

SAFETY DATA SHEET KLEPTOSE® Linecaps 17

SECTION 1 : Identification

1.1 Product identifier:

Product name: KLEPTOSE® Linecaps 17 - MALTODEXTRIN

Synonyms: Pea Maltodextrin

Chemical name: Maltodextrin

CAS-No.: 9050-36-6

EC No.: 232-940-4

1.2 Relevant identified uses of the substance or mixture and uses advised against:

| Identified uses: | Uses advised against: |
|---------------------------------------|-----------------------|
| Pharmaceuticals.; Food.Encapsulation. | No data available. |

1.3 Details of the supplier of the safety data sheet:

Supplier:

ROQUETTE FRERES
1 Rue de la Haute Loge
62136 LESTREM - France

Telephone: +33 3 21 63 36 00

Fax: +33 3 21 63 38 50

E-mail: sds@roquette.com

1.4 Emergency telephone number:

World directory of poisons centres : http://www.who.int/gho/phe/chemical_safety/poisons_centres/en/

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture:

The product has not been classified as dangerous according to GHS.

2.2 Label elements:

Not applicable

2.3 Other hazards:

Dust may form an explosive mixture in the atmosphere.

SECTION 3: Composition/information on ingredients

3.1 Substance:

| Chemical name | Concentration | CAS-No. |
|---------------|---------------|-----------|
| Maltodextrin | >=95% | 9050-36-6 |

SECTION 4: First aid measures

4.1 Description of first aid measures:

Inhalation: Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

Eye contact: Flush thoroughly with water for at least 15 minutes. Get medical assistance.

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| Skin contact: | Wash with soap and water. |
| Ingestion: | Product not hazardous when ingested. |
| 4.2 Most important symptoms and effects, both acute and delayed: | Dust may irritate the eyes and the respiratory system. |
| 4.3 Indication of any immediate medical attention and special treatment needed: | |
| Treatment: | Treat symptomatically. |

SECTION 5: Firefighting measures

5.1 Extinguishing media:

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| Suitable extinguishing media: | Water spray. |
| Unsuitable extinguishing media: | Dry chemicals or foams. Straight Streams of Water |

5.2 Special hazards arising from the substance or mixture:

Fire or excessive heat may produce hazardous decomposition products. Dust may form an explosive mixture in the atmosphere. See Section 10.

5.3 Advice for firefighters:

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| Special Fire Fighting Procedures: | Prevent dust cloud. Do not use water jet as an extinguisher, as this will spread the fire. |
| Special protective equipment for fire-fighters: | Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. |

SECTION 6: Accidental release measures

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|---|--|
| 6.1 Personal precautions, protective equipment and emergency procedures: | See Section 8 of the SDS for Personal Protective Equipment. |
| 6.2 Environmental precautions: | Not regarded as dangerous for the environment. |
| 6.3 Methods and material for containment and cleaning up: | Remove material, as much as possible, using mechanical equipment. Prevent dust cloud. Collect and dispose of spillage as indicated in section 13 of the SDS. |

SECTION 7: Handling and storage

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|--|---|
| 7.1 Precautions for safe handling: | See Section 8 of the SDS for Personal Protective Equipment. |
| 7.2 Conditions for safe storage, including any incompatibilities: | Avoid contact with oxidizing agents. Store in a dry place. Store at room temperature. |

SECTION 8: Exposure controls/personal protection

8.1 Control parameters:

Occupational exposure limits:

This product does not contain any components >1% with specific occupational exposure limits.

8.2 Appropriate engineering controls:

Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of dust.

8.3 Individual protection measures, such as personal protective equipment:

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|--------------------------------|--|
| Eye/face protection: | Wear dust-resistant safety glasses where there is danger of eye contact. (EN 166) |
| Skin protection: | |
| Hand Protection: | No specific precautions. |
| Other: | Wear suitable protective clothing. |
| Respiratory Protection: | In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter (type P1). (EN 143) |
| Hygiene measures: | Handle the product in accordance with the good hygiene practices and safety instructions. |

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

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|---|-----------------------------------|
| Physical State: | solid |
| Form: | Powder |
| Color: | White |
| Odor: | Odorless |
| pH: | ~ 5 at 50 % |
| Melting Point: | Not Applicable No data available. |
| Boiling Point: | Not Applicable |
| Flash Point: | Not Applicable |
| Vapor pressure: | Not Applicable |
| Vapor density (air=1): | Not Applicable |
| Density: | ~ 0.4 g/cm ³ |
| Solubility in Water: | Soluble > 600 g/l at 20 °C |
| Partition coefficient (n-octanol/water): | < -2 - ECHA Database - |
| Decomposition Temperature: | > 200 °C |

Explosive properties: - INERIS -Data from similar product.

Ignition Temperature:

~ 420 °C (EN 50281-2-1) MIT in Cloud.
 ~ 420 °C MIT in Cloud.
 > 400 °C (EN 50281-2-1) 5 mm layer (Glowing Temperature).

MIE (Minimum Ignition Energy):

> 1,200 mJ (EN 13821 (Without Inductance))
 Very low sensitivity to ignition by an electrostatic phenomenon.
 30 - 100 mJ (EN 13821 (Without Inductance, <63 µm).)
 Sensitive to ignition by an electrostatic phenomenon.

dP/dtmax (Maximum Rate of explosion Pressure rise):

~ 280 bar/s (EN 14034-2)

Pmax (Maximum Explosion OverPressure) ±10%:

~ 6.5 bar (EN 14034-1)

Kst value (±20%):

~ 76 bar·m/s (EN 14034-2)

Dust Explosion Class:

st 1 (VDI 3673)

Volume resistivity:

1,1x10¹⁵ Ω·m (IEC 61241-2-2 / Group IIIB non-conductive dust.)

Moisture:

~ 4.9 % (ISO 589)

Mv (Median value):

~ 121 µm (NFX 11-666)

Other Data:

LEL (Lower Explosion limit) : 30 - 60 g/m³
 BZ (Combustion class) : 5 (VDI 2263-1)

9.2 Other information:

SECTION 10: Stability and reactivity

10.1 Reactivity:

Strong oxidizing agents.

10.2 Chemical stability:

Material is stable under normal conditions.

10.3 Possibility of hazardous reactions:

No hazardous reactions under ordinary conditions of use and storage.

10.4 Conditions to avoid:

Prevent dust cloud. Dust clouds may be explosive under certain conditions. Avoid dust close to ignition sources.

10.5 Incompatible materials:

Strong oxidizing substances.

10.6 Hazardous decomposition products:

Carbon Monoxide. Carbon Dioxide.

SECTION 11: Toxicological information

11.1 Information on toxicological effects:

Acute toxicity :

| Test / Substance | Species | Type / Result | Exposure | Remarks |
|------------------|---------|---|----------|---|
| Maltodextrin | Rat | LD50 - Oral >2000mg/kg Not classified | | - Literature Reference - Data from similar product. |
| Maltodextrin | Rat | LD50 - Dermal >2000mg/kg Not classified | | - Literature Reference - Data from similar product. |

Skin irritation. :

No data available.

| | |
|---------------------------------|---|
| Serious eye irritation : | No data available. |
| Sensitization : | No data available. |
| Repeated dose toxicity : | No data available. |
| Mutagenesis: | No data available. |
| Carcinogenicity: | No data available. |
| Reproductive toxicity: | No data available. |
| Remarks: | The ingredients of this product are not classified as carcinogenic by the ACGIH, the CIRC, the OSHA or the NTP. |

SECTION 12: Ecological information

12.1 Toxicity:

Acute toxicity:

| Test / Substance | Species | Type/Result | Exposure | Remarks |
|-------------------------------|---------------------------------|-------------------------------------|----------|--------------------------|
| OECD 203 Similar substance | Common Carp | LC50 : > 100 mg/l Not classified | 96 h | - Literature Reference - |
| OECD 202 Similar substance | Daphnia magna | LC50 : > 100 mg/l Not classified | 48 h | - Literature Reference - |
| OECD 201 Similar substance | Pseudokirchneriella subcapitata | LC50 : > 100 mg/l Not classified | 72 h | - Literature Reference - |

Chronic Toxicity: No data available.

12.2 Persistence and degradability:

| Test / Substance | Result | Remarks |
|--------------------------------|---|--------------------------|
| OECD 301b Similar substance | 73 - 81 % / 28 d The product is readily biodegradable. | - Literature Reference - |

12.3 Bioaccumulative potential:

| Test / Substance | Log Pow (n-Octanol/Water Partition Coefficient) | Bioconcentration Factor (BCF) / Bioaccumulation | Remarks |
|------------------|---|---|-------------------|
| Glucose | < -2 | 3.16 | - ECHA Database - |

12.4 Mobility in soil:

| Test / Substance | Medium | Organic Carbon Partition Coefficient (Koc) | Remarks |
|------------------|--------|--|--------------------------|
| Glucose | | ~ 10 | - Literature Reference - |

12.5 Other adverse effects: None known.

SECTION 13: Disposal considerations

13.1 Disposal methods:

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|----------------------------|--|
| Product: | Dispose of waste in an appropriate authorized treatment facility in accordance with regulations in force and product characteristics at time of disposal.(for example, energy recovery). |
| Packaging material: | Single use packaging. Collect for salvage or disposal. |

SECTION 14: Transport information

14.1 - 14.4 This material is not subject to transport regulations (IMDG, ICAO/IATA, ADR/RID, ADN).

14.5 Environmental hazards: Not regulated.

14.6 Special precautions for user: No special precautions.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code: Not applicable.

SECTION 15: Regulatory information

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

International Inventories :

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|---|---------|
| Australia. Inventory of Chemical Substances (AICS): | Listed. |
| Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL): | Listed. |
| China. Inventory of Existing Chemical Substances (IECSC): | Listed. |
| EU. European Inventory of Existing Commercial Chemical Substances (EINECS): | Listed. |
| Korea. Existing Chemicals Inventory (KECI): | Listed. |
| Mexico. National Inventory of Chemical Substances (INSQ): | Listed. |
| New Zealand. Inventory of Chemicals (NZIoC): | Listed. |
| Philippines. Inventory of Chemicals and Chemical Substances (PICCS): | Listed. |
| Taiwan. Existing Chemicals Inventory (TCSI): | Listed. |
| US. Toxic Substances Control Act (TSCA): | Listed. |
| Vietnam. National Chemical Inventory: | Listed. |

This Safety Data Sheet is in conformity with appendix 4 of the GHS (Globally Harmonised System of Classification and Labelling of Chemicals).

SECTION 16: Other information

Revision Information: Not relevant.

Key literature references and sources for data: No data available.

Abbreviations and acronyms used in the SDS.:

LD50: lethal dose 50%
CAS: Chemical Abstracts Service (division of the American Chemical Society)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals

Disclaimer:

The information provided in this Safety Data Sheet (SDS) relates only to the specific product designated and may not be applicable when such product is used in combination with other materials or in any process. It is the responsibility of the user to be aware of and to follow the regulations applying to our product for its possession, handling and use.
The information given is designed only as a guidance and is not to be considered a warranty or quality specification.
All information and instructions provided in this SDS are based on the current state of our knowledge at the latest revision date indicated.