



Material Safety Data Sheet

MATERIAL NAME: NOVATION® 3300 STARCH

Ingredion México, S.A. de C.V.

Emission Date: October, 2019

Review: 1.0

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Identification

Material Name	NOVATION® 3300 STARCH
Component Name	Tapioca Starch
CAS Number	Confidential
Chemical Identity	Native Starch
Synonyms	Not applicable

1.2 Recommended Use

This product is recommended for food use.

Note: It is important to consult the technical specifications of the product for its proper application.

1.3 Details of the supplier of the SDS

Supplier	Ingredion México, S.A. de C.V. Torre Andares Corporativo Paseo Blvd. Puerta de Hierro #5153, Piso 22 Col. Fracc. Plaza Andares, C.P. 45116, Zapopan, Jal Emergency Phone #: 800-681-9531 (CHEMTREC) +1-703-741-5970 (Global CHEMTREC)
----------	---

2. HAZARDS IDENTIFICATION

2.1 Classification

Generally, it does not represent any risk to health, according to NOM-018-STPS-2015 and GHS, however, it may cause irritation in eyes, skin and respiratory tract.

According to paragraph (d) of 29 CFR 1910.1200, it is considered combustible dust.

2.2 GHS Label Elements

Symbol (s):	None needed according to classification criteria
Signal Word:	WARNING!
Hazard Statement(s):	Combustible dust: Formation of dust cloud of the substance can lead to explosive atmospheres. Eyes: May cause irritation. Skin: May cause irritation. Ingestion: In excess, it may cause gastrointestinal discomfort.
Storage:	Keep containers closed at room temperature and in environments with ventilation.
Disposal:	Dispose of contents/container in accordance with local/regional/national/international regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance:

Component Name	Chemical Identity	CAS	Percent (w/w)
Tapioca Starch	Native Starch	Confidential	100

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eyes: In case of possible irritation. Wash immediately with plenty of water for at least 15 minutes. Occasionally lift the lower and upper eyelids.

Skin: Wash affected area with soap and water. Remove contaminated clothes and shoes with this substance and wash them before using them again.

Inhalation: In case of possible irritation or breathing of large quantities, move to a place with fresh air available. If breathing is difficult, provide autonomous oxygen.

Ingestion: In case of having ingested an excess or if there is irritation. Do not induce vomiting. In case of unconscious person, do not administer anything orally.

Note: In case of persistent discomfort, receive immediate medical attention and, if necessary, special treatment.

4.2 Most important symptoms/effects (acute and delayed)

This product does not present any risk at a general level, however, it could cause effects such as irritation reactions in cases of allergenic response.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing Media

Dry chemical dust extinguisher, foam, water mist, carbon dioxide.

5.2 Special Hazards Arising from the Chemical

Risk of fire or explosion:

The dust of this product may cause explosion and emit toxic gases if ignited by static charges or other source of ignition. The conditions under which this may occur are: concentration in suspension with air, ignition point, particle size and dust moisture. Avoid using this product with flames, electric arcs, static electricity and / or welding. Make sure that the handling equipment is grounded. Always keep the area clean, avoiding the formation of dust films.

5.3 Special Protective Equipment and Precautions for Firefighters

Use a self-contained breathing apparatus (SCBA) equipped with full face mask and operated under pressure as required (or in another positive pressure mode), with suitable protective clothing. Evacuate the area and fight fire from a safe distance.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Use a simple mask to protect dust, gloves and eye protection equipment. Contain the material in appropriate containers or containers. Eliminate possible sources of ignition.

6.2 Environment Precautions

Absorb the product with inert material. Collect the material and place it in closed containers for later disposal. Avoid direct discharge to drainage channels.

6.3 Methods and Materials for Containment and Cleaning Up

Lift and dispose carefully without creating dust. Sweep / vacuum and dispose in a suitable container. Clean surfaces with water to remove residual contamination.

Dust collectors must be equipped with safety devices that prevent or reduce the risk of explosion.

7. HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Use personal protective equipment for handling (dust mask, gloves and lenses). Use with adequate ventilation. Avoid dust formation. Keep containers closed when not in use. Avoid any possible source of ignition. It is recommended to wash your hands before and after handling the product.

7.2 Conditions for Safe Storage, Including any Incompatibilities

Fine dust with ability to form a cloud, which presents a danger of explosion. Keep away from sources of ignition. Store preferably in a cool and dry place, with adequate ventilation.

Keep away from incompatible materials such as: oxidizing chemicals, acids, iodine and alkalis. Avoid the formation of explosive atmospheres.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Component Exposure Limits

NIOSH REL	TWA: 10 mg/m ³ (total)
	TWA: 5 mg/m ³ (inhalable)
OSHA PEL	TWA: 15 mg/m ³ (total)
	TWA: 5 mg/m ³ (inhalable)
NOM-010-STPS-2014	VLE-PPT: 10 mg/m ³ (total)

Acronyms

NIOSH REL:	NIOSH.- National Institute for Occupational Safety and Health. REL.- Recommended Exposure Limits.
OSHA PEL:	OSHA.- Occupational Safety and Health Administration. PEL.- Permissible Exposure Limits.
TWA:	Time-Weighted Average. Average value of exposure over the course of an 8 hour work shift.
VLE-PPT:	Time-weighted average exposure limit value of the chemical substance established in Appendix I of NOM-010-STPS-2014.

8.2 Appropriate controls

Always provide effective general ventilation and, when necessary, ventilation with local suction, to keep dust away from workers and prevent routine inhalation. Ventilation should be adequate to maintain the atmosphere of the workplace environment below the exposure limits indicated in the MSDS.

8.3 Individual Protection Measures, such as Personal Protective Equipment

Skin/eye/face Protection: Use nitrile or rubber protective gloves. Use proper procedures in the laboratory / work area, including personal protective equipment: lab coat, safety glasses and boots, and protective gloves.

Respiratory Protection: In case of exceeding the exposure limits, provide preferably mechanical local ventilation. Use dust mask.

Other Recommendations: Eye wash modules and safety showers in the work area are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Fine dust
Physical State	Solid
Color	White, slightly yellow
Odor	Typical
Molecular Weight	Not available
Odor Threshold	Not available
pH (20% w/w)	5.0 – 6.5
Melting Point	Not available
Boiling Point and its Range	Not available
Flammability Point	300-400°C
Evaporation Rate	Not available
Flammability	Not available
Flammability/explosive limits	Not available
Vapor Pressure	Not available
Vapor Density	Not available
Relative Density	Not available
Water Solubility	Insoluble
Partition coefficient	Not applicable
Autoignition	Not available
Descomposition	Not available
Viscosity	400 – 900 MVU
Moisture	0.0 – 15.0%

Material Dust Explosivity Parameters:

Minimum explosive concentration (CME)	70 g/m ³
Minimum temperature of inflammation as layer (TMlc)	≥390 °C
Minimum temperature of inflammation as cloud (TMlc)	390 °C
Minimum energy of inflammation (EMI)	≥0.06 J

10. STABILITY AND REACTIVITY

10.1 Reactivity

No known hazardous reactions.

10.2 Chemical Stability

The product is stable under storage at normal ambient temperatures.

10.3 Possibility of Hazardous Reactions

None.

10.4 Conditions to Avoid

Avoid generation of dust, confinement, oxygen source and source of ignition.

10.5 Incompatible Materials

Oxidizing agents, acids, iodine and fuels.

10.6 Hazardous decomposition products

The oxidation of starch may produce oxalic acid and carbon oxides.

11. TOXICOLOGICAL INFORMATION

11.1 Possible exposure routes

Eyes: May cause irritation.

Skin: May cause irritation.

Inhalation: May cause irritation.

Ingestion: Ingestion of large quantities can produce adverse health effects.

11.2 Component Analysis LD₅₀

The components of this material have been reviewed in various sources and no selected endpoints have been identified.

11.3 Acute toxicity

It is not considered toxic, although allergic reactions may occur.

11.4 Sensitization/Irritation/Corrosivity Data

Not available.

11.5 Reproductive Toxicity/Carcinogenicity/Mutagenicity

Not classified (in view of the available data, the classification criteria are not met).

11.6 Specific Target Organ Toxicity (STOT)

Not classified (in view of the available data, the classification criteria are not met).

11.7 Aspiration Hazard

No data available.

11.8 Other Toxicity Information

12. ECOLOGICAL INFORMATION

Ecotoxicity	Avoid uncontrolled release to the environment
Persistence and degradability	Biodegradable
Bioaccumulation potential	Unclassified
Mobility in soil	Unclassified
Other adverse effects	No additional information

13. DISPOSAL CONSIDERATIONS

13.1 Waste

Dispose of unused content, in accordance with national and local regulations.

13.2 Product Containers

Discard the unused container, in accordance with national and local regulations. Be sure to use duly authorized waste management companies, if applicable.

14. TRANSPORT INFORMATION

ONU Number	Not applicable
Official transportation designation of the United Nations	Not regulated
Class (es) related to transport	Not applicable
Packing group if applicable	Not applicable
Environmental risks	Not applicable
Special precautions for the user	Not applicable
Transport in bulk with arrangements to Annex II of MARPOL 73/78 and the IBC Code.	Not applicable

15. REGULATORY INFORMATION

TSCA (USA)	This product is manufactured in compliance with all the provisions of the Toxic Substances Control Law 15 USC 2.601 et. H.H.
FDA	21 CFR 182.70
Canada	This product is numbered in the DSL list of Canada
Regulation 1005/2009 / EC on substances that deplete the ozone layer	Not regulated
Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants amending Directive 79/117 / EEC	Not regulated
Regulation (EC) No 689/2008 on the export and import of dangerous chemicals	Not regulated

16. OTHER INFORMATION**Symbols / Abbreviations**

GHS	Globally Harmonized System of Classification and Labelling of Chemicals.
CAS	Numerical identifier assigned by the Chemical Abstracts Service (CAS) to every chemical substance described in the open scientific literature.
LD₅₀	Median lethal dose. Is the amount of a given material complete at one time, which causes the death of 50% (one half) of a group of test animals.
FDA	Food and Drug Administration
DSL	Domestic Substances List
TSCA	Toxic Substances Control Act
CFR	Code of Federal Regulations
MSDS	Material Safety Data Sheet

The information provided has been collected from various sources, which Ingredion and its affiliates consider reliable; however, Ingredion and its affiliates provide no guarantee regarding this information. No responsibility is assumed for any damage related to the product; each user must determine and assume the possible risks in the application of the product and its specific use. Point 1.2 should be considered for the destination of the product together with the additional technical specifications, this in order to determine the proper use of the product.

The United Nations Convention on Contracts for the International Trading of merchandise will not apply to the sales of products by Ingredion Incorporated and the Ingredion group. The INGREDION brand and logo are registered trademarks of the Ingredion group company. All rights are reserved. Rights registered © 2019.