SECTION 1. IDENTIFICATION

Product Name/Identifier	FSS Vitamin K Liposome PF
Product Code	FSS60119PF
Recommended Use	Ingredients/Raw materials used in the manufacturing of Cosmetic Products'
Restrictions on Use	Refer to the detailed list of labeling/restrictions (Section 15 Regulatory Information)
Supplier/Manufacturing Site	Formulator Sample Shop, LLC
Address	125 Technology Drive Lincolnton, NC 28092, USA
Telephone No. (24hrs)	1-704-276-7540
Emergency Telephone #	1-704-276-7540 (Mon-Fri: 8:00AM – 5:00PM EST)

SECTION 2. HAZARD(S) IDENTIFICATION

Classification:

GHS / CLP
Basis for Classification: Based on present data no classification and labeling is required according to GHS, taking into account the national implementation (United Nations version 2011)

USA
OSHA Regulatory Status: This material is non-hazardous as defined by the American OSHA Hazard Communication Standard (29 CFR 1910.1200).

Europe
Basis for Classification: According to present data no classification and labeling is required according to Reg. (EC) No 1272/2008.
This product is not classified as hazardous to health or environment according to the CLP regulation.

Labeling Elements:

Pictograph: No hazard symbol expected

Hazard statements/Signal Word: Not applicable

Precautionary statements:
P233: Keep container tightly closed
P280: Wear protective gloves/protective clothing/eye protection/face protection
P402: Store in a dry place
P404: Store in a closed container
P410: Protect from sunlight
P411: Store at temperatures not exceeding 32°C

Other hazards which do not result in classification:

No particular fire or explosion hazard.
By mechanical effect: No particular hazards.
By hygroscopic effect: No particular hazards.

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US NFPA 704 (National Fire Protection Association) Hazard Rating System:

Health hazard: Rating 0; Normal Material
Flammability: Rating 0, Will Not Burn
Reactivity: Rating 0, Stable
Other Hazard Information: None

Results of PBT and vPvB assessment:

-PBT: Not applicable
-vPvB: Not applicable

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Common Chemical Name: Phospholipids & Phytonadione

Generic name:

Chemical Family: Liposomes

Description: Mixture: consisting of the following components. This section describes all components of the mixture

Substance	CAS Numbers	EC Numbers	Percentage
Water	7732-18-5	231-791-2	86.10%
Phospholipids	8002-43-5	232-307-2	10.90%
Leuconostoc/Radish Root Ferment Filtrate	1686112-10-6 (or) 84775-94-0	N/A (or) 283-918-6	2.00%
Phytonadione	84-80-0	201-564-2	1.00%

Formula: Not applicable

SECTION 4. FIRST-AID MEASURES

General: In all cases of doubt, or when symptoms persist, seek medical attention.

Inhalation: Move to fresh air from exposure area. Get medical attention for any breathing difficulty.

Skin contact: Rinse with soap and water. Get medical advice if irritation develops.

Eye contact: Immediately rinse with plenty of water for at least 15 minutes, while keeping the eyes wide open. Consult with a physician.

Ingestion: Consult with a physician.

Protection of first-aiders: No special protection required.

SECTION 5. FIRE-FIGHTING MEASURES

Fire and explosion hazards: Not considered to be a fire and explosion hazard

Extinguishing media:
Suitable: Water, dry chemicals, foam and carbon dioxide
Not suitable: None known

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Fire fighting:	Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low area
Protection for fire-fighters:	Boots, gloves, goggles.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Avoid contact with eyes. Personal Protective Equipment: -Protective goggles
Environmental precautions:	Prevent entry into sewers and waterways. Do not allow material to contaminate ground water system
Methods for cleaning up:	
Recovery:	Pick up free liquid for recycling or disposal. Residual liquid can be absorbed on an inert material. Sweep or vacuum up any powder and place in a clearly labeled waste container, avoiding dust formation.
Cleaning/Decontamination:	Wash non-recoverable remainder with water.
Disposal:	For disposal of residues refer to sections 8 & 13.

SECTION 7. HANDLING AND STORAGE

Handling

Technical measures:	Labeling: Keep out of the reach of children.
Measures:	For industrial use, only as directed.
Safe handling advice:	Wash hands after use. Avoid storage near feed or food stuff.

Storage

Technical measures:	Keep container closed.
Recommended Storage Conditions:	Store in a dry place at temperatures not exceeding 32°C. Based on stability studies, the optimum storage temperature for maximization of shelf life is 23 - 25°C. However, it may be stored at temperatures between 16 and 32°C if such specific temperature control is not available. Do not freeze. Please refer to stability data for effects heat or cold may have on the specifications of the product.
Incompatible products:	Avoid contact with strong oxidizers. Refer to the detailed list of incompatible materials (Section 10 Stability/Reactivity)
Packaging:	Product may be packaged in normal commercial packaging.
Packaging materials:	Recommended - Polypropylene & High Density Polyethylene

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SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Precautionary statements: Ensure adequate ventilation

Control parameters

Occupational exposure Limits:

France:	Not Determined
ACGIH:	Not Determined
Korea:	Not Determined
UK:	Not Determined
Surveillance procedures:	Not Determined
Engineering measures:	Not Determined

Personal Protective Equipment:

Respiratory protection:	Local exhaust
Hand protection:	Protective gloves made of rubber or neoprene.
Eye protection:	Safety glasses.
Collective emergency equipment:	Eye fountain.
Skin and Body Protection:	Suitable protective clothing
Hygiene measures:	Handle in accordance with good industrial hygiene and safety practice.
Measures related to the Environment:	No particular measures.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Liquid liposomal dispersion
Odor:	Characteristic
Solids (1g / 1hr @ 105°C):	8.0% Minimum
pH (@ 25°C):	5.0 – 7.0
Particle Size:	250 nm Maximum
Heavy Metals:	< 20 ppm
Lead:	< 10 ppm
Arsenic:	< 2 ppm
Cadmium:	< 1 ppm
Microbial Content:	< 100 CFU/g; No pathogens
Yeast & Mold:	< 100 CFU/g
Gram Negative Bacteria:	0 CFU/g
Specific Gravity:	Not determined
Vapor density:	Not applicable
Boiling Point:	100°C
Freezing Point:	0°C
Melting point:	Not applicable

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Flash point:	> 200°F
Oxidizing properties:	Non oxidizing material according to EC criteria.

Solubility:

In water:	Dispersible
In organic solvents:	Not determined
Log P:	Not determined

SECTION 10. STABILITY AND REACTIVITY

Stability: Stable under ordinary conditions of use and storage up to one year then re-test to full product specifications to extend shelf life

Hazardous reactions: None known

Conditions to avoid: No dangerous reactions known under use of normal conditions. Avoid extreme heat.

Materials to avoid: No dangerous reaction known with common products.

Hazardous decomposition products: None known

SECTION 11. TOXICOLOGICAL INFORMATION

Ingestion:	Not Determined
Dermal:	Non-Irritant (Dermal Irritection Model)
Ocular:	Non-Irritant (Ocular Irritection Model)
Inhalation:	Not Determined
Acute toxicity data:	Non-Irritant
Sensitization:	Non-Primary Sensitizers
Repeated dose toxicity:	No known effects
Subacute to chronic toxicity:	Not Determined

Additional Toxicological Information: This product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.

Specific effects:

Carcinogenicity:	No known effects
Mutagenicity:	No known effects
Reproductive toxicity:	No known effects
Neuro-toxicity:	No known effects

For more information: Does not present any particular risk on handling under normal conditions of good occupational hygiene practice.

This product has not been tested for the following:
-Primary cutaneous and corrosive irritation
-Acute oral toxicity
-Mutagenicity/genotoxicity

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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
Effects on the aquatic environment: Not Determined

Biodegradability:
Persistence: Readily Biodegradable (93.4% biodegradation after 28 days of testing)

Bioaccumulation:
Octanol / water partition coefficient: Not Determined

Mobility:
Precipitation:
Expected behavior of the product: Ultimate destination of the product: Soil & sediment.

Other Adverse Effects: None known

SECTION 13. DISPOSAL CONSIDERATIONS

Residues from product

Prohibition: Do not allow the product to be released into the Environment.
Destruction/Disposal: Dispose of in accordance with relevant local regulations

Contaminated packaging

Decontamination/cleaning: Cleaning is not required prior to disposal.
Destruction/Disposal:

Note: Take all necessary precautions when disposing of this product according to local regulations.

SECTION 14. TRANSPORT INFORMATION

UN Number: None
UN Shipping Name: None
Transport Hazard Class: Not classified as dangerous for transport

Land (rail/road): Material is not restrictive for land transport and is not regulated by ADR/RID
Sea: Material is not restrictive for sea transport and is not regulated by IMO/IMDG
Air: Material is not restrictive for air transport and is not regulated by ICAO/IATA

Marine Pollutant: No

Transport/Additional Information: Not regulated for US DOT Transport in non-bulk containers
This material is not dangerous or hazardous

Special Precautions for User: None known

The above regulatory prescriptions are those valid on the date of publication of this sheet. However, given the possible evolution of transport regulations for hazardous materials and in the event of the MSDS in your possession dating back more than 12 months, it is advisable to check their validity with your sales office.

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SECTION 15. REGULATORY INFORMATION

Labeling / Restrictions:

EC regulations:	Phytonadione is listed in Annex II (List of Substances Prohibited in Cosmetic Products) of Regulation (EC) No 1223/2009
Australian regulations:	
Restrictions:	Not to be used on topical eye applications
Korean regulations:	Phytonadione is banned for use in cosmetic products (Korean Cosmetic Products Act)
ASEAN regulations:	Phytonadione is listed in Annex II, Part 1 (List of Substances which must not form part of the composition of cosmetic products.)

Further regulations

United Kingdom:	Handle in accordance with relevant British regulation: control of substance Hazardous to Health Regulations Environmental Hygiene Guidance: EH40 Workplace Exposure Limits (revised annually)
Korea regulations:	Industrial safety and hygiene regulation: No Hazardous material control regulation: No Fire prevention regulation: No

Other regulations:

EINECS inventory status:	Aqua: 231-791-2 Phospholipids: 232-307-2 Leuconostoc/Radish Root Ferment Filtrate: N/A (or) 283-918-6 Not Allowed: Phytonadione: 204-564-2
TSCA inventory status:	Exempt
AICS inventory status:	Not Listed: 1686112-10-6 Listed: 7732-18-5 & 8002-43-5 & 84775-94-0 & 84-80-0
Canadian (CEPA DSL) inventory status:	Not Listed: Leuconostoc/Radish Root Ferment Filtrate (1686112-10-6) Listed as Water (DSL) & Lecithins (DSL) & Radish, ext. (Revised ICL) & 1,4-Naphthalenedione, 2-methyl-3-(3,7,11,15-tetramethyl-2-hexadecenyl)-, [Ø-[Ø*,Ø*-(Õ)]]- (DSL)
Japan (MITI list):	Water & Phospholipids & Leuconostoc/Radish Root Ferment Filtrate & Phytonadione
Korea:	Not Allowed: Phytonadione Listed: Water & Phospholipids & Leuconostoc/Radish Root Ferment Filtrate**
China inventory status:	Water & Phospholipids & Leuconostoc/Radish Root Ferment Filtrate & Phytonadione*
Philippines inventory status:	Not Allowed: Phytonadione (84-80-0) Not Listed: Leuconostoc/Radish Root Ferment Filtrate (1686112-10-6 (or) 84775-94-0) Listed as Water & Lecithins

*Listed on 2010 INCI Standard Chinese Name Directory
**Not listed in 2004 CTFA Dictionary – Registered with Personal Care Products Council

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Note: The regulatory information given above only indicates the principal regulations specifically applicable to the products described in this sheet. The user's attention is drawn to the possible existence of additional provision which complete these regulations. Please refer to all applicable international, national and local regulations and provisions

SECTION 16. OTHER INFORMATION

Prohibited uses:	For specific uses, food industry, ask the manufacturer for more information.
Last Revision Date:	06/18/2018
Preparation Date:	11/04/2026
MSDS summary of changes	- Updated EU Regulatory Information – Section 15 (Regulatory Information) - Updated Korean/ASEAN Regulatory Information – Section 15 (Regulatory Information) - Updated CAS/EINEC#'s – Section 3 (Composition / Information on Ingredients) & Section 15 (Regulatory Information) & Updated Transport Information – Section 14 (Transport Information) - Updated CAS/EINEC#'s – Section 3 (Composition / Information on Ingredients) & Section 15 (Regulatory Information) & Added Lead & Cadmium & Updated Microbial Content – Section 9 (Physical & Chemical Properties) - Updated Europe Basis for Classification & Precautionary Statement – Section 2 (Hazards Identification), Updated Recovery Methods for Cleaning Up – Section 6 (Accidental Release Measures), Updated Recommended Storage Conditions – Section 7 (Handling & Storage), Added Irritation & Acute Toxicity Data – Section 11 (Toxicological Information) & Added Biodegradability Data – Section 12 (Ecological Information) - Updated Recommended Use & Removed Fax Number – Section 1 (Identification), Updated Precautionary Statement – Section 2 (Hazards Information) & Added Australian Labeling/Restrictions – Section 15 (Regulatory Information)

The information given is based on our knowledge of this product, at the time of publication in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than which it was intended. This is not in any way excuse the user from knowing and applying all the regulations governing their activity. It is sole responsibility of the user to take all precautions required in handling the product. The purpose of mandatory regulation mentioned is to help the user to fulfill his obligations regarding the use of products. This information is not exhaustive, this is not exonerate the user from ensuring that legal obligations other than those mentioned, relating to the use and storage.

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