

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier	N-Dulge™ C1
1.2. Relevant identified uses of the substance or mixture and uses advised against	food starch
1.3. Details of the supplier of the safety data sheet	The relevant Ingredion EMEA Company which invoices for the Product – please see Section 16
E-Mail Address	elizabeth.fawkes@ingredion.com
1.4. Emergency telephone number	EMERGENCY TELEPHONE: +32 3 575 5555

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]	This product is not classified as hazardous according to (EC) No. 1272/2008
---	---

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP]

Hazard Statements	Not Applicable
Supplemental Hazard information (EU)	No Supplemental Hazard Information available

2.3. Other hazards

DUST	Nuisance dust with a possibility of dust explosion.
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/m ³ .
INGESTION	No hazard in normal industrial use.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not Applicable

3.2. Mixtures

Chemical Name	Percentage (%)	CAS number	Reach Registration No.	Classified in accordance with (EC) No. 1272/2008



SAFETY DATA SHEET

N-Dulge™ CI

06-06-2016

This product is not classified as hazardous				
---	--	--	--	--

See Section 16 for full text of hazard statements.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Remove patient from exposure.
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.
Self-protection of the first aider	Not available

4.2. Most important symptoms and effects, both acute and delayed

Symptom	Not Applicable
----------------	----------------

4.3. Indication of any immediate medical attention and special treatment needed

Notes to the physician	No further first aid information is available.
-------------------------------	--

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	CO2 Dry Chemical Foam Water Fog
Unsuitable Extinguishing Media	None known.

5.2. Special hazards arising from the substance or mixture

Fire and/or 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	Thermal decomposition could produce carbon monoxide, carbon dioxide, and unidentified organic compounds.

5.3. Advice for firefighters

Fire Fighting Methods and Protection	No special procedures are required.
--------------------------------------	-------------------------------------

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Non-emergency personnel should be kept clear of the area.
-----------------------------	---



SAFETY DATA SHEET

N-Dulge™ CI

06-06-2016

For emergency responders Use personal protective equipment as required.

6.2. Environmental precautions

Not available

6.3. Methods and material 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.

6.4. Reference to other sections

See Section 8 for appropriate personal protective equipment. See Sections 2 and 7 for additional information on hazards and precautionary measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Store in a clean, dry, well ventilated warehouse away from odorous materials.

7.2. Conditions for safe storage, including any incompatibilities

Ambient. Store in a clean, dry, well ventilated warehouse away from odorous materials.

Special Sensitivity:

No special sensitivity.

Sensitivity to Mechanical

No

Impact:

Sensitivity to Static

Yes

Electricity:

Other precautions:

Use care to minimise dust generation in normal use conditions. Avoid dispersing the powder in the air. Prevent build-up of powder on surfaces.

Materials to avoid:

None known.

7.3. Specific end use(s)

food starch

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits (TWA)

COMPONENT	EXPOSURE LIMITS	EC INDICATIVE OCCUPATIONAL EXPOSURE LIMIT VALUES
Starch	10 mg/m ³ TWA (total inhalable) 4 mg/m ³ TWA (respirable)	Not available

8.2. Exposure controls

General.

Appropriate Engineering controls

Personal protective equipment

- Eye protection:

Wear safety glasses. Personal eye protection should conform to

	EN 166.
- Skin protection:	
- Hand protection:	Gloves are recommended due to possible irritation. Gloves should conform to EN 374.
Other skin protection:	Uniforms, coveralls, or a lab coat should be worn.
Respiratory Protection:	Use approved dust mask.
	Dust masks should conform to EN 149.
Other Protective Equipment:	Wash before eating, drinking, or using toilet facilities.
General Hygiene Conditions:	Not available
- Thermal hazards	Not available
Environmental exposure controls	Not available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Colour	white
Odour	Starch odour.
Odour threshold	Not available
pH	Not available
Melting point / Freezing point (°C)	Not available
Initial boiling point and boiling range	Not available
Flash point	Not applicable
Evaporation Rate	Not applicable
Flammability (solid, gas)	No
Upper Flammable/Explosive Limit, % in air	Not applicable
Lower Flammable/Explosive Limit, % in air	Not applicable
Vapour pressure at 50°C (kPa)	Not applicable
Vapour density	Not applicable
Relative Density	Not available
Relative Density at 20° C	No data available
Solubility(ies)	Insoluble
Partition coefficient: n-octanol/water	Not applicable
Auto-ignition temperature	Not available
Decomposition temperature	Not determined.
Viscosity	Not applicable

Explosive Properties Not applicable
Oxidising Properties Not applicable

9.2. Other information

Solids Not available
Volatiles None
Volatile Organic Compounds Not available

SECTION 10: Stability and reactivity

10.1. Reactivity Not expected to be reactive
10.2. Chemical stability Material is stable under normal temperatures and pressures.
10.3. Possibility of hazardous reactions Hazardous polymerization will not occur.
10.4. Conditions to avoid None known.
10.5. Incompatible materials None known.
10.6. Hazardous decomposition products This product does not undergo spontaneous decomposition. Typical combustion products are carbon monoxide, carbon dioxide, nitrogen and water.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity;
Not available

Skin corrosion/irritation;
Low order of toxicity.
Based on available data, the GHS classification criteria are not met.

Serious eye damage/irritation;
Particulates may scratch eye surfaces and cause mechanical irritation.
Based on available data, the GHS classification criteria are not met.

Respiratory or skin sensitization;
Not available

Germ cell mutagenicity;
Not available

Carcinogenicity;
Not available

Reproductive toxicity;
Not available



SAFETY DATA SHEET

N-Dulge™ CI

06-06-2016

STOT-single exposure;
Not available

STOT-repeated exposure;
Not available

Aspiration hazard;
Not available

SECTION 12: Ecological information

12.1. Toxicity	Low, but has a BOD contribution.
12.2. Persistence and degradability	Readily biodegradable.
12.3. Bioaccumulative potential	Unknown.
12.4. Mobility in soil	Unknown.
12.5. Results of PBT and vPvB assessment	Not available
12.6. Other adverse effects	Contributes to effluent BOD.
12.7. Additional Information	Not available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste Disposal Methods:	Waste disposal should be in accordance with existing Community, National and local regulations.
Empty Container Warnings:	Not needed.

SECTION 14: Transport information

IATA CLASSIFICATION	Not classified as dangerous.
14.1. UN number	Not Applicable
14.2. UN proper shipping name	Not Applicable
14.3. Transport hazard class(es)	Not Applicable
14.4. Packing group	Not Applicable

IMDG CLASSIFICATION Not classified as dangerous.

14.1. UN number Not Applicable

14.2. UN proper shipping name Not Applicable

14.3. Transport hazard class(es) Not Applicable

14.4. Packing group Not Applicable

ADR/RID Not classified as dangerous.

14.1. UN number Not Applicable

14.2. UN proper shipping name Not Applicable

14.3. Transport hazard class(es) Not Applicable

14.4. Packing group Not Applicable

14.5. Environmental hazards Not available

14.6. Special precautions for user Not available

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not available

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EINECS Unknown.

SPECIFIC PROVISIONS Not available

15.2. Chemical safety assessment No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: Other information

Abbreviations and acronyms No data available

Key literature references and sources for data No data available

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Not available	Not available



SAFETY DATA SHEET

N-Dulge™ CI

06-06-2016

Section 3 H Phrase(s) Not available
For regulatory information, Contact: elizabeth.fawkes@ingredion.com
EMERGENCY TELEPHONE: +32 3 575 5555

Products are manufactured in accordance with EU Law, unless expressly agreed to otherwise, in writing, by the relevant Ingredion company referred to below. The information on the safety data sheets is provided for the purposes of a general health and safety assessment by an industrial user (the "User"). Reference should also be made by the User, to any other specific relevant local or national health, safety, environmental or other applicable legislation, including any import or export regulations relevant to the country in which the User operates - the User will need to check this information for itself. The information provided by the relevant Ingredion company referred to below, does not constitute indication of suitability for specific uses, nor is it legal advice given to the User.

This document is issued on behalf of the Ingredion EMEA Company which is the Supplier invoicing for the Product. The respective details of each of the relevant Supplier companies are as follows:

Ingredion UK Limited; Ingredion House, Manchester Green, 333 Styal Road; Manchester M22 5LW; England; P: +44 (0) 161 435 3200; F: +44 (0) 161 435 3300; Registered in England No. 07315745

Ingredion Germany GmbH; Grüner Deich 110; 20097 Hamburg; Germany; P: +49 (0) 40 23 91 50; F: +49 (0) 40 23 91 51 70; Amtsgericht Hamburg HRB 105432

Ingredion South Africa (Pty) Ltd; Infinity Office Park, Suite 6, Block C, 2 Robin Close, Meyersdal, 1448, Gauteng; RSA; P: +27 (0) 11 867 9260; F: +27 (0) 11 867 9271; Registration number 2010/013219/07

Ingredion Middle East Branch; Office 03B, Dubai, Dubai Biotechnology and Research Park, Dubai, United Arab Emirates; P: +971 44 53 4288

Rafhan Maize Products Co. Ltd. Rakh Canal East Road PO Box 62, Faisalabad 38060, Punjab, PAKISTAN T: 92-41-854-0121 F: 92-41-871-1016