



## SAFETY DATA SHEET

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: N-DULGE(TM) 320  
food starch

RECOMMENDED USE: Food products

**SUPPLIER**

Ingredion Singapore Pte Ltd.  
21 Biopolis Road  
#05-21/27 Nucleos  
Singapore 138567  
Tel:+65 6872 6006 (business hours)

**MANUFACTURER**

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

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

Hong Kong: 800-968-793\*

India: 000-800-100-7141\*

Indonesia: 001-803-017-9114\*

Japan: +(81)-3-4520-9637

Malaysia: +(60)-392125794, 1-800-815-308\*

New Zealand: +(64)-98010034

Philippines: +(63) 2-395-3308, 1-800-1-116-1020\*

Singapore: +(65)-31581349, 800-101-2201\*

South Korea: +(82) 070-7686-0086, 00-308-13-2549\*

Taiwan: +886-2-7741-4207\*, 00801-14-8954\*

Thailand: 001-800-13-203-9987\*

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

|                                |                                    |
|--------------------------------|------------------------------------|
| <b>GHS Classification:</b>     | Not classified by GHS criteria     |
| <b>GHS Signal Word:</b>        | No signal word needed.             |
| <b>GHS Hazards:</b>            | No Hazard Statement needed.        |
| <b>GHS Safety Precautions:</b> | No Precautionary Statement needed. |

**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.   |

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

CHEMICAL FAMILY                      Modified Starch

| COMPONENT | CAS NUMBER | CONCENTRATION<br>(% by weight) |
|-----------|------------|--------------------------------|
|-----------|------------|--------------------------------|

Not classified as hazardous.

**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 available   |
| 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. 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.   |
| LOWER EXPLOSION LIMIT (%)       | No data available   |
| UPPER EXPLOSION LIMIT (%)       | No data available   |

**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.

For safety and environmental precautions, please review entire Material Safety Data Sheet for necessary information.

**7. HANDLING AND STORAGE**

|                     |   |
|---------------------|---|
| STORAGE TEMPERATURE | Ambient.  |
| HANDLING/STORAGE    | Normal precautions for handling chemicals are applicable. |

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|                                   |  |
|-----------------------------------|--|
| SENSITIVITY TO STATIC ELECTRICITY | Yes  |
| SPECIAL SENSITIVITY               | Not available  |
| SENSITIVITY TO MECHANICAL IMPACT  | No   |
| OTHER PRECAUTIONS                 | Use care to minimize dust generation in normal use conditions.<br>Avoid dispersing the powder in the air. Prevent buildup of powder on surfaces. |

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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

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No data available

|                             |   |
|-----------------------------|---|
| 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.   |

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

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

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**10. STABILITY AND REACTIVITY**

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|                                  |   |
|----------------------------------|---|
| STABILITY                        | Stable  |
| STABILITY DETAIL                 | Material is stable under normal temperatures and pressures.   |
| MATERIALS TO AVOID               | None known  |
| CONDITIONS TO AVOID              | None known  |
| HAZARDOUS DECOMPOSITION PRODUCTS | This product does not undergo spontaneous decomposition.<br>Typical combustion products are carbon monoxide, carbon |

|  |   |
|--|---|
| HAZARDOUS POLYMERIZATION<br>CONDITIONS<br>REACTIVITY | dioxide, nitrogen and water.<br>Hazardous polymerization will not occur.<br><br>Not expected to be reactive |
|--|---|

**11. TOXICOLOGICAL INFORMATION**

|                |  |
|----------------|--|
| ROUTE OF ENTRY | Eye Contact; Skin Contact; Inhalation; Ingestion |
|----------------|--|

|                   |                        |                       |   |
|-------------------|------------------------|-----------------------|---|
| <b>CARCINOGEN</b> | <u>IARC</u><br>(group) | <u>NTP Carcinogen</u> | <u>OSHA Substance</u><br><u>Specific Regulation</u> |
|-------------------|------------------------|-----------------------|---|

COMPONENT  
There is no evidence that this product poses a carcinogenic risk under normal conditions of handling and use.

**PRODUCT TOXICOLOGY**  
PRODUCT INFORMATION

No data available

**ACUTE (SHORT TERM) EFFECTS OF EXPOSURE**

|                           |   |
|---------------------------|---|
| EFFECTS OF ACUTE EXPOSURE | Unlikely to cause harmful effects under recommended conditions of handling and use. |
|---------------------------|---|

**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 EFFECT ON ENVIRONMENT | No data available         |
| MOBILITY                        | Unknown.                  |
| PERSISTENCE AND DEGRADABILITY   | No data available         |
| POTENTIAL TO BIOACCUMULATE      | Unknown.                  |
| ECOTOXICITY                     | No information available. |
| 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 SDS 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.

|                           |                |
|---------------------------|----------------|
| <b>DOT CLASSIFICATION</b> | Not regulated  |
| PROPER SHIPPING NAME      | Not Applicable |
| HAZARD CLASS              | Not Applicable |
| U.N. NUMBER               | Not applicable |
| PACKING GROUP             | Not Applicable |
| *****                     | *****          |

|                                 |                |
|---------------------------------|----------------|
| <b>ICAO/IATA CLASSIFICATION</b> | Not regulated  |
| PROPER SHIPPING NAME            | Not Applicable |
| HAZARD CLASS                    | Not Applicable |
| U.N. NUMBER                     | Not Applicable |
| PACKING GROUP                   | Not Applicable |

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|                               |                |
|-------------------------------|----------------|
| <b>IMO/MDG CLASSIFICATION</b> | Not regulated  |
| PROPER SHIPPING NAME          | Not Applicable |
| HAZARD CLASS                  | Not Applicable |
| U.N. NUMBER                   | Not Applicable |
| PACKING GROUP                 | Not Applicable |

|                       |                                    |
|-----------------------|------------------------------------|
| FLASH POINT           | Not available                      |
| MARINE POLLUTANT NAME | Not available                      |
| IMO MFAG              | See Tables 1-15 based on symptoms. |

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**

|      |   |
|------|---|
| TSCA | 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.   |

**16. OTHER INFORMATION**

|                         |  |
|-------------------------|--|
| ISSUE DATE:             | 26-May-2020  |
| FOR INFORMATION CONTACT | Singapore:<br>Ingredion Singapore Pte Ltd<br>Customer Service: +65 6872 6006 |

|                                |                                    |
|--------------------------------|------------------------------------|
| <b>GHS Safety Precautions:</b> | No Precautionary Statement needed. |
|--------------------------------|------------------------------------|

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.