

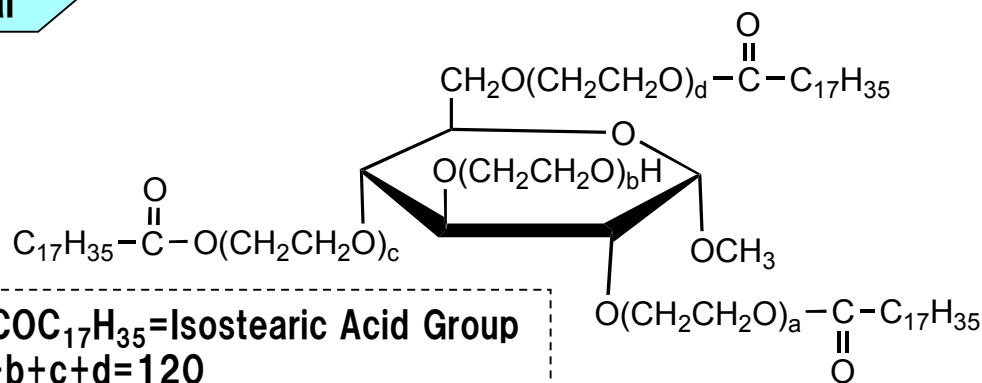
Polyether-type thickener for all surfactants

MACBIOBRIDE™ MG-T

 **NOF CORPORATION**
Oleo & Speciality Chemicals Div.

1 What is MACBIOBRIDE™ MG-T?

Chemical



Concept

Polyether-type thickener for all surfactants

INCI

PEG-120 Methyl Glucose Triisostearate	75%
Tocopherol	0.01%
Water	to 100%

Applications

Shampoo

Face Wash

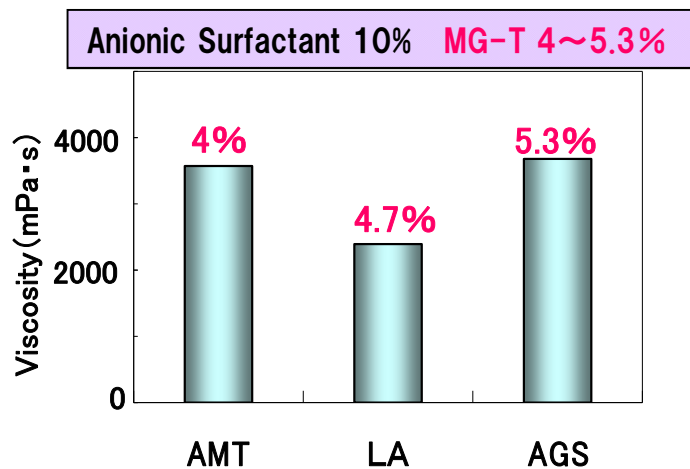
Body Wash

2 Features

- ① Highly efficient thickener for all type surfactants
- ② Synergistic effect with low molecular type thickeners
- ③ Not inhibit foaming ability
- ④ Easy to handle (Freezing Point: ca.10°C)
- ⑤ High safety for eyes and skin

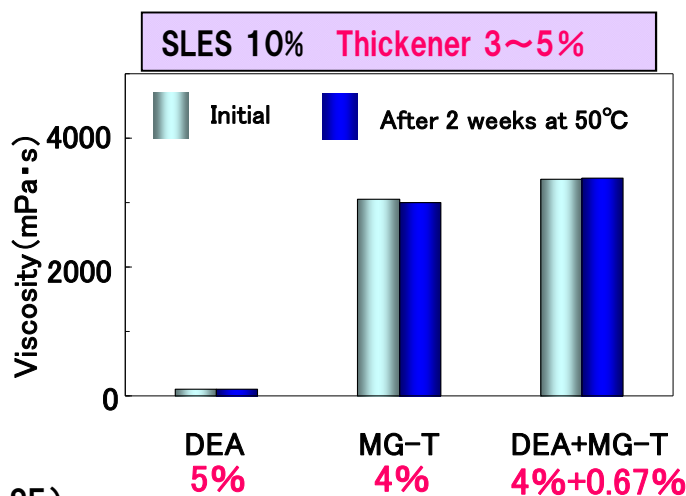
3 Thickening effect

Thickening effect for amino acid surfactants



AMT: Sodium Methyl Cocoyl Taurate (DIAPON™ K-SF)
 LA: Disodium Laurimino Diacetate (NISSAN ANON™ LA)
 AGS: TEA-Cocoyl Glutamate

Synergistic effect with Cocamide DEA



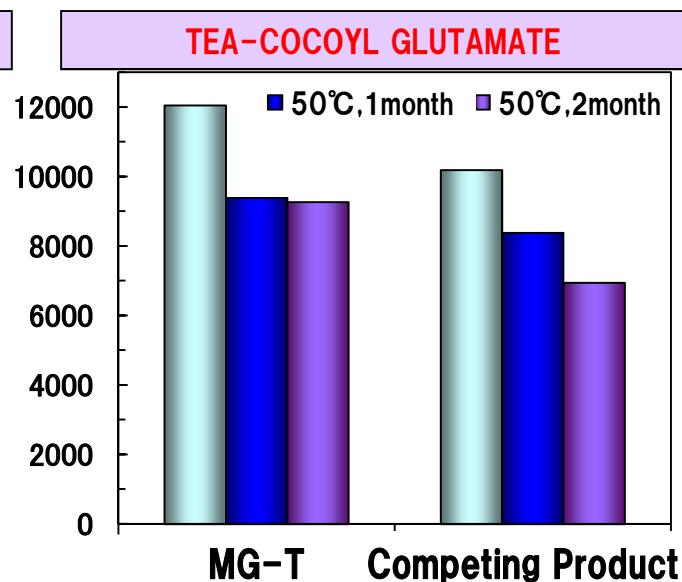
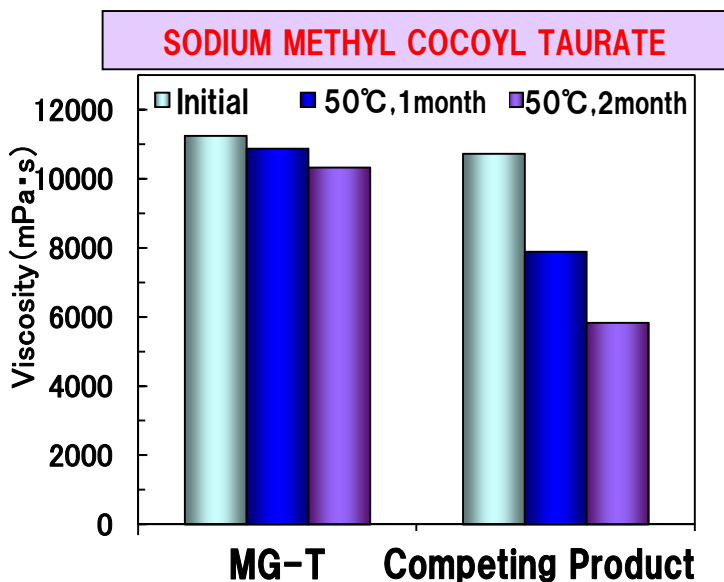
DEA: LauramideDEA (STAFOAM™DL)

Comparison with Competing Products

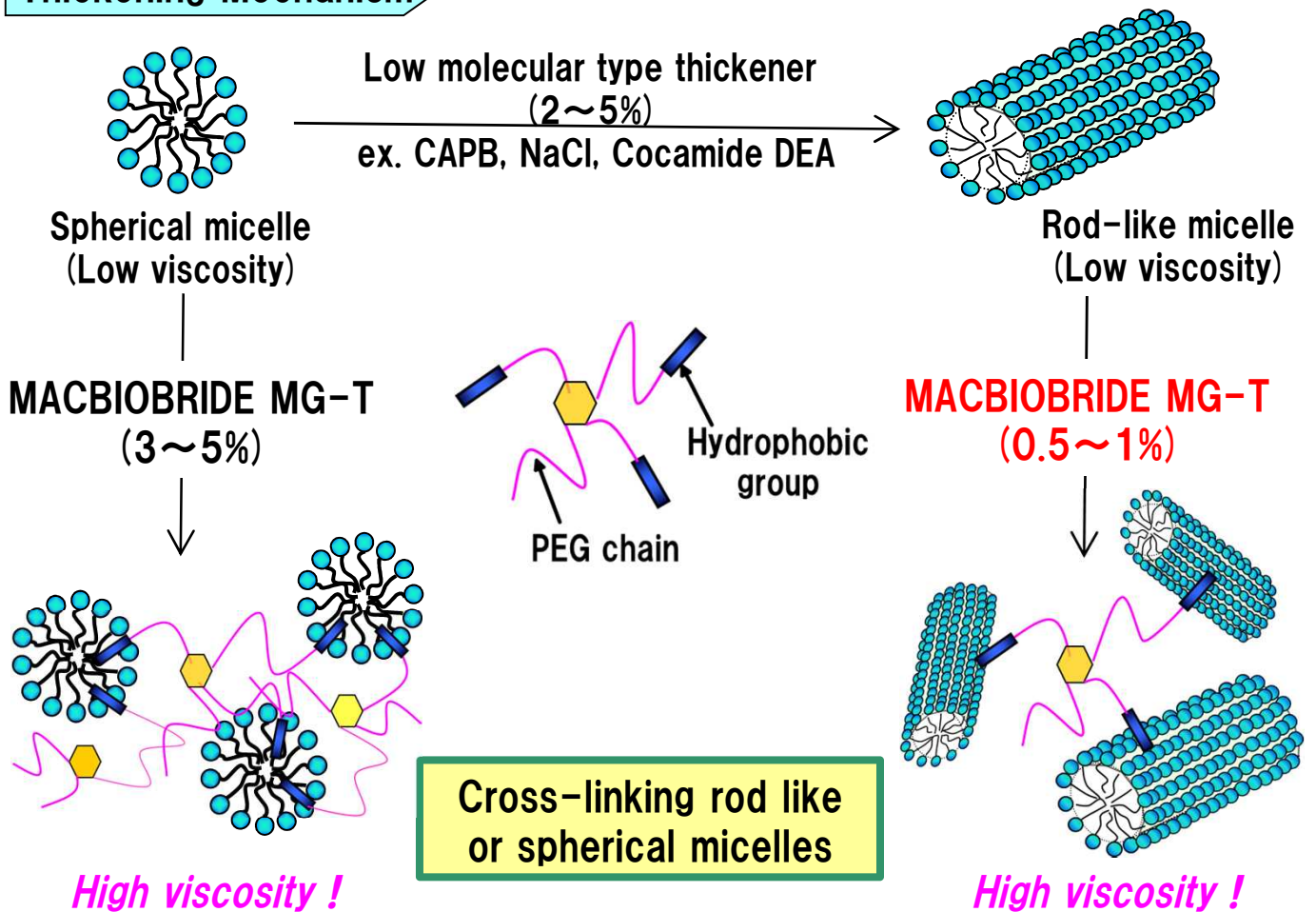
<condition>

- Anionic surfactant : SODIUM METHYL COCOYL TAURATE (AMT) or TEA-COCOYL GLUTAMATE (AGS) ...7.8wt%
- Ampholytic surfactant : COCAMIDOPROPYL BETAINE ...7.8wt%
- Anionic thickener : SODIUM LAUROY METHYLAMINOPROPIONATE ...3.9wt%
- Low molecular type thickener : PROPYLENE GLYCOL LAURATE ...2.0wt%
- Polyether type thickener : MG-T or Competing Product ...1.0wt%

pH:5.5@Citric acid



Thickening Mechanism



3 Formulation guide

FACE WASH GEL

Ingredient	INCI	Wt%
DIAPON™ K-SF	SODIUM METHYL COCOYL TAURATE (30%aq.)	10.0
PERSOFT™ EF	SODIUM LAURETH SULFATE (25%aq.)	20.0
NISSAN ANON™ BDF-R	COCAMIDEPROPYL BETAINE (30%aq.)	16.7
MACBIOBRIDE™ MG-T	PEG-120 METHYL GLUCOSE TRIISOSTEALATE (75%aq.)	1.0
STAFOAM™ DFC	COCAMIDE DEA, GLYCERIN	4.0
—	Preservative, pH adjuster	—
Water	WATER	Balance

pH(as is, 25°C):6.0

Viscosity (mPa·s, 25°C):ca.10000

4 Safety data*

- ① Acute oral toxicity testing
(LD50 \geq 2,000mg/kg, OECD Guidelines 423)
- ② Cumulative application testing
(No stimulation in 10%aq, OECD Guidelines 404)
- ③ Ocular irritation testing
(Smallest stimulation in 20%aq, OECD Guidelines 405)
- ④ Human patch testing (Negative; 45 adults, Occlusive patch 24hours)
- ⑤ Primary skin irritation testing (No stimulation, OECD Guidelines 404)
- ⑥ Skin Sensitization testing (Negative, Guinea Pig Maximization Test)
- ⑦ Mutagenicity (Negative; Ames Test)
 - * Tested Sample: PEG-120 METHYL GLUCOSE TRIISOSTEALATE
 - * All tests was performed before March 2009.



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