Oil-soluble aesthetic modifier

TAISET OG-C

What's TAISET OG-C?

INCI: Polyglyceryl-20 Octadecabehenate/Hydroxystearate

Taiset OG-C is a novel breakthrough aesthetic modifier designed to deliver rheology properties and benefits while covering range of oils/waxes. It gives various textures from balm-like hardness to slightly cushioning oil to bouncy textured cream, even enabling very subtle and delicate sensorial perception. Providing a velvety melting texture, enchanting spreadability, smoother final touch, yet not causing stickiness on skin. Allowing less color change and more stability. Patent pending.

Benefits

- ✓ Thixotrophic thickener with faster & higher viscosity recovery, which can broaden the range of creation and achieve an unprecedented product stability
- ✓ Create desired effects in look and in feel targeting all-kind of oil-based applications, even shaping very subtle and delicate texture like bouncy, velvety, melting, mellow and beautifully gliding touch
- ✓ Incomparable thickening efficacy with lowered dosage
- ✓ Easy-to-handle including lower melting point
- ✓ Can be fully compatible with hydrocarbons, ester oils, triglycerides, silicone oils, vegetable oils and UV filters by co-formulating auxiliary ingredients having hydroxyl groups (oils, surfactants, polyols etc.)
- ✓ Subtly translucent and glossy visual effects to improve the evaluation of final products
- ✓ Superb stability enhancer covering not only normal emulsions but anhydrous systems with hydrophilic substances

How to use

Recommended dosage: 0.5-5%

Add TAISET OG-C into oil phase and heat up to 75-80°C until dissolved well.

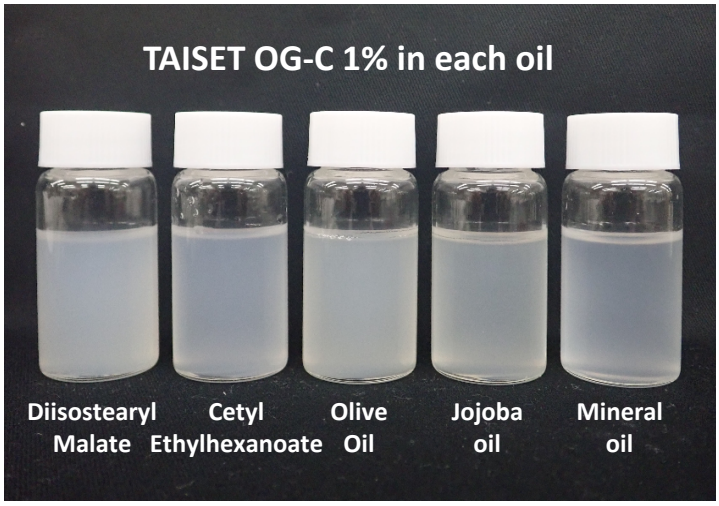
Recommendable applications

- ➢ Oil-gel and/or Balm type formulations
- ➢ Thickening, Stabilizing and/or texture modifier for O/W, W/O emulsion (e.g. Sunscreens, Liquid foundations)
- ➢ Thickening, stabilizing dispersion and/or texture modifier for color cosmetics (e.g. Lip gloss, Lipsticks, Lip creams)
- ➢ Thickening, stabilizing and/or texture modifier for hair styling formulation.

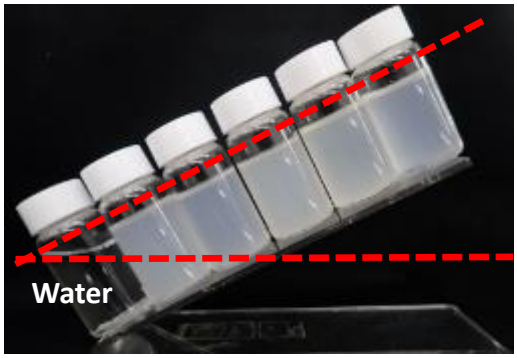
Performance by single use of TAISET OG-C

◆ Thickening effect on various oils

[Static cooling]



Procedure:
Dissolve at approx. 85°C,
Cool down to room temperature without agitation.



TAISET OG-C enables to create a gel with various oils.

◆ Thickening property and viscosity recovery

Thickening property and viscosity recovery were evaluated with various oils while changing dosage of TAISET OG-C and cooling conditions.

Evaluate each appearance the next day of preparation
++: No fluidity +: Viscous but loose gel -: Fluidity close to water (separation)

[Static cooling] **Procedure:** Dissolve oil and OG-C evenly at 85°C, cool down to ambient without agitation

OG-C Dosage	Diisostearyl Malate	Cetyl Ethylhexanote	Olive oil	Jojoba oil	Mineral oil
2%	++	++	++	++	++
5%	++	++	++	++	++

Under shear

[Cooling under agitation] **Procedure:** Dissolve oil and OG-C evenly at 85°C, cool down to ambient under agitation

OG-C Dosage	Diisostearyl Malate	Cetyl Ethylhexanote	Olive oil	Jojoba oil	Mineral oil
2%	++	-	++	+	-
5%	++	+	++	++	+

Oils showing low thickening and viscosity recovery

OG-C Dosage	Cetyl Ethylhexanoate	Isononyl Isononanoate	Mineral oil
2%	-	-	-
5%	+	-	+

**TAISET OG-C is remarkably versatile,
but the compatibility with each oil should be reviewed.**

Performance by the combined use of TAISET OG-C

The combined use of TAISET OG-C, and auxiliary ingredients having hydroxyl group (e.g. oils, surfactants, polyols etc.) enables to achieve far enhanced thickening/gelling effects with viscosity recovery against a range of oils.

Thickening property and viscosity recovery were evaluated with various oils* while using auxiliary (SUNOIL DDI: Polyglycereyl-10 Decaisostearate) with TAISET OG-C in combination.
*Oils not showing effective thickening performance with TAISET OG-C alone

Composition

TAISET OG-C	2%
Oil (see Table 1)	93-98%
Auxiliary (SUNOIL DDI)	0-5%

Procedure:
Dissolve at approx. 85°C,
Cool down to room temperature under agitation.

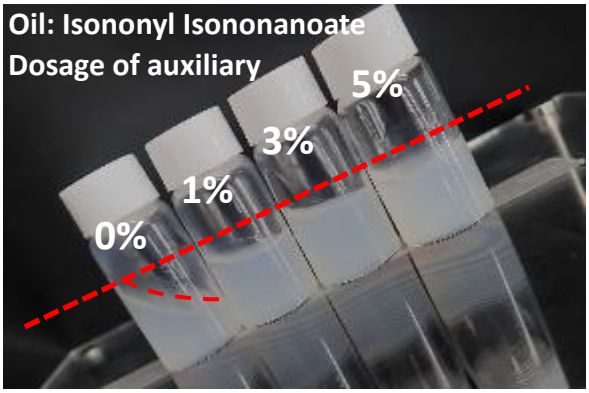


Table 1

Dosage of auxiliary	Cetyl Ethylhexanoate	Isononyl Isononanoate	Mineral oil
0%	-	-	-
1%	+	++	++
3%	+	++	++
5%	++	++	++

Evaluate each appearance the next day of preparation
++: No fluidity
+: Viscous but loose gel
-: Fluidity close to water (separation)

Other auxiliaries are also confirmed to show excellent thickening/gelling property while having viscosity recovery as shown in Table 2.

Composition

TAISET OG-C	2%
Oil (see Table 1)	93%
Auxiliary (see Table 2)	5%

Procedure:
Dissolve at approx. 85°C,
Cool down to room temperature under agitation.

Table 2

Type	INCI	Taiyo's product	Result
Ester oil	Polyglyceryl-10 Decaisostearate	SUNOIL DDI	++
Ester oil	Diisostearyl Malate		++
Surfactant	Polyglyceryl-10 Pentaoleate	SUNSOFT Q-175S-C	++
Surfactant	Polyglyceryl-2 Sesquioleate	SUNSOFT Q-17B-C	++
Surfactant	Glyceryl Oleate	SUNSOFT O-30V-C	+
Surfactant	Glyceryl Caprate		++
Polyol	Glycerin		+
Polyol	Butylene Glycol		+

The most optimal auxiliary can be determined by your base oils.

Performance comparison

◆ Application example: Thickening on cleansing oil

Composition

SUNSOFT Q-192Y-C	12.0%
SUNSOFT Q-102H-C	8.0%
Mineral oil	79.5%
TAISET OG-C	0.5%

Procedure:

[A] Mix all and Dissolve at 85°C
Melting point of TAISET OG-C: 67°C
[B] Cool down to 40°C under agitation (40rpm)
[C] Leave it to cool to room temperature

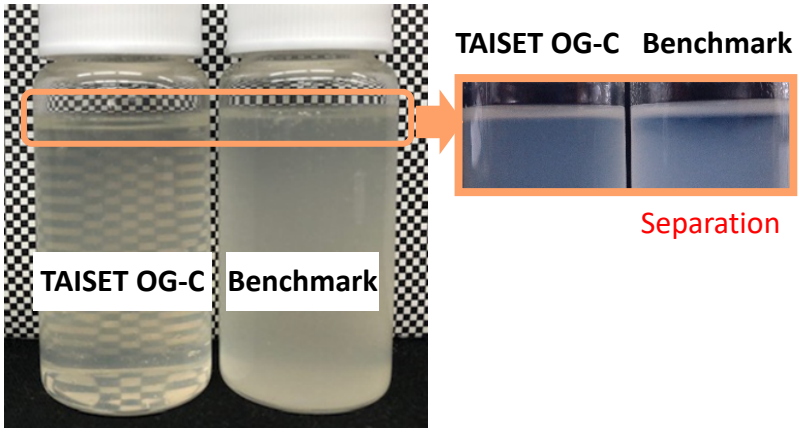
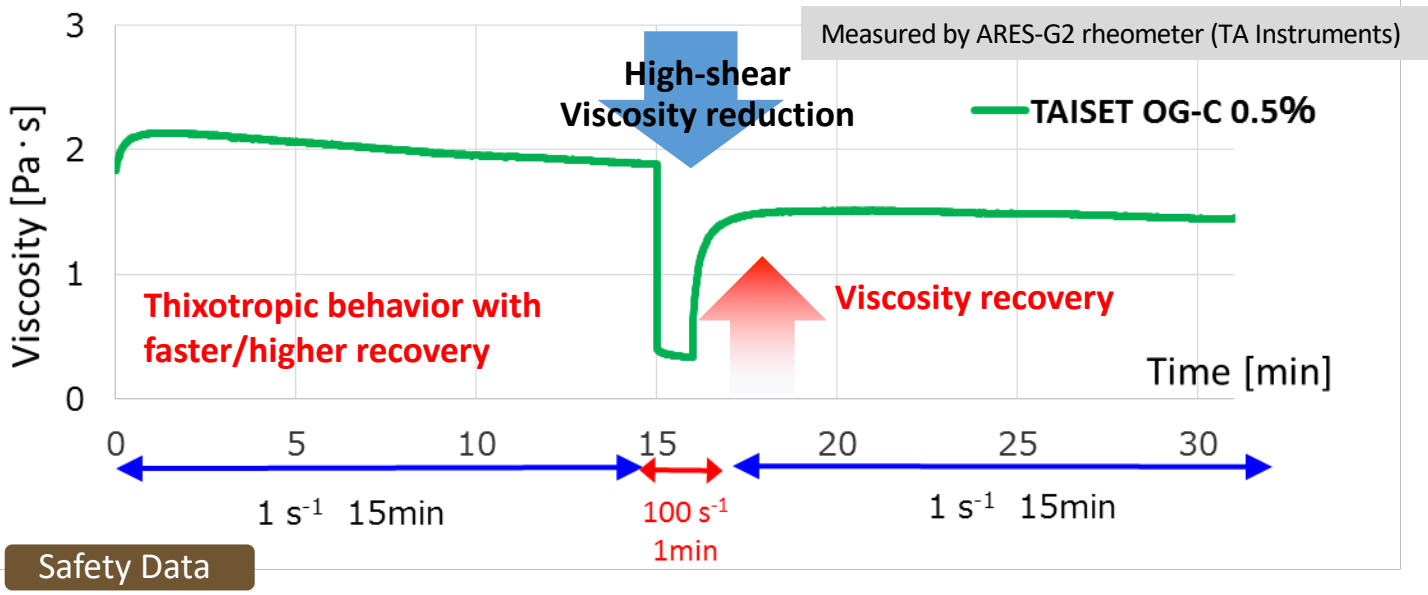


Fig. 1 Appearance of cleansing oil

Clarity 0.5%	Viscosity 0.5%, stored at 25°C	Recovery of viscosity	Formulation stability 9 months at room temp.
See Fig.1	**Higher thickening efficacy at a lowered dosage** TAISET OG-C: 1780mPa・s Benchmark: 620mPa・s	Faster & higher	TAISET OG-C: Stable (no oil separation) Benchmark: Separation



Safety Data

Study	Test method	Result
Skin Sensitization	HRIPT	10% (in Vaseline): Non sensitization (n=31)
Skin Irritation	24-hour Patch Test	10% (in Vaseline): Skin irritation index 0.0 (n=20)
	LabCyteEPI-MODEL24 OECD TG439	10% (in mineral oil): Non-irritating
Eye Irritation	BCOP OECD TG437	10% (in mineral oil): Not requiring classification IVIS ; 0.6 ± 0.1
Mutagenicity	*Salmonella Typhimurium*, Ames test	100% test substance Negative

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