

## SAFETY DATA SHEET GLUCONO DELTA LACTONE SG

### SECTION 1 : Identification

#### 1.1 Product identifier:

**Product name:** GLUCONO DELTA LACTONE SG

**Synonyms:** Glucono-Delta-Lactone (GDL)

**Chemical name:** D-Glucono-1,5-lactone

**CAS-No.:** 90-80-2

**EC No.:** 202-016-5

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

Identified uses:	Uses advised against:
Food.; Chemical Additive; Formulation and Packaging.; Fabrics, textiles and apparel.; Paper treatment.	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/](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:** May form explosible dust-air mixture if dispersed in the air

### SECTION 3: Composition/information on ingredients

#### 3.1 Substance:

Chemical name	Concentration	CAS-No.
D-Glucono-1,5-lactone	>=99%	90-80-2

### 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. If irritation occurs, get medical assistance.

**Skin contact:** Wash with soap and water. Contact physician if irritation continues.

**Ingestion:** Drink plenty of water. Do not induce vomiting. Get medical attention if symptoms occur.

**4.2 Most important symptoms and effects, both acute and delayed:** None known.

**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. Straight Streams of Water

**5.2 Special hazards arising from the substance or mixture:** Fire or excessive heat may produce hazardous decomposition products. See Section 10. Combustible dusts : may form an explosible mixture in the air.

**5.3 Advice for firefighters:**

**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**

**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**

**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:**

Store in a cool, dry place out of direct sunlight.

## 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:

**Eye/face protection:** Wear dust-proof safety goggles where there is a risk of eyes contact. (EN 166)

#### Skin protection:

**Hand Protection:** Wear gloves are recommended for prolonged use.

**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:

<b>Physical State:</b>	solid
<b>Form:</b>	Powder
<b>Color:</b>	White
<b>Odor:</b>	Odorless
<b>pH:</b>	~ 2,7 at 1 % w/w in water
<b>Melting Point:</b>	~ 153 °C
<b>Boiling Point:</b>	Not Applicable
<b>Flash Point:</b>	Not Applicable
<b>Vapor pressure:</b>	Not Applicable
<b>Vapor density (air=1):</b>	Not Applicable
<b>Relative density:</b>	~ 0,8
<b>Solubility in Water:</b>	~ 500 g/l at 20 °C
<b>Partition coefficient (n-octanol/water):</b>	-2,38 (Calculated)

**Explosive properties:** - INERIS -Data from similar product.

<b>MIT (Minimum ignition temperature):</b>	MITc (cloud) : ~ 440 °C (EN 50281-2-1 / ASTM E1491) MITL (5mm Layer) : ~ 400 °C (EN 50281-2-1/ ASTM E2021) TDA (Differential Thermal Analysis), $\Delta t$ : ~ 500 °C
<b>MIE (Minimum Ignition Energy):</b>	1 200 mJ (EN 13821 / ASTM E2019, Without Inductance) Very insensitive to the risk of inflammation by an electrostatic discharge.
<b>(dP/dt)max (Maximum Rate of explosion Pressure rise):</b>	~ 338 bar/s (EN 14034-2 / ASTM E1226)
<b>Pmax (Maximum Explosion OverPressure) <math>\pm 10\%</math>:</b>	~ 5,4 bar (EN 14034-1 / ASTM E1226)
<b>Kst value (<math>\pm 20\%</math>):</b>	~ 92 barm/s (EN 14034-2 / ASTM E1226)
<b>Dust Explosion Class:</b>	st 1 (VDI 3673)
<b>Volume resistivity:</b>	>10 <sup>9</sup> $\Omega$ .m (IEC 61241-2-2 / Group IIIB non-conductive dust.)
<b>Moisture:</b>	0,5 % (ISO 589)
<b>Mv (Median value):</b>	~ 228 $\mu$ m (ISO 13320)
<b>Other Data:</b>	MEC (Minimum Explosible Concentration) : 30-60 g/m <sup>3</sup> (EN 14034-3 / ASTM E1515)

## 9.2 Other information:

The data reported in this section does not take the place of specifications.

## SECTION 10: Stability and reactivity

<b>10.1 Reactivity:</b>	Oxidizing agents.
<b>10.2 Chemical stability:</b>	Material is stable under normal conditions.
<b>10.3 Possibility of hazardous reactions:</b>	No hazardous reactions under ordinary conditions of use and storage.
<b>10.4 Conditions to avoid:</b>	Prevent dust cloud. Dust clouds may be explosive under certain conditions. Avoid dust close to ignition sources.
<b>10.5 Incompatible materials:</b>	Strong oxidizing substances.
<b>10.6 Hazardous decomposition products:</b>	Carbon Dioxide. Carbon Monoxide.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects:

#### Acute toxicity :

Test / Substance	Species	Type / Result	Exposure	Remarks
OECD 401	Rat	LD50 - Oral 6,06g/kg Not classified	14 h	- ECHA Database - Data from similar product.
OECD 402	Rat	LD50 - Dermal >2000mg/kg Not classified	24 h	- ECHA Database - Data from similar product.
Other Guideline.	Rabbit	LD50 - Not available. >2000mg/kg Not classified		- ECHA Database -

**Skin irritation :**

Test / Substance	Species	Result	Exposure	Remarks
OECD 404 Data from similar product.	Rabbit	Not Irritating	72 h	- ECHA Database -

**Serious eye irritation :**

Test / Substance	Species	Result	Exposure	Remarks
OECD 405 Data from similar product.	Rabbit	Not Irritating	72 h	- ECHA Database -

**Sensitization :**

Test / Substance	Type	Species	Result	Remarks
OECD 429 Data from similar product.	In vivo	Mouse	Non-Sensitising	- ECHA Database -

**Repeated dose toxicity :**

Test / Substance	Species	Result	Exposure	Remarks
OECD 408	Rat	No treatment related effects.	90 day(s)	- ECHA Database - Data from similar product.

**Mutagenesis :**

Test / Substance	Type	Species	Result	Remarks
OECD 471 (Ames)		S. typhimurium	Negative	- ECHA Database -

**Carcinogenicity:**

No data available.

**Reproductive toxicity :**

Test / Substance	Species	Route of Exposure / Exposure	Result	Remarks
OECD 414	Rat	Oral 20 day(s)	No treatment related effects. NOAEL : 594 mg/kg	- ECHA Database -
OECD 414	Mouse	Oral 20 day(s)	No treatment related effects. NOAEL : 695 mg/kg	- ECHA Database -
OECD 414	Hamster	Oral 20 day(s)	No treatment related effects. NOAEL : 560 mg/kg	- ECHA Database -
OECD 414	Rabbit	Oral 20 day(s)	No treatment related effects. NOAEL : 780 mg/kg	- ECHA Database -

## SECTION 12: Ecological information

### 12.1 Toxicity:

#### Acute toxicity:

Test / Substance	Species	Type/Result	Exposure	Remarks
OECD 203	Oryzias latipes	LC50 : > 100 mg/l Not classified	96 h	- ECHA Database -
OECD 202	Daphnia magna	LC50 : 305 mg/l Not classified	24 h	- ECHA Database -
OECD 201	Desmodesmus subspicatus	EC50 : > 100 mg/l Not classified	72 h	- ECHA Database -
OECD 209	Activated Sludge.	EC50 : 649,8 mg/l Not classified	3 h	- ECHA Database -

**Chronic Toxicity:** No data available.

#### 12.2 Persistence and degradability:

Test / Substance	Result	Remarks
EU.C4-E	89 % / 28 d The product is readily biodegradable.	- ECHA Database - Data from similar product.
OECD 302b	98,3 % / 19 d Inherently biodegradable	- ECHA Database - Data from similar product.

#### 12.3 Bioaccumulative potential:

Test / Substance	Log Pow (n-Octanol/Water Partition Coefficient)	Bioconcentration Factor (BCF) / Bioaccumulation	Remarks
Calculated	-2,38	~ 3	- Literature Reference - Potential to bioaccumulate is low.

#### 12.4 Mobility in soil:

Test / Substance	Medium	Organic Carbon Partition Coefficient (Koc)	Remarks
Calculated	soil	~ 10	This material is readily biodegraded and is not likely to bioconcentrate. - Literature Reference -

**12.5 Other adverse effects:** None known.

## SECTION 13: Disposal considerations

### 13.1 Disposal methods:

**Product:** Dispose of waste in an appropriate authorized 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

**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 Maritime transport in bulk according to IMO instruments:** Not applicable.

## SECTION 15: Regulatory information

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

#### 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.
Thailand. Existing Chemicals Inventory from FDA (TECI):	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:** ToxNet Database.  
REACH registration dossier:  
<https://echa.europa.eu/en/registration-dossier/-/registered-dossier/1952>

**Other information:** Updated version of this document is available at :<https://www.roquette.com/site-search#documents>

#### Abbreviations and acronyms used in the SDS.:

LD50: lethal dose 50%  
LC50 : lethal concentration 50%  
EC50 : The effective concentration of substance that causes 50% of the maximum response.  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
OECD : Organisation for Economic Cooperation and Development  
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.