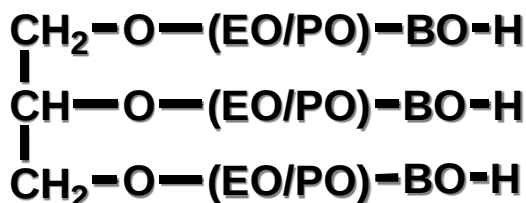


WILBRIDE™ S-753

1 What is WILBRIDE™ S-753?

Chemical



EO: Oxyethylene (8mol)
PO: Oxypropylene (5mol)
BO: Oxybutylene (3mol)

Concept

Water-soluble emollient provides superior touch

INCI

PEG/PPG/polybutyleneglycol-8/5/3glycerin

Applications

Skin toner

Emulsion

Face mask

Make-up
cleansing

2 Features

- ① High safety ~compliant with JSQI
- ② Easy to use ~liquid, colorless, odorless, non-sticky
- ③ Good compatibility ~from water to polar oil
- ④ Good affinity to skin ~provide emollient feeling
- ⑤ Bicontinuous microemulsion inducing
- ⑥ Skin penetration **enhancing** for **hydrophilic** agents
(ex. VC derivatives, Amino acid, Glycerin, etc.)
- ⑦ Skin penetration **inhibiting** for **lipophilic** agents.
(ex. Paraben, UV-RAY absorber, etc.)

3

Compatibility

Category	Ingredients	1%		10%	
		25°C	50°C	25°C	50°C
Solvent	Water	S	S	S	S
	Ethanol	S	S	S	S
	DPG	S	S	S	S
	Oleyl alcohol	S	S	S	S
Triglyceride	Olive oil	S	S	I	I
	Triethylhexanoin	S	S	S	S
Ester	Isopropyl palmitate	S	S	I	S
	Octyldodecyl myristate	S	S	I	I
	Ethyl oleate	S	S	S	S
Hydrocarbon	Squalane	I	I	I	I
Silicone	Dimethicone	I	I	I	I

S : Soluble I : Insoluble

4

Affinity to skin

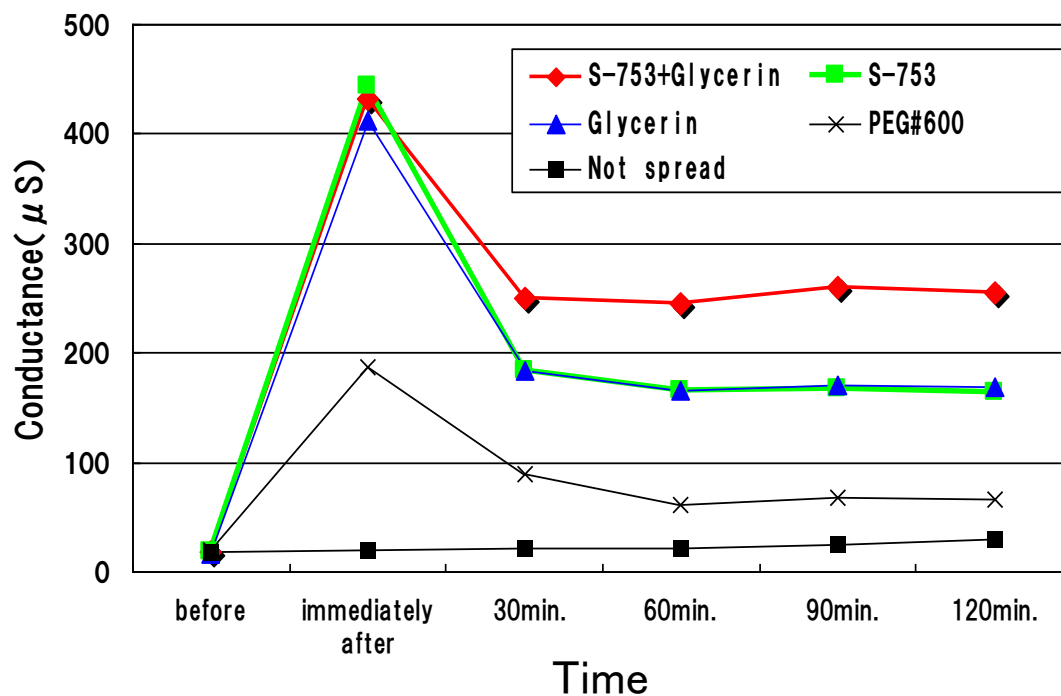


Applying on the artificial skin (1%aq.)

WILBRIDE™ provides good affinity to skin in water system

5

Moisturizing effect



Measured by SKICON

Temperature: 25°C, Humidity: 50%, Concentration: 10wt% aq.

Exhibits synergy effect by combining with glycerin

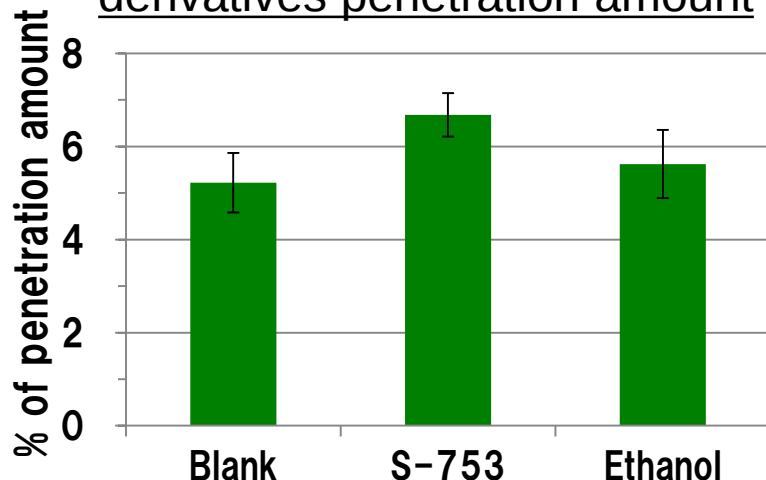
6

Skin penetration enhancing (Tape stripping method)

<Test methods>

1. Applying samples on the arm and Leaving 3hr.
2. Collecting skin surface or horny layer by tape stripping (15 layers).
3. Amount of Vitamin C derivative is measured by HPLC.
4. Penetration amount under horny layer is calculated by subtracting the amount of surface and horny layer from the applied amount

Percentage of the Vitamin C derivatives penetration amount



<Tested Samples>

Active: **2wt% Ascorbyl Glucoside**

Enhancer:

5wt% WILBRIDE™ or Ethanol

WILBRIDE can enhance penetration of Vitamin C derivatives without skin irritation

<Test methods>

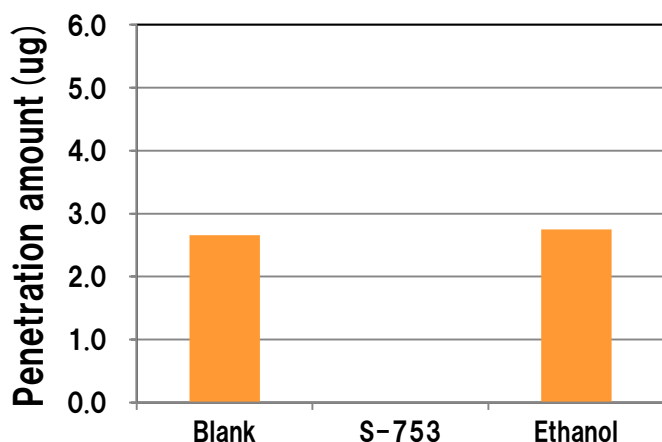
1. Applying samples on the arm and washing off the skin surface with water after 1 hr
2. Collecting horny layer by tape stripping (15 layers)
3. Penetration amount of actives into horny layer is measured by HPLC

<Tested samples>

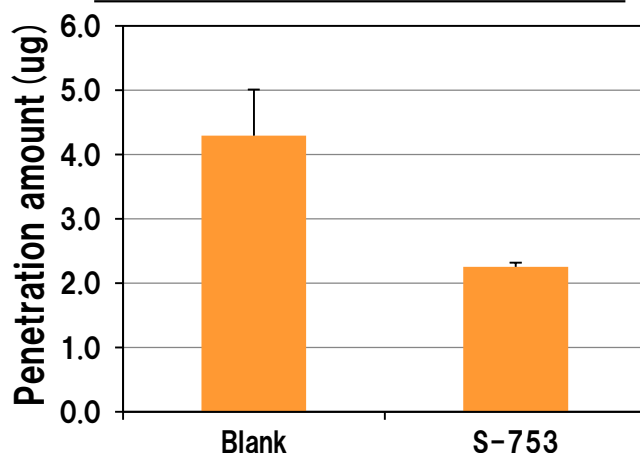
Active: **0.1wt% Methyl Paraben**or **0.1wt% ETHYLHEXYL METHOXYCINNAMATE (OMC)**

Inhibitor: 5wt% WILBRIDE™ or Ethanol

Penetration amount of Paraben



Penetration amount of OMC

**WILBRIDE™ can inhibit penetration of Paraben****Consideration****Amphiphilic Layer
of WILBRIDE****Hydrophilic
agents****Hydrophobic
agents**

Hydrophilic agents : Solubility in a formulation is decreased by amphiphilic property of WILBRIDE
 ⇒ Distribution to horny layer is enhanced

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