

**BROILER VITAMINS****NP30191025**

Version 1.0

Revision Date 08/21/2024

Date of last issue: -

**SECTION 1. IDENTIFICATION**

Product name : BROILER VITAMINS

**Manufacturer or supplier's details**

Company name of supplier : DSM Nutritional Products LLC

Address : 250 Plainsboro Rd  
Plainsboro NJ 08536

Telephone : (609) 452-1000

E-mail address of person responsible for the SDS : sds.nutritionalproducts@dsm.com

**SECTION 2. HAZARDS IDENTIFICATION****GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

Combustible dust

Eye irritation : Category 2A

Reproductive toxicity : Category 1B

**GHS label elements**

Hazard pictograms :



Signal word : Danger

Hazard statements : May form combustible dust concentrations in air.  
H319 Causes serious eye irritation.  
H360 May damage fertility or the unborn child.Precautionary statements : **Prevention:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P264 Wash skin thoroughly after handling.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.**Response:**

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

**Storage:**

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P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

Risk of dust explosion.

Women of childbearing age must avoid any overexposure.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Brief description of the product : Mixture  
uct**Hazardous components**

Chemical name	CAS-No.	Concentration (% w/w)
nicotinic acid	59-67-6	>= 5 - < 10
3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-yl acetate	7695-91-2	>= 5 - < 10
silicon dioxide, amorphous	112926-00-8	>= 5 - < 10
calcium pantothenate, D-form	137-08-6	>= 1 - < 5
riboflavin	83-88-5	>= 1 - < 5
ethoxyquin	91-53-2	>= 1 - < 5
Menadione sodium bisulfite trihydrate	6147-37-1	>= 1 - < 5
retinyl acetate	127-47-9	>= 0.1 - < 1

Actual concentration is withheld as a trade secret

**SECTION 4. FIRST AID MEASURES**

- General advice : Move out of dangerous area.  
Show this safety data sheet to the doctor in attendance.  
After any accidental exposure women should seek medical advice from a physician.
- If inhaled : Move to fresh air.  
Consult a physician after significant exposure.
- In case of skin contact : Take off contaminated clothing and shoes immediately.  
Wash off with soap and plenty of water.  
If symptoms persist, call a physician.
- In case of eye contact : Immediately flush eye(s) with plenty of water.  
Remove contact lenses.  
Protect unharmed eye.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.
- If swallowed : Rinse mouth with water.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : Causes serious eye irritation.  
May damage fertility or the unborn child.

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**SECTION 5. FIREFIGHTING MEASURES**

- Suitable extinguishing media : Water  
Foam
- Specific hazards during fire-fighting : None known.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.  
Consider dust explosion hazard.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.  
Use personal protective equipment.  
Ensure adequate ventilation.  
Avoid dust formation.  
Avoid breathing dust.
- Environmental precautions : Do not flush into surface water or sanitary sewer system.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Pick up and arrange disposal without creating dust.  
Keep in suitable, closed containers for disposal.

**SECTION 7. HANDLING AND STORAGE**

- Advice on protection against fire and explosion : Avoid dust formation.  
Provide appropriate exhaust ventilation at places where dust is formed.  
Take precautionary measures against static discharges.
- Advice on safe handling : Avoid formation of respirable particles.  
Avoid exposure - obtain special instructions before use.  
For personal protection see section 8.  
Dispose of rinse water in accordance with local and national regulations.  
Smoking, eating and drinking should be prohibited in the application area.
- Conditions for safe storage : Store at room temperature.  
  
Keep container tightly closed and dry.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**

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Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
nicotinic acid	59-67-6	TWA	0.28 mg/m <sup>3</sup>	DSM Internal Limit
3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-yl acetate	7695-91-2	TWA	8 mg/m <sup>3</sup>	DSM Internal Limit
silicon dioxide, amorphous	112926-00-8	TWA	6 mg/m <sup>3</sup>	OSHA P0
		TWA (Dust)	80 mg/m <sup>3</sup> / %SiO <sub>2</sub> (Silica)	OSHA Z-3
		TWA	6 mg/m <sup>3</sup> (Silica)	NIOSH REL
		TWA	5.6 mg/m <sup>3</sup>	DSM Internal Limit
calcium pantothenate, D-form	137-08-6	TWA	5.6 mg/m <sup>3</sup>	DSM Internal Limit
riboflavin	83-88-5	TWA (Total dust)	10 mg/m <sup>3</sup>	DSM Internal Limit
retinyl acetate	127-47-9	TWA	0.155 mg/m <sup>3</sup>	DSM Internal Limit

**Personal protective equipment**

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.

Hand protection  
Remarks : Consider the hazard characteristics of this product and any special workplace conditions when selecting the appropriate type of protective gloves.  
Glove material: for example nitrile rubber

Eye protection : Safety glasses with side-shields

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink.  
When using do not smoke.  
Avoid contact with skin, eyes and clothing.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES****Information on basic physical and chemical properties**

Appearance : powder

Odour : No information available.

Odour Threshold : No information available.

pH : No data available

Melting point/range : Not applicable

Boiling point/boiling range : Not applicable

Flash point : Not applicable

Flammability (solid, gas) : May form combustible dust concentrations in air.

Vapour pressure : Not applicable

Relative vapour density : Not applicable

Density : not determined

Water solubility : not determined

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Partition coefficient: n-octanol/water	: Not applicable
Self-ignition	: No data available
Decomposition temperature	: No data available

**Other information**

Explosive properties	: No data available
Oxidizing properties	: No data available

**SECTION 10. STABILITY AND REACTIVITY**

Reactivity	: No hazards to be specially mentioned.
Chemical stability	: Stable under recommended storage conditions.
Possibility of hazardous reactions	: Dust may form explosive mixture in air.
Conditions to avoid	: Heat
Incompatible materials	: Strong acids and strong bases Strong oxidizing agents
Hazardous decomposition products	: No decomposition if used as directed.

**SECTION 11. TOXICOLOGICAL INFORMATION**

Acute oral toxicity	: Acute toxicity estimate : > 5,000 mg/kg (Calculation method)
Acute dermal toxicity ethoxyquin	: LD50 (Rabbit): > 2,000 mg/kg (OECD Test Guideline 402)
Skin irritation	: May cause skin irritation and/or dermatitis.
Eye irritation	: Dust contact with the eyes can lead to mechanical irritation.
Sensitisation riboflavin	: positive photoallergenic skin reaction (Guinea pig)
Genotoxicity in vitro retinyl acetate	: not mutagenic, not genotoxic (Various test systems)
Carcinogenicity IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
Teratogenicity	
retinyl acetate	: Teratogenic embryotoxic
STOT - single exposure (Acute exposure)	: The substance or mixture is not classified as specific target organ toxicant, single exposure.
Aspiration toxicity	: No aspiration toxicity classification

**Experience with human exposure****Components:****Menadione sodium bisulfite trihydrate:**

Skin contact	: Skin contact may provoke the following symptoms:  Toxic skin damage (especially on damp skin), Skin irritation, Discoloration, Drying of the skin, Blistering
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**retinyl acetate:**

General Information	: RDA (Recommended Daily Allowance) 0.8 mg pure vitamin A (retinol) per day established for men RDA (Recommended Daily Allowance) ca. 0.7 mg pure vitamin A (retinol) per day established for women
Skin contact	: Skin contact may provoke the following symptoms:  Local irritation
Ingestion	: Acute overdose produces the following symptoms:  Headache, Irritability, Tiredness, Drowsiness, Nausea, Vomiting, Signs of increased intracranial pressure, Generalized desquamation of the skin (after ca. 24 hours)

**Further information****Product:**

Remarks	: May cause irritation of respiratory tract.
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**Components:****Menadione sodium bisulfite trihydrate:**

Remarks	: Exposure to this product may cause interaction to any person
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being treated with a coagulation inhibitor (warfarin; coumarin base).

**retinyl acetate:**

Remarks : Danger of cumulative effects.

**SECTION 12. ECOLOGICAL INFORMATION****Toxicity**

## Toxicity to fish

menadione sodium bisulfite, trihydrate : Oncorhynchus mykiss (rainbow trout)  
LC50 (96 h) 0.43 mg/l  
(nominal concentration)  
(OECD Test Guideline 203)

## Toxicity to daphnia and other aquatic invertebrates

ethoxyquin : Crustaceans  
EC50 (48 h) 2 mg/l

menadione sodium bisulfite, trihydrate : Daphnia magna (Water flea)  
EC50 (48 h) 0.73 mg/l  
(nominal concentration)  
(OECD Test Guideline 202)

## Toxicity to algae

riboflavin : Desmodesmus subspicatus (green algae)  
ErC50 (72 h) 21 mg/l  
(OECD Test Guideline 201)

ethoxyquin : Pseudokirchneriella subcapitata (green algae)  
EC50 (72 h) 6.1 mg/l  
(OECD Test Guideline 201)  
: Pseudokirchneriella subcapitata (green algae)  
NOEC (72 h) 2.3 mg/l  
(OECD Test Guideline 201)

menadione sodium bisulfite, trihydrate : EbC50 (72 h) 2 mg/l  
(nominal concentration)

: NOEC (72 h) 0.4 mg/l  
(nominal concentration)

## Toxicity to fish (Chronic toxicity)

3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-yl acetate : Oncorhynchus mykiss (rainbow trout)  
NOEC (28 d) 100 mg/l  
(nominal concentration)  
(OECD Test Guideline 215)

No data is available on the product itself.

**Persistence and degradability**

## Biodegradability

riboflavin : Readily biodegradable.  
84 % (28 d)

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(OECD Test Guideline 301B)

- ethoxyquin : Not readily biodegradable.
- menadione sodium bisulfite, trihydrate : Not readily biodegradable.  
17 % (28 d)  
(OECD Test Guideline 301A)
- retinyl acetate : Not readily biodegradable.  
33 % (28 d)  
(OECD Test Guideline 301B)

No data is available on the product itself.

**Bioaccumulative potential**

- Bioaccumulation : No data available
- Partition coefficient: n-octanol/water : Not applicable

**Mobility in soil**

- Distribution among environmental compartments : No data available

**Other adverse effects****Product:**

- Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances  
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
- Additional ecological information : Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

- Waste from residues : Discharge into the environment must be avoided.  
Do not contaminate ponds, waterways or ditches with chemical or used container.  
Do not dispose of waste into sewer.  
Offer surplus and non-recyclable solutions to a licensed disposal company.  
  
User must determine if any wastes generated exhibit hazardous characteristics as per 40 CFR Part 261 or other national / local legislation.
- Contaminated packaging : Dispose of as unused product.  
Do not re-use empty containers.

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**SECTION 14. TRANSPORT INFORMATION****International Regulations****UNRTDG**

Not regulated as a dangerous good

**IATA-DGR**

Not regulated as a dangerous good

**IMDG-Code**

Not regulated as a dangerous good

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

**National Regulations****49 CFR**

Not regulated as a dangerous good

**Special precautions for user**

Remarks : Not classified as dangerous in the meaning of transport regulations.

**SECTION 15. REGULATORY INFORMATION****CERCLA Reportable Quantity**

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Combustible dust  
Reproductive toxicity  
Serious eye damage or eye irritation**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

**Clean Water Act**

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

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This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

**US State Regulations****Massachusetts Right To Know**

silicon dioxide, amorphous	112926-00-8
quartz (SiO <sub>2</sub> )	14808-60-7

**Pennsylvania Right To Know**

rice hulls / rice flour	Not Assigned
calcium carbonate	471-34-1
nicotinic acid	59-67-6
3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-yl acetate	7695-91-2
silicon dioxide, amorphous	112926-00-8

**Maine Chemicals of High Concern**

Product does not contain any listed chemicals

**Vermont Chemicals of High Concern**

Product does not contain any listed chemicals

**Washington Chemicals of High Concern**

Product does not contain any listed chemicals

**The components of this product are reported in the following inventories:**

TCSI	: Not in compliance with the inventory
TSCA	: Product contains substance(s) not listed on TSCA inventory.
AIIC	: Not in compliance with the inventory
DSL	: This product contains the following components that are not on the Canadian DSL nor NDSL.
	rice hulls / rice flour
	Menadione sodium bisulfite trihydrate
	Maltodextrin
	calcifediol hydrate
ENCS	: Not in compliance with the inventory
ISHL	: Not in compliance with the inventory
KECI	: Not in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: Not in compliance with the inventory
NZIoC	: Not in compliance with the inventory
TECI	: Not in compliance with the inventory

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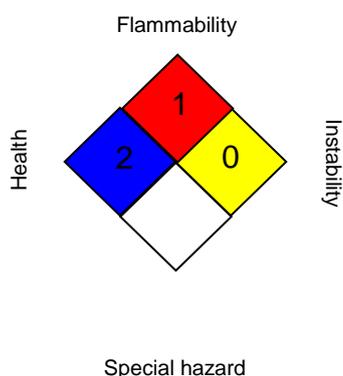
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**TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

**SECTION 16. OTHER INFORMATION****Further information****NFPA 704:****HMIS® IV:**

<b>HEALTH</b>	*	<b>2</b>
<b>FLAMMABILITY</b>		<b>1</b>
<b>PHYSICAL HAZARD</b>		<b>0</b>

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

**Full text of other abbreviations**

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the

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Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative  
ACGIH = American Conference of Governmental Industrial Hygienists. CFR = Code of Federal Regulations. EPA = Environmental Protection Agency. NIOSH = National Institute of Occupational Safety and Health. OSHA = Occupational Safety and Health Administration. STEL = Short term exposure limit. TLV = Threshold Limit Value. TLV-C = Ceiling Limit Value. TWA = Time Weighted Average.

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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