

SAFETY DATA SHEET
LYCADEX® PF / DEXTROSE MONOHYDRATE

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

1.1 Product identifier:

Product name: LYCADEX® PF / DEXTROSE MONOHYDRATE
Chemical name: D-Glucose, Hydrate
CAS-No.: 77938-63-7, 14431-43-7, 50-99-7

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

Identified uses:	Uses advised against:
Food., Pharmaceuticals., Industrial.,	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

National Supplier:

ROQUETTE AMERICA Inc.
1003 S. 5th STREET
52632 - 6647 KEOKUK, IA - U.S.A

Telephone: +1 319 524 5757
Fax: +1 319 526 3371

1.4 Emergency telephone number:

National Capital Poison Center: 1 800 222 1222 (24/24)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture:

This product is not hazardous according to OSHA 29CFR 1910.1200.

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.
D-Glucose, Hydrate	>=91%	77938-63-7, 14431-43-7, 50- 99-7

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.
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:

Suitable extinguishing media:	Water spray.
Unsuitable extinguishing media:	Dry chemicals or foams.

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:

Special Fire Fighting Procedures:	Prevent dust cloud.
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

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.
6.4 Reference to other sections:	For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

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.

7.3 Specific end use(s):

Food., Pharmaceuticals., Industrial.,

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.

Chemical name	Type	Exposure Limit Values	Source
Dust - Inhalable particles.	TWA	10 mg/m ³	US. ACGIH Threshold Limit Values (01 2010)
Dust - Respirable particles.	TWA	3 mg/m ³	US. ACGIH Threshold Limit Values (01 2010)
Dust - Respirable fraction.	PEL	5 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Dust - Total dust.	PEL	15 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Dust - Total dust.	TWA	15 mg/m ³	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
Dust - Respirable fraction.	TWA	5 mg/m ³	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)

8.2 Exposure controls:
Appropriate engineering controls:

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

Individual protection measures, such as personal protective equipment:
Eye/face protection:

Wear dust-resistant safety goggles where there is danger of eye contact.

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).

Hygiene measures:

Handle the product in accordance with the good hygiene practices and safety instructions.

Environmental exposure controls:

Not regarded as dangerous for the environment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:
Physical State:

solid

Form:

Powder

Color:	White
Odor:	Odorless
pH:	~ 4.3 at 50 %
Melting Point:	~ 83 °C
Boiling Point:	Not Applicable
Flash Point:	Not Applicable
Vapor pressure:	Not Applicable
Vapor density (air=1):	Not Applicable
Relative density:	~ 0.63
Solubility in Water:	~ 1,000 g/l at 20 °C
Partition coefficient (n-octanol/water):	-3.24 - Literature Reference -
Explosive properties: - INERIS -	
Ignition Temperature:	~ 420 °C (Godbert-Greenwald) MIT in Cloud. ~ 320 °C product in deposit.
MIE (Minimum Ignition Energy):	> 1,200 mJ (EN 13821 (Without Inductance))
dP/dtmax (Maximum Rate of explosion Pressure rise):	~ 270 bar/s (EN 14034-2)
Pmax (Maximum Explosion OverPressure) ±10%:	~ 2.7 bar (EN 14034-1)
Kst value (±20%):	~ 73 barm/s (EN 14034-2)
Dust Explosion Class:	st 1 (VDI 3673)
Volume resistivity:	> 10 ⁹ Ω.m (IEC 61241-2-2 / Group IIIB non-conductive dust.)
Moisture:	~ 8.5 % (ISO 589)
Mv (Median value):	~ 143 µm (NFX 11-666)

9.2 Other information:

Conductivity:	~ 1.3 µS/cm (at 50%)
----------------------	----------------------

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
OECD 423 Similar substance	Mouse	LD50 - Oral : >2000 mg/kg Not classified		- Literature Reference -

Skin irritation :

Test / Substance	Species	Result	Exposure	Remarks
OECD 431 Similar substance	Human	In vitro Not Irritating	1 h	- Literature Reference -

Serious eye irritation :

Test / Substance	Species	Result	Exposure	Remarks
OECD 437 Similar substance	Bovine cornea.	Not Irritating	4 h	- Literature Reference -
OECD 405 Similar substance	Rabbit	Not Irritating	72 h	- Literature Reference -

Sensitization :

Test / Substance	Type	Species	Result	Remarks
OECD 429 Similar substance	In vivo	Mouse	Non-Sensitising	- Literature Reference -

Repeated dose toxicity :

Test / Substance	Species	Result	Exposure	Remarks
OECD 453 Similar substance	Rat	No treatment related effects.	52 Week(s).	- Literature Reference -

Mutagenesis :

Test / Substance	Type	Species	Result	Remarks
OECD 473 Similar substance	In vitro	Hamster	Negative	
OECD 471 (Ames) Similar substance	In vitro	S. typhimurium	Negative	
OECD 474 Similar substance	In vivo	Mouse	Negative	

Carcinogenicity :

Test / Substance	Species	Route of Exposure / Exposure	Result	Remarks
OECD 453 Similar substance	Rat	Oral 2 Year(s)	No treatment related effects.	- Literature Reference -

Reproductive toxicity :

Test / Substance	Species	Route of Exposure / Exposure	Result	Remarks
OECD 416 Similar substance	Rat	Oral 12 Week(s).	No treatment related effects.	
OECD 414 Similar substance	Hamster	Oral 14 day(s)	No treatment related effects. NOAEL : 1,200 mg/kg	- Literature Reference -

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	-3.24	~ 3	Potential to bioaccumulate is low.

12.4 Mobility in soil:

Test / Substance	Medium	Organic Carbon Partition Coefficient (K _{oc})	Remarks
QSAR Glucose		~ 10	This material is readily biodegraded and is not likely to bioconcentrate.

12.5 Results of PBT and vPvB assessment: No data available.

12.6 Other adverse effects: None known.

SECTION 13: Disposal considerations

13.1 Waste treatment methods:

Product: Dispose of waste in an appropriate authorised treatment facility in accordance with regulations in force and product characteristics at time of disposal.

Packaging material: Single use packaging. Collect for salvage or disposal.

SECTION 14: Transport information

This material is not subject to transport regulations (DOT, IMDG, IATA).'

SECTION 15: Regulatory information

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

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65) :
Not listed

International Inventories :

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.
Japan. Inventory of Existing & New Chemical Substances (ENCS):	Listed.
Japan. Industrial Safety & Health Law (ISHL):	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 D of the OSHA Hazard Communication Standard 29CFR 1910.1200.

SECTION 16: Other information

Revision Information: Not relevant.

Key literature references and sources for data: ECHA registered substances database.
HSDB Database.

Abbreviations and acronyms used in the SDS.:

LC50 : lethal concentration 50%

LD50: lethal dose 50%

NOAEL : No Observed Adverse Effect Level

CAS: Chemical Abstracts Service (division of the American Chemical Society)

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.