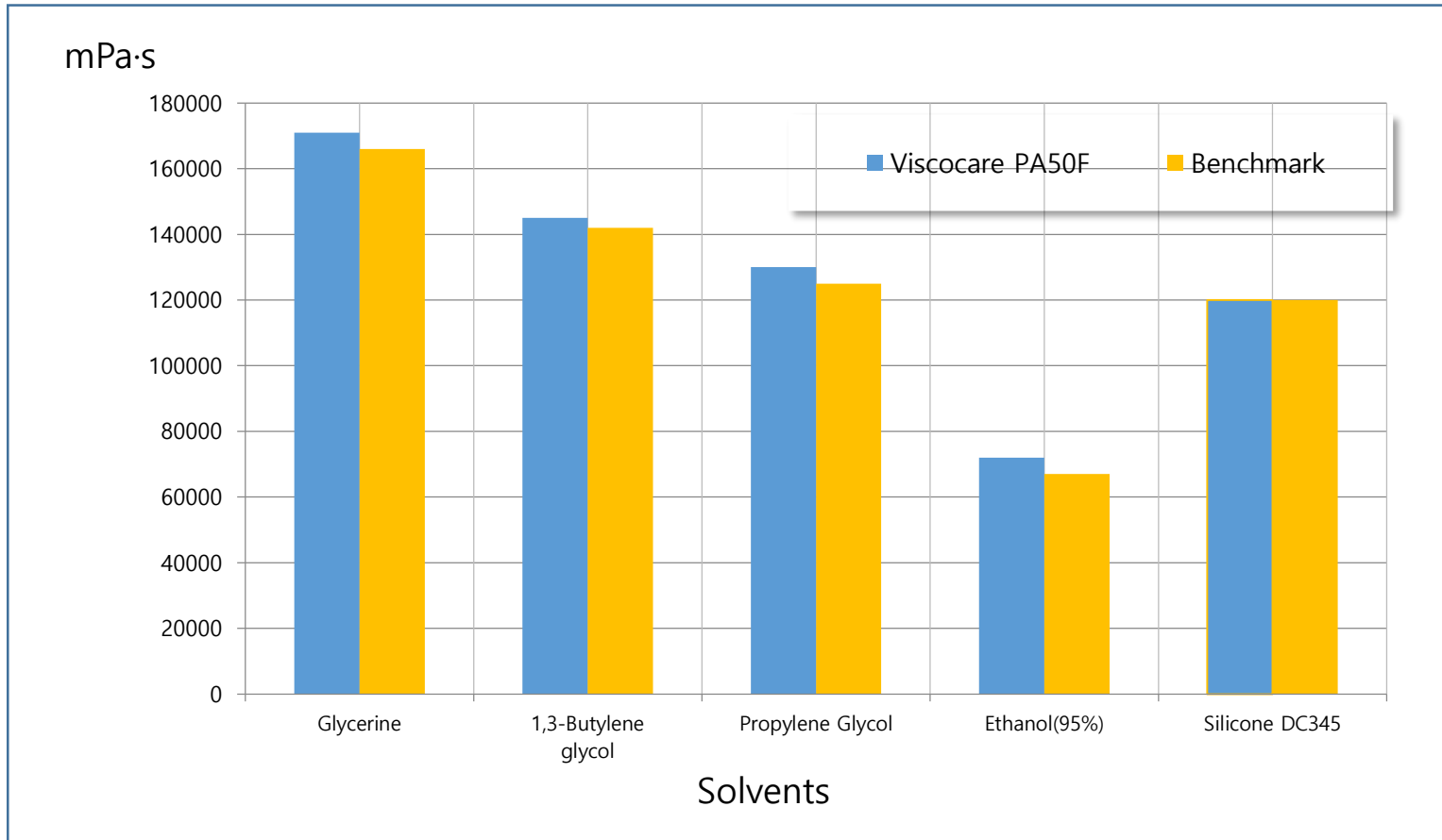
- Add various weight of NaCl to 2% FVC-P50 (Viscocare-PA50F) solution. Do same for benchmark.

- Mix well and measure the viscosity.

- **Test Result**

- Decreasing trend of viscosity is similar

Compatibility with Solvents



➤ Objectives

- How it works to generate viscosity with diverse solvents in use personal care/ cosmetics.

➤ Methods

- Prepare 2% FVC-P50(Viscoscare-PA50F) solution, 48% DI Water and 50 % solvent of Glycerine, 1,3-Butylene glycol, ethanol, propylene glycol, respectively.
- Prepare 2% FVC-P50(Viscoscare-PA50F) solution, 88% DI Water and 10 % Silicone DC345.
- Measure the viscosity to use Brookfield RVT , 5rpm, spindle no 6

➤ Result

- Viscosity is similar to a benchmark's one.

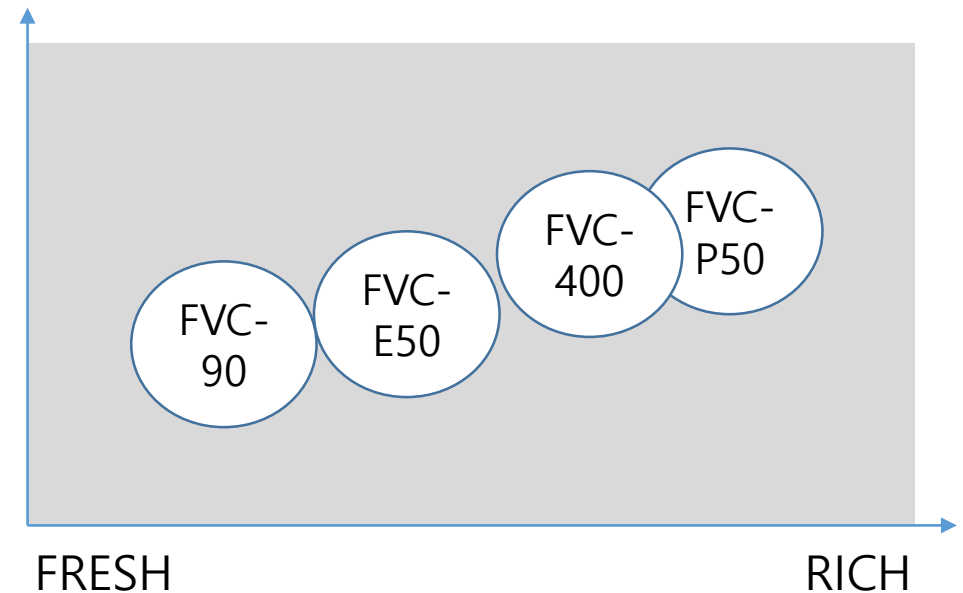
Sensory

FVC-P50(Viscocare-PA50F) delivers following sensory.

- A soft feeling of use
- Ease of pick-up for luxury
- A non-sticky feel to use
- It's absorbed and it's rich and nourishing

Absorption
Slow

Absorption
Fast



Formulation Tips



Cream gel (translucent) products – Moisturizing cream, sleeping pack

- Can be added to oil or water phase.
- Adding to the oil phase makes it easy to disperse the thickener for viscosity generation.

Emulsified (milky) products – lotion, cream

- It is recommended to add the polymer after the emulsification stage and before adding the fragrance and preservatives.
- If added before emulsification, it is recommended to be added to oil phase to facilitate production.

Make-up products - tone-up cream, base makeup

- It is recommended to put the thickener in the last stage of emulsification.
- Inorganic pigment recommends the use of products dispersed in oil or silicon (O/W formulation)



Thank you for your attention

If you have further questions or requests, please contact following
Sam Jeon (ysjeon@ftckorea.com)
Ed Kim (twkim@ftckorea.com)

- Information in this introduction is a referential purpose.
- To the extent permitted by applicable law, the FTC Korea disclaims any liability relating to the use or reliance of your information. The FTC Korea makes no warranty or statement, express or implied, in relation to the utility. Denies an implied warranty of the integrity and merchantability of the information and suitability for a particular purpose. The FTC Korea disclaims liability for any accidental or consequential damages.
- The experimental results included in this catalog are FTC Korea internal experimental data and must be checked by the user when applied to the product. The results are not responsible to the FTC Korea.