

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 6.11

Revision Date 27.12.2023

Print Date 04.05.2025

GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

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

1.1 Product identifiers

Product name : GLYCOLYSIS/GLUCONEOGENESIS
METABOLITE LIBRARY

Product Number : ML0013
Brand : Sigma
REACH No. : This product is a mixture. REACH Registration Number see
section 3.

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

Identified uses : Laboratory chemicals, Manufacture of substances
Uses advised against : For R&D use only. Not for pharmaceutical, household or other
uses.

1.3

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1.4 Emergency telephone

Emergency Phone # : 000 800 1007 141 (CHEMTREC)

This is a summary SDS for a kit. For the full SDS for each of the components listed in
section 16 please visit our website.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Skin corrosion, (Sub-category 1C) H314: Causes severe skin burns and eye damage.

Serious eye damage, (Category 1) H318: Causes serious eye damage.

Skin sensitization, (Category 1)	H317: May cause an allergic skin reaction.
Specific target organ toxicity - single exposure, (Category 2), Eyes, Central nervous system	H371: May cause damage to organs.
Specific target organ toxicity - single exposure, (Category 3), Respiratory system	H335: May cause respiratory irritation.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal Word	Danger
Hazard Statements	
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.
H371	May cause damage to organs (Eyes, Central nervous system).
Precautionary Statements	
P260	Do not breathe dust.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Supplemental Hazard information (EU)	
EUH071	Corrosive to the respiratory tract.

Reduced Labeling (<= 125 ml)

Pictogram

Signal Word	Danger
Hazard Statements	
H317	May cause an allergic skin reaction.
H314	Causes severe skin burns and eye damage.
Precautionary Statements	
P260	Do not breathe dust.
P280	Wear protective gloves/ protective clothing/ eye protection/ face

P303 + P361 + P353	protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Supplemental Hazard information (EU) EUH071	Corrosive to the respiratory tract.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

Refer to component SDS

SECTION 4: First aid measures

Refer to component SDS

SECTION 5: Firefighting measures

Refer to component SDS

SECTION 6: Accidental release measures

Refer to component SDS

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed. Dry.

Storage stability Recommended storage temperature
-20 °C

Storage class

Storage class (TRGS 510): 8A: Combustible, corrosive hazardous materials

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

Refer to component SDS

SECTION 9: Physical and chemical properties

Refer to component SDS

SECTION 10: Stability and reactivity

Refer to component SDS

SECTION 11: Toxicological information

Refer to component SDS

SECTION 12: Ecological information

Refer to component SDS

SECTION 13: Disposal considerations

Refer to component SDS

SECTION 14: Transport information**14.1 UN number**

ADR/RID: 3316

IMDG: 3316

IATA: 3316

14.2 UN proper shipping name

ADR/RID: CHEMICAL KIT

IMDG: CHEMICAL KIT

IATA: Chemical kit

14.3 Transport hazard class(es)

ADR/RID: 9

IMDG: 9

IATA: 9

14.4 Packaging group

ADR/RID: III

IMDG: III

IATA: III

14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

14.6 Special precautions for user

Tunnel restriction code : (E)

Further information : No data available

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

Refer to component SDS

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information**Kit Components:**

α-D-Glucose	Aldrich	158968	
Biotin	Sigma-Aldrich	B4501	
Dihydroxyacetone	Sigma	D7137	
phosphate dilithium salt			
D-Fructose 6-phosphate	Sigma	F3627	Skin Irrit. 2; Eye Irrit. 2; H315, H319
disodium salt hydrate			
D-Fructose 1,6-	Sigma	F6803	
bisphosphate trisodium			
salt hydrate			
α-D-Glucose 1-	Sigma	G6750	
phosphate dipotassium			
salt hydrate			
Guanosine 5'-	Sigma	G7127	
diphosphate sodium salt			
D-(+)-Glucose	Sigma	G7528	
D-Glucose 6-phosphate	Sigma	G7879	
sodium salt			
Guanosine 5'-	Sigma	G8877	
triphosphate sodium salt			
hydrate			
α-Ketoglutaric acid	Sigma	K1750	Eye Dam. 1; H318
L(+)-lactic acid free acid	Sigma	L1750	Skin Corr. 1C; Eye Dam. 1; H314, EUH071
Malic acid	Sigma-Aldrich	M8304	Eye Irrit. 2; H319
Oxaloacetic acid	Sigma	O7753	Eye Irrit. 2; H319
Sodium pyruvate	Sigma-Aldrich	P2256	Eye Irrit. 2; Skin Sens. 1B;

Phospho(enol)pyruvic acid monopotassium salt	Sigma	P7127	H317, H319
D-(–)-3-Phosphoglyceric acid disodium salt	Sigma	P8877	Skin Irrit. 2; Eye Irrit. 2; STOT SE 2; STOT SE 3; H315, H319, H335, H371

Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Classification of the mixture

Skin Corr.1C	H314
Eye Dam.1	H318
Skin Sens.1	H317
STOT SE2	H371
STOT SE3	H335

Classification procedure:

Calculation method
Calculation method
Calculation method
Calculation method
Calculation method

Further information

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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Kit Components:

α-D-Glucose					
Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary Statements	Supplemental information
Aldrich - 158968					Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

Biotin					
Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary Statements	Supplemental information
Sigma-Aldrich - B4501					No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required

Dihydroxyacetone phosphate dilithium salt					
Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary Statements	Supplemental information
Sigma - D7137					No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required

D-Fructose 6-phosphate disodium salt hydrate					
Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary Statements	Supplemental information
Sigma - F3627		Warning	Causes skin irritation. Causes serious eye irritation.	Wash skin thoroughly after handling. IF ON SKIN: Wash with plenty of water. Wear	

				protective gloves/ eye protection/ face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation occurs: Get medical advice/ attention. If eye irritation persists: Get medical advice/ attention.	
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D-Fructose 1,6-bisphosphate trisodium salt hydrate					
Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary Statements	Supplemental information
Sigma - F6803					Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

α -D-Glucose 1-phosphate dipotassium salt hydrate					
Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary Statements	Supplemental information
Sigma - G6750					Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008

Guanosine 5'-diphosphate sodium salt					
Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary Statements	Supplemental information
Sigma - G7127					No hazard pictogram, no signal word, no hazard statement(s), no

					precautionary statement(s) required
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D-(+)-Glucose					
Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary Statements	Supplemental information
Sigma - G7528					No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required

D-Glucose 6-phosphate sodium salt					
Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary Statements	Supplemental information
Sigma - G7879					Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

Guanosine 5'-triphosphate sodium salt hydrate					
Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary Statements	Supplemental information
Sigma - G8877					No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required

α-Ketoglutaric acid					
Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary Statements	Supplemental information
Sigma - K1750		Danger	Causes serious eye damage.	Wear eye protection/ face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and	

				easy to do. Continue rinsing.	
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L(+)-lactic acid free acid

Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary Statements	Supplemental information
Sigma - L1750		Danger	Causes severe skin burns and eye damage.	Do not breathe dust. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wear protective gloves/ protective clothing/ eye protection/ face protection. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Wash contaminated clothing before reuse.	Corrosive to the respiratory tract.

Malic acid

Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary Statements	Supplemental information
Sigma-Aldrich - M8304		Warning	Causes serious eye irritation.	Wash skin thoroughly after handling. IF IN EYES: Rinse	

				cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Wear eye protection/ face protection. If eye irritation persists: Get medical advice/ attention.	
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Oxaloacetic acid

Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary Statements	Supplemental information
Sigma - 07753		Warning	Causes serious eye irritation.	Wash skin thoroughly after handling. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Wear eye protection/ face protection. If eye irritation persists: Get medical advice/ attention.	

Sodium pyruvate

Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary Statements	Supplemental information
Sigma-Aldrich - P2256		Warning	May cause an allergic skin reaction. Causes serious eye irritation.	Avoid breathing dust. IF ON SKIN: Wash with plenty of water. Wash skin thoroughly after handling. IF IN EYES: Rinse cautiously	

				with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/ eye protection/ face protection.	
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Phospho(enol)pyruvic acid monopotassium salt

Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary Statements	Supplemental information
Sigma - P7127					No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required

D-(–)-3-Phosphoglyceric acid disodium salt

Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary Statements	Supplemental information
Sigma - P8877		Warning	Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause damage to organs (Eyes, Central nervous system).	Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. IF ON SKIN: Wash with plenty of water. Wash skin thoroughly after handling. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.	

				Continue rinsing. Do not eat, drink or smoke when using this product. IF exposed or concerned: Call a POISON CENTER/ doctor.	
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