The foam enrichment with thickening effect

NONION™ DL-4OHN (W)

NOF CORPORATION

Compliant with JSQI

1 NONION™ DL-4OHN (W)

Chemical Structure	$C_{11}H_{23}CO-(C_2H_4O)_n-C-C_{11}H_{23}$ (O above the carbonyl C)
Concept	*The foam enrichment with thickening effect*
Description	Clear～slightly yellowish liquid
INCI	PEG-75 DILAURATE、WATER
Chinese INCI	PEG-75 二月桂酸酯、WATER

※ 65%aq., including d-δ-tocopherol100ppm

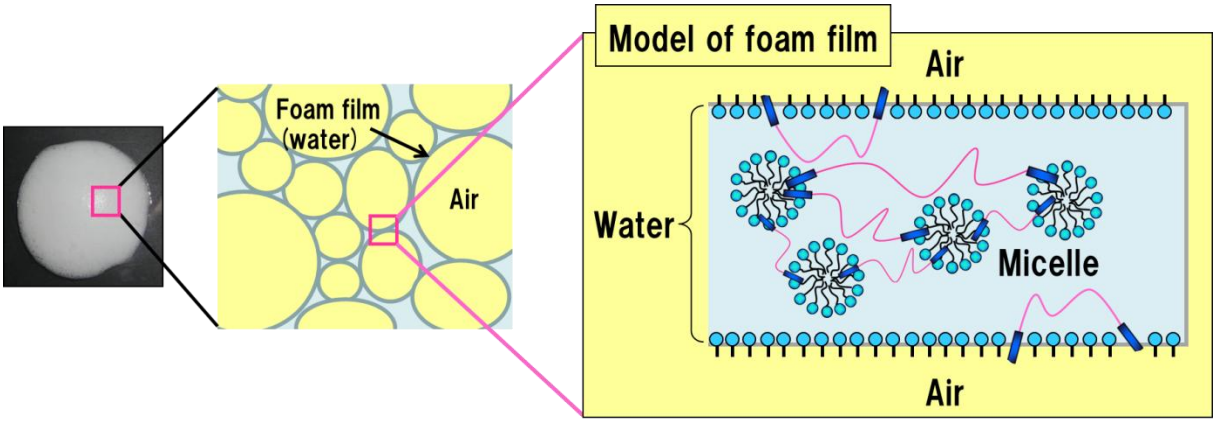
2 Characteristics

① It is suitable for bottle-type cleansing formulation because of good thickening efficacy.

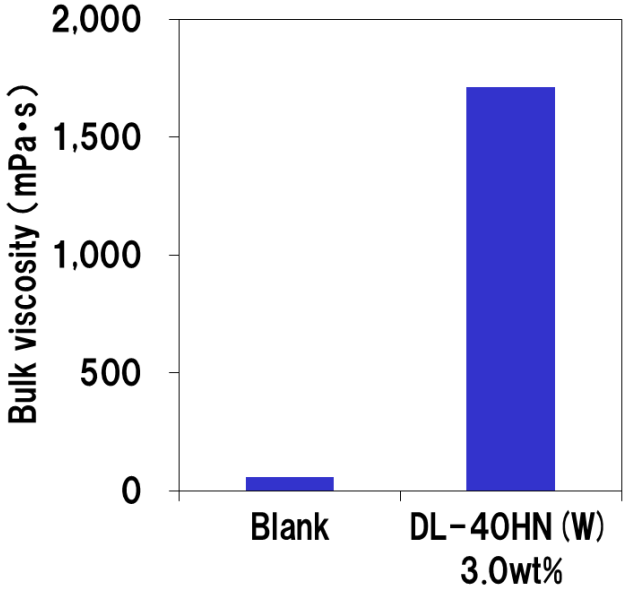
② It improves foam quality and elasticity by cross-linking of micelles in foam film.

③ It is very easy to handle because of liquid state at R.T.

④ It has no slipperiness after washing off.



3 Thickening effect



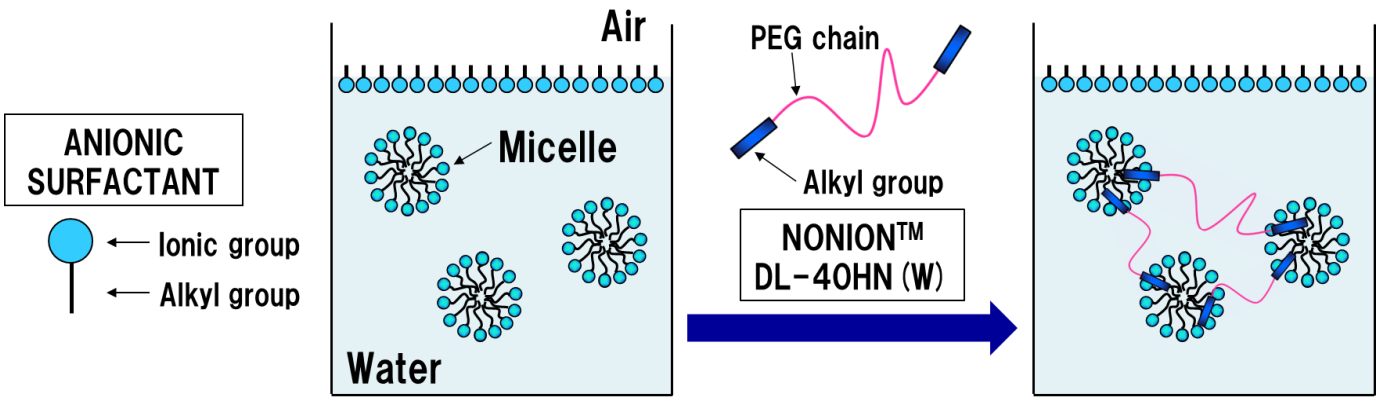
<Sample>

• SODIUM METHYL COCOYL TAURATE	12.0wt%
• COCAMIDOPROPYL BETAINE	8.0wt%
• COCAMIDE DEA	3.0wt%
• POLYQUATERNIUM-10	0.5wt%
• CITRIC ACID	Adjust to pH5.5
• WATER	Balance

<Measuring instrument>
B-type viscometer

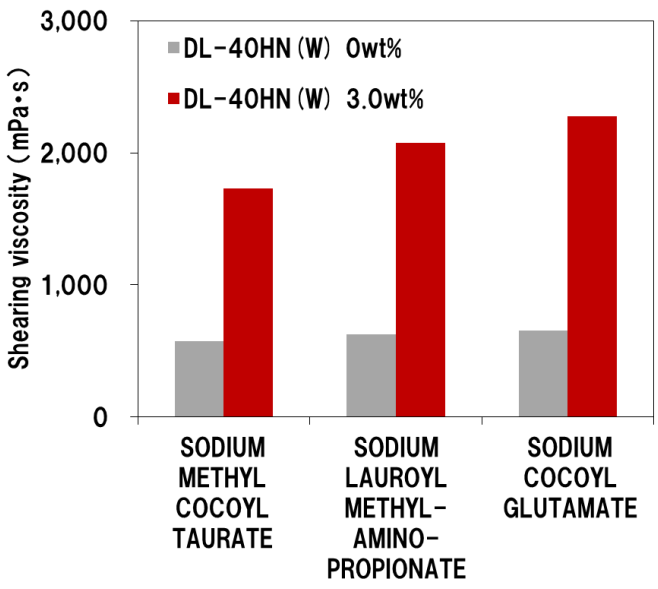
<Measurement conditions>
Rotor No. : 3
Rotational speed : 12rpm
Measurement time : 100sec
Temperature : 25℃

Thickening Mechanism



DL-40HN (W) cross-links micelles ⇒ High viscosity!

4 Foam viscosity



Elastic foam

<Sample>

• ANIONIC SURFACTANTS	1.2 wt%
• SODIUM COCOAMPHO ACETATE	1.2wt%
• GLYCERIN	10.0wt%
• CITRIC ACID	Adjust to pH6.0
• WATER	Balance

< Measuring instrument >
MCR302 (Anton Paar)

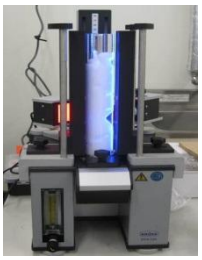
< Measurement conditions >
Cone plate : 25mm, 2°
Shear rate : $1s^{-1}$
Temperature : 25℃

DL-40HN (W) improves foam elasticity!

5 Foam quality / stability

<Method>
①The sample is filled in the glass cylinder.
②Two-dimensional size of the foams reflected in a prism of glass cylinders are monitored over time.

< Measuring instrument >
DYNAMIC FOAM ANALYZER
DFA100 (KRUSS)



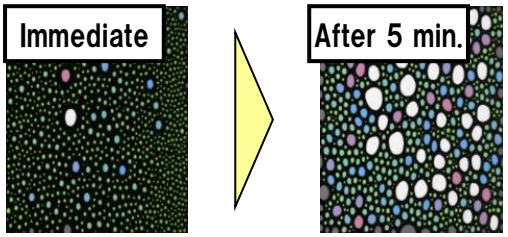
DFA100

<Sample>

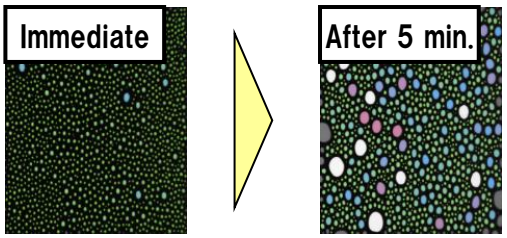
• ANIONIC SURFACTANTS	1.2wt%
• SODIUM COCOAMPHO ACETATE	1.2wt%
• GLYCERIN	10.0wt%
• CITRIC ACID	Adjust to pH6.0
• WATER	Balance

SODIUM LAURETH SULFATE

<DL-40HN (W) 0wt%>

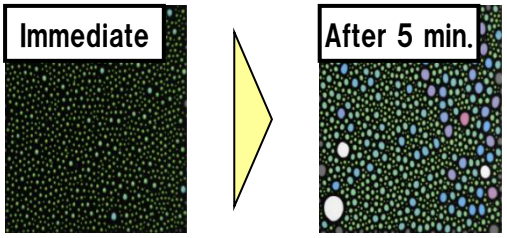


<DL-40HN (W) 3.0wt%>

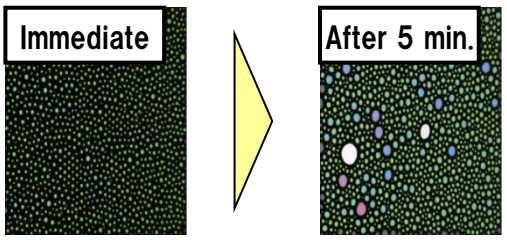


SODIUM METHYL COCOYL TAURATE

<DL-40HN (W) 0wt%>

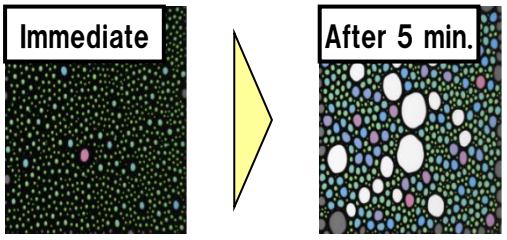


<DL-40HN (W) 3.0wt%>

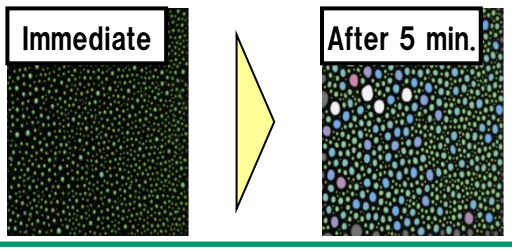


SODIUM LAUROYL METHYLAMINOPROPIONATE

<DL-40HN (W) 0wt%>

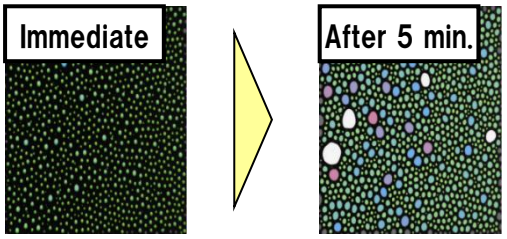


<DL-40HN (W) 3.0wt%>

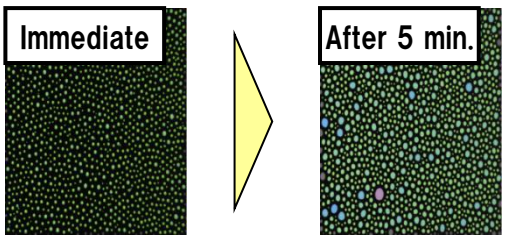


SODIUM COCOYL GLUTAMATE

<DL-40HN (W) 0wt%>



<DL-40HN (W) 3.0wt%>



DL-40HN (W) improves foam quality and stability!

6 Application

Hair shampoo

(active)

Product Name	INCI	wt%
DIAPON® K-SF	SODIUM METHYL COCOYL TAURATE, WATER	12.0
SOFTILT® AS-L	SODIUM LAUROYL METHYLAMINOPROPIONATE, WATER	3.0
ANON® BDF-R	COCAMIDOPROPYL BETAINE, WATER	5.0
STAFOAM® MF PELLET	COCAMIDE MEA	1.0
MACBIOBRIDE® MG-120TIS	PEG-120 METHYLGLUCOSE TRIISOSTEARATE	0.5
NONION™ DL-40HN (W)	PEG-75 DILAURATE, WATER	3.0
-	POLYQUATERNIUM-10	0.5
-	Preservatives, pH adjuster	q.s.
-	WATER	balance

pH:5.5　Viscosity:2,700 mPa・s (25℃)

7 Safety data

- Human patch testing (40 adults, Occlusive patch 24hours)

  Sample concentration : 10% aq.

  Skin irritation index* ≦5; Safe (Negative)

  *T. Sugai, et al., J. of Japanese Cosmetic Science Society, Vol. 19, supp. 49-56 (1995)

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