



***** MATERIAL SAFETY DATA SHEET *****

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER	52-5105
PRODUCT NAME	NOVATION® 3300 food starch
Manufacturer	National Starch & Chemical Company P.O. Box 6500, 10 Finderne Avenue Bridgewater, NJ 08807 USA
	EMERGENCY PHONES: MEDICAL: 866-359-5657 (Health & Safety Call Center-24 hours) TRANSPORT: CHEMTREC: 800-424-9300 (24 hours) CHEMTREC International: 703-527-3887 (call collect) Corporate Emergency Phone: 908-685-5100 (24 hours) MSDS Requests/Customer Service: See phone numbers in Section 16

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL FAMILY	Starch		
COMPONENT	CAS NUMBER	CONCENTRATION (% by weight)	
None classified as hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200).			

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Possible physical irritant from dust particles. Potential for dust explosion.
White Powder. Starch odor

EYE	Particulates may scratch eye surfaces and cause mechanical irritation.
SKIN CONTACT	Low order of toxicity.
INHALATION	This product can produce a nuisance dust which should be maintained below a time weighted average of 10 mg/m3.
INGESTION	Low oral toxicity.

4. FIRST-AID MEASURES

EYE	Remove particles by irrigating with eye wash solution or clean water, holding the eyelids apart. If symptoms develop, obtain medical attention.
SKIN CONTACT	Wash skin with soap and water.
INHALATION	Remove to fresh air. Get medical attention if irritation persists.
INGESTION	None required.

5. FIREFIGHTING MEASURES

AUTOIGNITION	Not available
FLASH POINT	Not applicable
EXTINGUISHING MEDIA	Dry Chemical; CO2; Water Fog; Foam
SPECIAL FIREFIGHTING PROCEDURES	No special procedures are required.
FIRE & EXPLOSION HAZARDS	Minimum ignition temperature of dust cloud- approx. 390 C. Minimum explosive concentration- approx. 70 mg/l. Minimum energy to ignite cloud by electrical spark- approx. 0.06 joules.
HAZARDOUS COMBUSTION PRODUCTS	This product does not undergo spontaneous decomposition. Typical combustion products are carbon monoxide, carbon dioxide, nitrogen and water.
LOWER EXPLOSION LIMIT (%)	Not applicable
UPPER EXPLOSION LIMIT (%)	Not applicable

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK PROCEDURES	Normal precautions for "nuisance dust" should be observed. Avoid prolonged inhalation of dust. Sweep up or vacuum up and place in suitable container for disposal.
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For safety and environmental precautions, please review entire Material Safety Data Sheet for necessary information.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE	Ambient.
SENSITIVITY TO STATIC ELECTRICITY	Yes
SENSITIVITY TO MECHANICAL IMPACT	No
OTHER PRECAUTIONS	Use care to minimize dust generation in normal use conditions. Avoid dispersing the powder in the air. Prevent buildup of powder on surfaces.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION REQUIREMENTS	General.
EYE PROTECTION REQUIREMENTS	Safety glasses recommended.
GLOVE REQUIREMENTS	Gloves are not normally required for foreseeable conditions of use.

CLOTHING REQUIREMENTS	Not applicable.
CHANGE/REMOVAL OF CLOTHING	Not normally required.
WASH REQUIREMENTS	Wash before eating, drinking, or using toilet facilities.
RESPIRATOR REQUIREMENTS	NIOSH approved dust mask.

9. PHYSICAL AND CHEMICAL PROPERTIES

PURE SUBSTANCE OR MIXTURE	Pure
PHYSICAL FORM	Powder.
COLOR	White
ODOR	Starch
ODOR THRESHOLD	Not available
MOLECULAR WEIGHT	> 10000
pH IN (1%) SOLUTION	Approximately 6
OXIDIZING PROPERTIES	Not applicable
BOILING POINT	Not applicable
MELTING/FREEZING POINT	Not applicable
SOLUBILITY IN WATER	Insoluble
PARTITION COEFFICIENT (n-octanol/water)	Not applicable
VISCOSITY	Not applicable
SPECIFIC GRAVITY (WATER=1)	1.5
BULK DENSITY	Not available
EVAPORATION RATE	Not applicable
VAPOR PRESSURE (mmHg)	Not applicable
VAPOR DENSITY (air = 1)	Not applicable
VOLATILES	None
VOLATILE ORGANIC COMPOUNDS	Not applicable
AUTOIGNITION	Not available
FLASH POINT	Not applicable

10. STABILITY AND REACTIVITY

STABILITY	Stable
HAZARDOUS DECOMPOSITION PRODUCTS	This product does not undergo spontaneous decomposition. Typical combustion products are carbon monoxide, carbon dioxide, nitrogen and water.

11. TOXICOLOGICAL INFORMATION

ROUTE OF ENTRY	Eye Contact; Skin Contact; Inhalation; Ingestion		
CARCINOGEN	<u>IARC</u>	<u>NTP</u>	<u>OSHA Substance</u>
COMPONENT	<u>(group)</u>		<u>Specific Regulation</u>
There is no evidence that this product poses a carcinogenic risk under normal conditions of	No	No	Not Listed

handling and use.

ACUTE (SHORT TERM) EFFECTS OF EXPOSURE

CHRONIC (LONG TERM) EFFECTS OF EXPOSURE

EFFECTS OF CHRONIC EXPOSURE	This product is considered as being non-toxic. Use of good industrial hygiene practices is recommended.
TARGET ORGANS	Not applicable.

12. ECOLOGICAL INFORMATION

POTENTIAL TO BIOACCUMULATE	Unknown.
AQUATIC TOXICITY	None Established

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS	Disposal should be in accordance with local, state or national legislation.
EMPTY CONTAINER WARNINGS	Empty containers may contain product residue; follow MSDS and label warnings even after they have been emptied.

14. TRANSPORTATION INFORMATION

This section provided for general information only. The shipping description below may not represent requirements for all modes of transportation, packaging, shipping methods or locations outside of the United States.

FOR MORE COMPLETE TRANSPORTATION REGULATORY INFORMATION PLEASE REFER TO THE SHIPPING DOCUMENTS ACCOMPANYING THE SHIPMENT OF THIS PRODUCT.

DOT CLASSIFICATION Not applicable.

The information provided herein may not include the impact of additional regulatory requirements (eg, for materials meeting the definition of a hazardous waste under RCRA, hazardous substances under CERCLA, and/of marine pollutants under CWA or other similar federal, state or local laws) or any associated exceptions or exemptions under regulations applicable to the transport of this material.

15. REGULATORY INFORMATION

USA	
TSCA	This product is manufactured in compliance with all provisions of the Toxic Substances Control Act, 15 U.S.C. 2601 et. seq.
FDA	21CFR182.1.

SARA - Section 313 (Superfund Amendments and Reauthorization Act of 1986 - 40CFR 372)

CAS NUMBER

CONCENTRATION
(% by weight)

Contains no substances at or above the reporting threshold under Section 313.

CALIFORNIA PROPOSITION 65

WARNING: This product contains the following chemicals that are known to the State of California to cause cancer, birth defects or other reproductive harm.

Unless a concentration is specified in Section 2 of the MSDS, the below chemical/s are present in trace amounts.

COMPONENT

CAS NUMBER

None reportable.

16. OTHER INFORMATION

HMIS® Hazard Ratings

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs by OSHA's 29 CFR 1910.1200, we choose to provide them as a service to our customers using HMIS®. These ratings are to be used only with a fully implemented HMIS® program. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

NPCA recommends that employers must determine appropriate PPE for the actual conditions under which this product is used in their workplace. For information on PPE codes, consult the HMIS® Implementation Manual.

When two ratings are provided for Health, the first represents the material 'as supplied', and the second represents the material 'in use'.

* = chronic health hazard

HMIS® is a registered trademark of the National Paint and Coatings Association (NPCA).

Health

1

Flammability

1

Reactivity

0

MSDS DATE

13-November-2006

FOR INFORMATION CONTACT:

For product information, contact:

National Starch & Chemical Company

National Starch Food Innovation

Customer Service: 1-800-859-8569

Technical Service Support: 1-800-743-6343

CHANGES SINCE PREVIOUS ISSUE

Section 1

ADDITIONAL INFORMATION: The information given and the recommendations made herein apply to our product(s) alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guaranty of accuracy is made. It is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.