

## 1. Identification of the substance or mixture and of the supplier

### GHS product identifier:

Stock Number: 06820323  
Product Name: N-DULGE(TM) 320  
food starch

### Other means of identification:

Chemical family: Modified starch

### Recommendations and restrictions on use of the substance or mixture:

Recommended use: Food products  
Restrictions on use: Not Available

### Supplier's details (i.e. name, address, phone number(s)):

Ingredion (Thailand) Co., Ltd  
40/14 Moo 12, Bangna-Trad Road,  
Bangplee, Samutprakarn 10540  
Thailand  
Tel: +662-725-0200 (business hours)

### Emergency phone number:

CHEMTREC - Emergency Telephone (Medical & Transport Incident With Product- 7Days/24 Hours)  
The global (outside US) number: +1 703-741-5970  
Australia: +(61)-290372994  
China: 4001-204937  
India: 000-800-100-7141\*  
Indonesia: 001-803-017-9114\*  
Japan: +(81)-3-4520-9637  
Malaysia: +(60)-392125794  
New Zealand: +(64)-98010034  
Philippines: +(63) 2-395-3308, 1-800-1-322-0553\*  
Singapore: +(65)-31638374, 800-101-2201\*  
South Korea: +(82) 070-7686-0086, 080-880-0454\*  
Taiwan: +886-2-7741-4207\*, 00801-49-1821\*  
Thailand: 1800014808\*  
Vietnam: +(84)-444581938  
\* Phone numbers for countries marked with an asterisk must be dialed within the country  
SDS Requests and general information, please contact Local Customer Service: See phone numbers in Section 16

## 2. Hazards identification

Classification of the chemical in accordance with system of Hazardous Substances B.E. 2555:

**GHS Hazard Symbols:**

No hazard symbols required

**GHS Classification of the substance or mixture, and national or regional information:**

Hazardous to the aquatic environment - Acute Category 3

**Signal Word:**

No Signal Word needed.

**Hazard Statements:**

Harmful to aquatic life.

**Precautionary Statements:**

**Prevention:**

Avoid release to the environment.

**Disposal:**

Dispose of contents/container to a suitable disposal site in accordance with local/national/international regulations.

**Other hazards which do not result in GHS classification:**

None known.

### 3. Composition/information on ingredients

**Substance:**

Not applicable

**Mixture:**

Chemical Name	CAS Number	Concentration (% by weight)
No hazardous components.		

### 4. First-aid measures

**Description of necessary first-aid measures divided by relevant routes of exposure i.e. inhalation, skin, eye, and ingestion:**

Inhalation:

Remove to fresh air. Get medical attention if irritation persists.

Eye Contact:

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.

Ingestion:

None required.

**Most important symptoms/effects, acute and delayed:**

Possible physical irritant from dust particles. Potential for dust explosion.

**Indication of immediate medical attention and special treatment needed, if necessary:**

No further first aid information is available.

## 5. Fire-fighting measures

**Suitable (and unsuitable) extinguishing media:**

Suitable extinguishing media: Dry Chemical, CO2, Water Fog, Foam

Unsuitable extinguishing media: None known.

**Specific hazards arising from the chemical e.g. hazardous combustion products that form when the substance or mixture burns:**

Minimum ignition temperature of dust cloud- approx. 390 C. Minimum explosive concentration- approx. 80 mg/l. Minimum energy to ignite cloud by electrical spark- approx. 0.10 joules.

Hazardous combustion products:

This product does not undergo spontaneous decomposition. Typical combustion products are carbon monoxide, carbon dioxide, nitrogen and water.

**Special protective equipment and precautions for fire-fighters:**

Do not enter fire area without proper protection including self- contained breathing apparatus and full protective equipment.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures:**

Use personal protective equipment as required.

**Environmental precautions:**

Not available

**Methods and materials for containment and cleaning up:**

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.

## 7. Handling and storage

**Precaution for safe handling and storage:**

As with all chemicals, good industrial hygiene practices should be followed when handling this material.

**Conditions for safe storage, including any incompatibilities:**

Safe storage conditions:

Keep container closed when not in use.

Static Sensitivity:

Yes

Other precautions:

Avoid dispersing the powder in the air. Prevent buildup of powder on surfaces.

Materials to Avoid/Chemical Incompatibility:

None known

## 8. Exposure controls/personal protection

Control parameters e.g. occupational exposure limit values, biological limit values:

Chemical Name	Thailand - Occupational Exposure Limits - TWA's	Thailand - Occupational Exposure Limits - STEL's	Thailand - Occupational Exposure Limits - CEIL's
No data available			

This product can produce a nuisance dust which should be maintained below a time weighted average of 10 mg/m<sup>3</sup>.

**Appropriate engineering controls:** General.

**Individual protection measures e.g. personal protective equipment:**

**Respiratory Protection:** NIOSH approved dust mask.

**Eye protection:** Safety glasses recommended.

**Skin protection:** Skin protection may be required depending on product temperature.

**Gloves:** Gloves are not normally required for foreseeable conditions of use.

**Other protective equipment:** Not normally required. Not applicable.

**General hygiene conditions:** Wash before eating, drinking, or using toilet facilities.

## 9. Physical and chemical properties

**Appearance (physical state, color etc.):**

Pure Substance or Mixture: Pure

Physical State: Powder

Color: White

**Odor:** Starch

**Odor Threshold:** Not available

**pH:** Not available

**pH in (1%) Solution:** Approximately 6

**Melting point/freezing point:**

Melting Point: Not available

Freezing point: Not available

**Initial boiling point and boiling range:** Not available

**Flash Point:** Not applicable

**Evaporation Rate:** Not applicable

**Flammability (solid, gas):** No

**Upper/lower flammability or explosive limits:**

Upper flammability or explosive limits: Not available

Lower flammability or explosive limits: Not available

<b>Vapor pressure:</b>	Not available
<b>Vapor density:</b>	Not available
<b>Relative density:</b>	1.5
<b>Solubility:</b>	Insoluble
<b>Partition coefficient: n-octanol/water:</b>	Not available
<b>Heat of Decomposition:</b>	Not available
<b>Auto-ignition temperature:</b>	Not available
<b>Decomposition temperature:</b>	Not available
<b>Viscosity:</b>	Not applicable
<b>Volatiles:</b>	None
<b>Volatile Organic Chemicals:</b>	Not applicable

## 10. Stability and reactivity

<b>Reactivity:</b>	Not expected to be reactive
<b>Chemical stability:</b>	Stable
<b>Possibility of hazardous reactions:</b>	Hazardous polymerization will not occur.
<b>Conditions to avoid:</b>	None known
<b>Incompatible materials:</b>	None known
<b>Hazardous decomposition products:</b>	This product does not undergo spontaneous decomposition. Typical combustion products are carbon monoxide, carbon dioxide, nitrogen and water.

## 11. Toxicological information

### Description of the various toxicological (health) effects, and the available data used to identify those effects:

<b>Information of the likely routes of exposure:</b>	Eye Contact, Skin Contact, Inhalation, Ingestion
<b>Target Organs Potentially Affected By Exposure:</b>	Not applicable.
<b>Symptoms related to physical, chemical and toxicological characteristics:</b>	No data available
<b>Toxic Effects:</b>	This product is considered as being non-toxic. Use of good industrial hygiene practices is recommended.
<b>Delayed and immediate effects and also chronic effects from short- and long-term exposure:</b>	
<b>Acute toxicity:</b>	
Ingestion Toxicity:	Based on available data, the GHS classification criteria are not met.
Acute toxicity - Dermal:	Based on available data, the GHS classification criteria are not met.

<b>Inhalation Toxicity:</b>	Based on available data, the GHS classification criteria are not met.
<b>Skin corrosion/irritation:</b>	Wash skin with soap and water. Unlikely to cause harmful effects under recommended conditions of handling and use.
<b>Serious eye damage/irritation:</b>	Based on available data, the GHS classification criteria are not met.
<b>Respiratory sensitisation:</b>	Based on available data, the GHS classification criteria are not met.
<b>Skin sensitisation:</b>	Based on available data, the GHS classification criteria are not met.
<b>Germ cell mutagenicity:</b>	Based on available data, the GHS classification criteria are not met.
<b>Reproductive Toxicity:</b>	Based on available data, the GHS classification criteria are not met.
<b>Carcinogenicity:</b>	No.
<b>Specific Target Organ Toxicity (STOT)-single exposure:</b>	Based on available data, the GHS classification criteria are not met.
<b>Specific Target Organ Toxicity (STOT) -repeated exposure:</b>	Based on available data, the GHS classification criteria are not met.
<b>Aspiration hazard:</b>	Based on available data, the GHS classification criteria are not met.

**Numerical measures of toxicity (such as acute toxicity estimates):**

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
There is no known toxicity data available for the components or the product.			

**12. Ecological information**

**Toxicity (aquatic and terrestrial):** No information available.

**Ecological Toxicity Data:**

Chemical Name	CAS Number	Aquatic LC50 Fish	Aquatic ERC50 Algae	Aquatic EC50 Crustacea
No data available				

<b>Persistence and degradability:</b>	No data available
<b>Bioaccumulative potential:</b>	No data available
<b>Mobility in soil:</b>	Unknown
<b>Other adverse effects:</b>	None known.

**13. Disposal considerations**

**Description on waste residue and** Disposal should be in accordance with local, state or national legislation.

safety transfer method, including appropriate disposal methods of waste residues and contaminated packaging:

## 14. Transport information

**UN Transport classification:** Not regulated  
**UN Number:** Not applicable  
**Proper shipping name or technical name:** Not applicable  
**Transport hazard class:** Not applicable  
**Packing group:** Not applicable  
**Toxic Inhalation Hazard Zone:** No data available

**Environmental hazards (e.g., Marine pollutant (Yes/No)):** No data available

**Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** No data available

**Special precautions for users, which a user needs to be aware of or needs to comply with in connection with transport either inside or outside the business site:** Consult IMO regulations before transporting in bulk by ocean.

## 15. Regulatory information

### Safety, health and environmental regulations:

**TSCA Status:** This product is manufactured in compliance with all provisions of the Toxic Substances Control Act, 15 U.S.C. 2601 et. seq.

**FDA** 21CFR172.892

### Thailand - Toxic Chemical Substance List

Chemical Name	CAS Number	Thailand - Toxic Chemical Substance List
No data available		

### Thailand - Priority Management Chemical List

Chemical Name	CAS Number	Thailand - Priority Management Chemical List
No data available		

### Thailand - Thailand Explosive Substance and Precursors

Chemical Name	CAS Number	Thailand - Thailand Explosive Substance and Precursors
No data available		

**Montreal Protocol on Substances that Deplete the Ozone Layer,**

Chemical Name	CAS Number	Montreal Protocol on Substances that Deplete the Ozone Layer,
No data available		

**Stockholm Convention on Persistent Organic Pollutants**

Chemical Name	CAS Number	Stockholm Convention on Persistent Organic Pollutants
No data available		

**Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.**

Chemical Name	CAS Number	Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.
No data available		

**Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.**

Chemical Name	CAS Number	Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.
No data available		

**16. Other information, including date of preparation or last revision.**

**Revision Date:** 08-06-2024

**Supersedes:** 06-04-2024

**Revision Number:** 9

**Reason for revision:** New

**For Information Contact**

Thailand:  
 Ingredion (Thailand) Co., Ltd  
 Customer Service: +66-2-725-0200

**Disclaimer:**

The attached data has been compiled from sources which Ingredion Incorporated and the Ingredion group of





# Safety Data Sheet

N-DULGE(TM) 320

---

companies, believe to be dependable and, to our knowledge and belief is accurate. However, Ingredion Incorporated and the Ingredion group of companies cannot make any warranty or representation respecting the accuracy or completeness of the data. We assume no responsibility for any liability or damages relating thereto, or for advising you regarding the protection of your employees, customers, or others. You should make your own tests to determine the applicability of such information to, or the suitability of any products for your specific use.

Ingredion Incorporated and the Ingredion group of companies expressly disclaims all warranties, expressed or implied, including but not limited to, warranties of merchantability, accuracy, fitness for use or for a particular purpose, and noninfringement. The United Nations Convention on Contracts for the International Sale of Goods shall not apply to sales of products by Ingredion Incorporated and the Ingredion group of companies. The INGREDION mark and logo are trademarks of the Ingredion group of companies.