

Supporting Information:

**Lyotropic Liquid Crystalline Phases of a Phytosterol Ethoxylate in Amide
Solvents**

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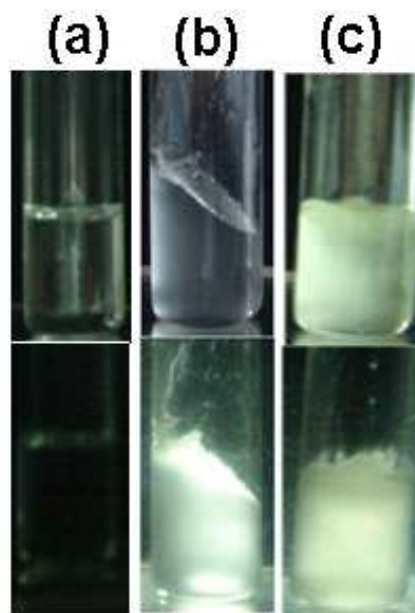


Figure S1. Appearance of samples observed without (top) and with (bottom) polarizers at different BPS-10 concentrations (wt%) in FA: (a) 40%, (b) 55%, (c) 80%.

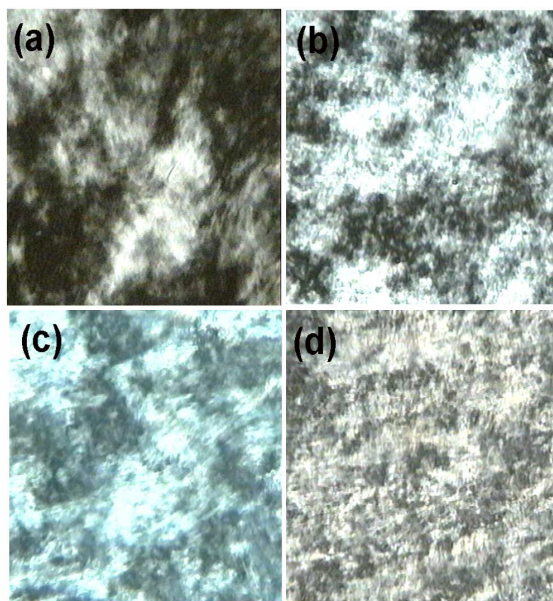


Figure S2. Polarized optical micrographs (a-d) for anisotropic LLC mesophases with different BPS-10 concentrations in FA at room temperature. From (a) to (d), $c_{\text{BPS-10}}$ (wt%) = 50, 55, 65, 75.

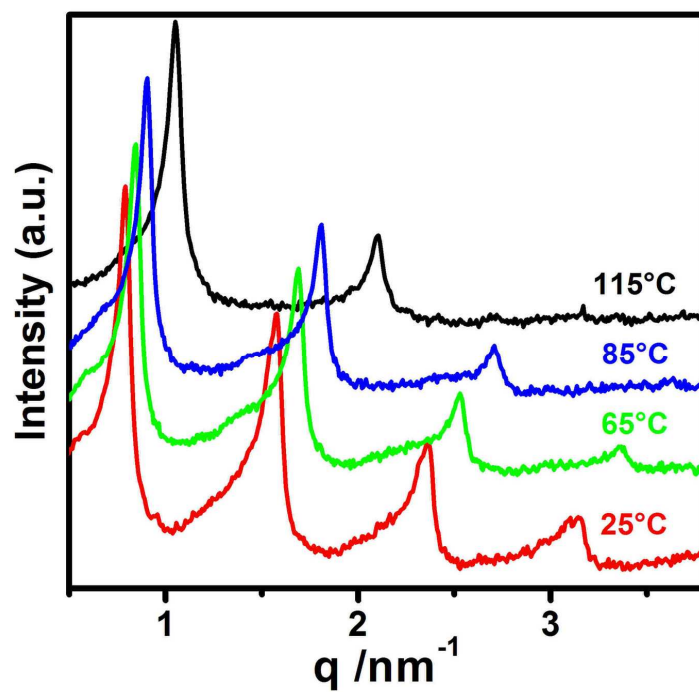


Figure S3. SAXS patterns for the sample with 75% BPS-10 concentration at different temperatures in FA.

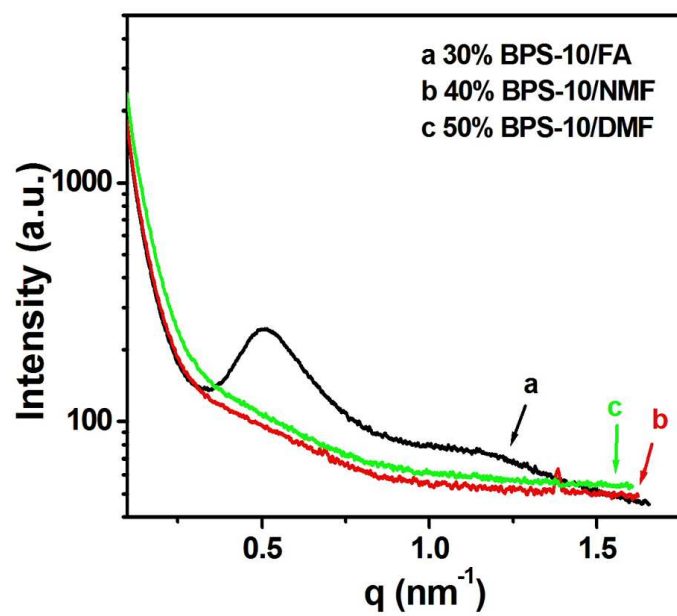


Figure S4. SAXS patterns for the isotropic samples of BPS-10 in different amide solvents.

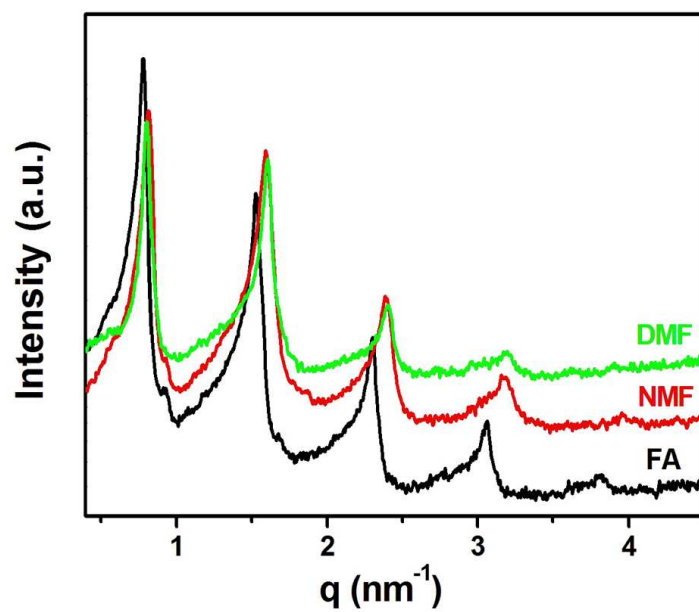


Figure S5. SAXS patterns for the La samples with 75% BPS-10 in different amide solvents.

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Code : S001714

MATERIAL SAFETY DATA SHEET**1. PRODUCT AND COMPANY IDENTIFICATION**

Product Name	: NIKKOL BPS-10
Company	: NIHON SURFACTANT KOGYO K.K.
Address	: 7-14 Hiraide Kogyo Danchi Utsunomiya, Tochigi 321-0904, JAPAN
Division	: QUALITY ASSURANCE
Tel. No.	: 028-661-6121
Fax No.	: 028-663-0426
E-Mail address	: info-msds@nikkol.co.jp
Emergency tel. No.	: NIKKO CHEMICALS CO., LTD.
	: +81-3-3661-1677
Recommended use and restrictions on use	:
	:

2. HAZARDS IDENTIFICATION

Most Important Hazards and Effects	:
GHS Classification	:
Physical and Chemical Hazards	: Not classified
Health Hazards	:
Acute Toxicity (Oral)	: Not classified
Acute Toxicity (Dermal)	: Classification not possible
Acute Toxicity (Inhalation : gases)	: Not applicable
Acute Toxicity (Inhalation : vapors)	: Classification not possible
Acute Toxicity (Inhalation : dust, mists)	: Classification not possible
Skin Corrosion / Irritation	: Classification not possible
Serious Eye Damage / Eye Irritation	: Classification not possible
Respiratory Sensitization	: Classification not possible
Skin Sensitization	: Classification not possible
Germ Cell Mutagenicity	: Classification not possible
Carcinogenicity	: Classification not possible
Reproductive Toxicity	: Classification not possible
Specific Target Organ Systemic Toxicity (Single Exposure)	: Classification not possible
Specific Target Organ Systemic Toxicity (Repeated Exposure)	: Classification not possible
Aspiration Hazard	: Classification not possible
Environmental Hazards	:
Hazardous to The Aquatic Environment - Acute Toxicity	: Classification not possible
Hazardous to The Aquatic Environment - Chronic Toxicity	: Classification not possible
GHS Label Elements	:
Pictograms or Symbols	:
Signal Word	: ,
Hazard Statements	: Not classified
Precautionary Statements	:
【Prevention】	: Wash thoroughly after handling.
【Response】	: IF SWALLOWED: Call a doctor/physician if you feel unwell. F ON SKIN: Wash with plenty of soap and water. F IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
【Storage】	: Store in a closed container.
【Disposal】	: Dispose of contents/container in accordance with local/regional/national/international regulation(to be specified).
【Safe Handling Advice】	: Refer to (M)SDS

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance or Mixture	: Substance		
Ingredients and Concentration Range	:		
Ingredient (INCI Name)		concentration (%)	CAS No.
POE(10) Phytosterol		100	68441-03-2
(PEG-10 Soy Sterol)			

4. FIRST-AID MEASURES

In Case of Inhalation	: Take victim to a place of fresh air and keep at rest in a position comfortable for breathing.
In Case of Skin Contact	: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse.
In Case of Eye Contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention if eye irritation persists:
In Case of Ingestion	: Rinse mouth with water, and provide 1-2 cups of water or milk to drink. Get immediate medical advice/attention. In the event that the victim is not conscious, do not feed anything through the mouth.

5. FIRE-FIGHTING MEASURES

Extinguishing Media	: Powder, alcohol-resistant form, carbon dioxide, sand, water spray.
Not Suitable Extinguishing Media	: No information available
Special Hazards	: During a fire, toxic gases (e.g., carbon monoxide, nitrogen oxide etc) may be generated. Avoid inhaling smoke during fire extinguishing. Remove all combustible objects away from the fire and use adequate extinguishing media. Preferably extinguish the fire from the same direction of the wind. Evacuate personnel not involved in fire extinguishing to safe area. Equipment and machinery in proximity of fire must be sprayed with water to cool. Water used to extinguish a fire should not be allowed to enter the drainage system or water courses.
Special Methods	: Use goggles in combination with dust mask. During a fire, toxic gases (e.g., carbon monoxide, nitrogen oxide etc) may be generated. Avoid inhaling smoke during fire extinguishing.
Protection of Fire Fighters	

6. ACCIDENTAL RELEASE MEASURES

Special Methods	: Use goggles and protective gloves. In case of large spills, remove person to safety. Ensure adequate ventilation.
Environmental Precautions	: Do not discharge into river or sewer. In case of a small spill, absorb with liquid-binding material (sand, soil, cloth) and wipe away the remains with cloth or fabric. Flush surroundings with large amounts of water. In case of a large spill, surround it with the mound of sand or soil to prevent elution and collect into drums or other containers.
Methods for Cleaning Up	: Promptly remove all combustible objects away from the spill and prepare fire extinguishing media. The spills on the floor must be cleaned promptly, otherwise they present a risk of traumatic accident. Avoid walking or stepping on the spills. While cleaning the spill use adequate tools that do not promote sparks of fire.
Prevention of Secondary Hazards	

7. HANDLING AND STORAGE

Handling	
Technical Measures	: The shower with water (for washing of eyes and body) must be installed near the handling facility.
Precautions	: Keep away from source of ignition.
Safe Handling Advice	: Use adequate ventilation. Use goggles and protective gloves. Wash thoroughly after handling.
Storage	
Suitable Storage Conditions	: Store in a well-ventilated place. Keep cool.
Safe Packaging Materials	: No information available

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures	: Exhaust system must be installed in case steam, fume or mist is generated at the operation facility. Shower with water (for washing eyes and body) must be installed near the handling facility.
Limit Values	
ACGIH	: Not established (2008Y)
Protective Equipment	
Respiratory Protection	: Not needed in case of standard handling.
Hand Protection	: Impermeable protective gloves.
Eye Protection	: Goggles or protective glasses with side protectors.
Skin and Body Protection	: Workwear with long sleeves.

Hygiene Measures : No information available

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical States

Form : Solid
 Color : White to yellow or light brown
 Odor : Faint characteristic odor
 pH : 4.5 - 7.5 (5% a.q.)

Specific Temperatures / temperature Ranges at which Changes in Physical State Occur

Boiling Point : No data available
 Melting Point (Congealing point) : No data available
 Flash Point : No data available
 Flammability or Explosive Properties :
 Flammability or Explosive Limits : Upper Limit : no data available Lower Limit : no data available
 Vapour Pressure : No data available
 Vapour Density : No data available
 Specific Gravity : No data available
 Solubility : Soluble
 Water Solubility : No data available
 Solvent Solubility : No data available
 Partition Coefficient : No data available

Auto-Ignition Temperature : No data available
 Decomposition Temperature : No data available
 Odor Threshold : No data available
 Evaporation Rate : No data available
 Flammability (solid, gas) : No data available
 Other Data :

10. STABILITY AND REACTIVITY

Chemical Stability : Stable in general.
 Possibility of Hazardous Reactions : Stable in general.
 Condition to Avoid : Refer to (M)SDS
 Incompatible Materials : No information available
 Hazardous Decomposition Products : Carbon monoxide, Nitrogen compound
 Others :

11. TOXICOLOGICAL INFORMATION

Acute Toxicity (oral) : LD50 >10g/kg
 Acute Toxicity (dermal) : No data available
 Acute Toxicity (Inhalation : gases) : No data available
 Acute Toxicity (Inhalation : vapors) : No data available
 Acute Toxicity (Inhalation : dust, mists) : No data available
 Skin Corrosion / Irritation : Rabbit 24hours Oculative patch stimulation index : 0.5, Non irritant
 Serious Eye Damage / Irritation : Rabbit 100% stimulation index : 0
 Respiratory or Skin Sensitization : No data available
 Mutagenicity (germ cell mutagenicity) : No data available
 Carcinogenicity :
 IARC : Not available
 NTP : Not available
 Reproductive Toxicity : No information available
 Special Methods : No information available
 Special Methods : No information available
 Aspiration Hazard : No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity : No data available
 Persistence / Degradability : No information available
 Bioaccumulative Potential : No information available
 Mobility in Soil : No information available
 Others :

13. DISPOSAL CONSIDERATIONS

14. TRANSPORT INFORMATION

UN Class / UN Number : Not applicable
 Special Precautions for User : Review "Section 7 : "Handling and Storage".
 Ensure containers without breakage or leakage.
 Ensure containers tightly fixed.
 Follow all regulations in your country or region.

15. REGULATORY INFORMATION

Inventories :

ENCS(Japan)	: 8-491
TSCA(USA)	: Yes
ENECS(EU)	: polymer
AICS(Australia)	: Yes
DSL(Canada)	: Yes
ECL(Korea)	: KE-32196
IECSC(China)	: Yes

16. OTHER INFORMATION

Reference

International Chemical Safety Cards (ICSC) Compiler's Guide

The information described herein is based on the documents, information and data, etc. on this product that are currently available to us, but the values, such as contents of ingredients, physical and chemical properties, are not necessarily identical to those in the specification. In addition, the precautions are intended for the cases where this product is handled and used under normal conditions. Thus, in cases of special uses or handling, users should use and handle it, taking appropriate safety measures in accordance with the intended uses and how to use the product.