

# • SAFETY DATA SHEET

Version 6.15  
Revision Date 12/19/2025  
Print Date 12/20/2025

## SECTION 1. IDENTIFICATION

### 1.1 Product identifiers

Product name : Glutamine and Glutamate Determination Kit

Product Number : GLN1

Brand : Sigma

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

Identified uses : Laboratory chemicals, Synthesis of substances

Uses advised against : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

### 1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765

Fax : +1 800 325-5052

### 1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

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.

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## SECTION 2. HAZARDS IDENTIFICATION

### GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

#### Hazards for the product as supplied

Acute toxicity (Oral)	: Category 4
Acute toxicity (Inhalation)	: Category 2
Acute toxicity (Dermal)	: Category 3
Skin corrosion	: Sub-category 1B
Serious eye damage	: Category 1
Respiratory sensitisation	: Category 1
Skin sensitisation	: Category 1
Carcinogenicity	: Category 1B
Specific target organ toxicity - repeated exposure	: Category 2 (Respiratory Tract)
Short-term (acute) aquatic hazard	: Category 1
Long-term (chronic) aquatic hazard	: Category 1

#### Other hazards

None known.

#### GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H302 Harmful if swallowed.  
H311 Toxic in contact with skin.  
H314 Causes severe skin burns and eye damage.  
H317 May cause an allergic skin reaction.  
H330 Fatal if inhaled.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H350 May cause cancer.

H373 May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure.  
H410 Very toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements : Corrosive to the respiratory tract.

Precautionary statements : **Prevention:**

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe mist or vapours.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P272 Contaminated work clothing must not be allowed out of the workplace.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P284 Wear respiratory protection.

**Response:**

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.  
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.  
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.  
P361 + P364 Take off immediately all contaminated clothing and wash it before reuse.  
P391 Collect spillage.

**Storage:**

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Refer to component SDS

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**SECTION 4. FIRST AID MEASURES**

Refer to component SDS

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**SECTION 5. FIREFIGHTING MEASURES**

Refer to component SDS

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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

Refer to component SDS

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**SECTION 7. HANDLING AND STORAGE**

For precautions see section 2.2.

- |   |   |   |
|---|---|---|
| Advice on safe handling                   | : | Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.   |
| Conditions for safe storage               | : | Keep container tightly closed in a dry and well-ventilated place.   |
| Further information on storage conditions | : | Tightly closed.<br>Keep in a well-ventilated place.<br>Keep locked up or in an area accessible only to qualified or authorised persons. |
| Storage class                             | : | 6.1A, Combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials  |
| Recommended storage temperature           | : | 36 - 46 °F / 2 - 8 °C   |
| Further information on storage stability  | : | Light sensitive.  |

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**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Refer to component SDS

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Refer to component SDS

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## SECTION 10. STABILITY AND REACTIVITY

Refer to component SDS

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## SECTION 11. TOXICOLOGICAL INFORMATION

Refer to component SDS

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## SECTION 12. ECOLOGICAL INFORMATION

Refer to component SDS

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## SECTION 13. DISPOSAL CONSIDERATIONS

Refer to component SDS

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## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### IATA-DGR

UN/ID No. : UN 2030  
Proper shipping name : Hydrazine, aqueous solution  
Class : 8  
Subsidiary risk : 6.1  
Packing group : II  
Labels : Class 8 - Corrosive substances, Division 6.1 - Toxic substances  
Packing instruction (cargo aircraft) : 855  
Packing instruction (passenger aircraft) : Not permitted for transport

#### IMDG-Code

UN number : UN 2030  
Proper shipping name : HYDRAZINE, AQUEOUS SOLUTION  
Class : 8  
Subsidiary risk : 6.1  
Packing group : II  
Labels : 8 (6.1)  
EmS Code : F-A, S-B  
Marine pollutant : yes

#### Transport in bulk according to IMO instruments

Not applicable for product as supplied.

## National Regulations

### 49 CFR Road

UN/ID/NA number : UN 2030  
Proper shipping name : Hydrazine aqueous solution

Class : 8  
Subsidiary risk : 6.1  
Packing group : II  
Labels : Class 8 - Corrosive substances, Division 6.1 - Toxic substances  
ERG Code : 153  
Marine pollutant : no

Poison Inhalation Hazard : No

### Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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## SECTION 15. REGULATORY INFORMATION

**SARA 311/312 Hazards** : Acute Health Hazard  
Chronic Health Hazard

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## SECTION 16. OTHER INFORMATION

### Kit Components:

2 mM L-Glutamine, Lyophilized	Sigma	G6275
1 mM L-Glutamic Acid, Lyophilized	Sigma	G6150
100 mM Adenosine 5'-Diphosphate, (ADP) Lyophilized	Sigma	A4558
30 mM $\beta$ -Nicotinamide Adenine Dinucleotide (NAD), Lyophilized	Sigma	N9268
Glutaminase, from Escherichia coli	Sigma	G8880
Hydrazine monohydrate	Sigma-Aldrich	207942
Tris (0.1 M)-EDTA (0.002 M) Buffer	Sigma	T3161
L-Glutamic dehydrogenase (L-GLDH), 1200 U/ml	Sigma	G5900
0.5 M Acetate buffer, pH	Sigma	A4433

Sigma - GLN1

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The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada

**MILLIPORE  
SIGMA**

## Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; 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 Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation 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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; 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

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US / EN

**Kit Components:**

<b>2 mM L-Glutamine, Lyophilized</b>					
Product identifier	Pictogram	Signal word	Hazard statements	Precautionary statements	Supplemental information
Sigma - G6275					No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

<b>1 mM L-Glutamic Acid, Lyophilized</b>					
Product identifier	Pictogram	Signal word	Hazard statements	Precautionary statements	Supplemental information
Sigma - G6150					No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

<b>100 mM Adenosine 5'-Diphosphate, (ADP) Lyophilized</b>					
Product identifier	Pictogram	Signal word	Hazard statements	Precautionary statements	Supplemental information
Sigma - A4558					No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

<b>30 mM <math>\beta</math>-Nicotinamide Adenine Dinucleotide (NAD), Lyophilized</b>					
Product identifier	Pictogram	Signal word	Hazard statements	Precautionary statements	Supplemental information
Sigma - N9268					No hazard pictogram, no signal word, no hazard

					statement(s), no precautionary statement(s) required.
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Glutaminase, from <i>Escherichia coli</i>					
Product identifier	Pictogram	Signal word	Hazard statements	Precautionary statements	Supplemental information
Sigma - G8880					No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

Hydrazine monohydrate					
Product identifier	Pictogram	Signal word	Hazard statements	Precautionary statements	Supplemental information
Sigma-Aldrich - 207942		Danger	<p>Flammable liquid and vapour.</p> <p>Harmful if swallowed.</p> <p>Toxic in contact with skin.</p> <p>Causes severe skin burns and eye damage.</p> <p>May cause an allergic skin reaction.</p> <p>Fatal if inhaled.</p> <p>May cause cancer.</p> <p>Very toxic to aquatic life with long lasting effects.</p>	<p>Obtain special instructions before use. IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth. Store in a well-ventilated place. Keep container tightly closed. Dispose of contents/ container to an approved waste disposal plant. Do not handle until all safety precautions have been read and understood. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Store in a well-ventilated place. Keep cool. Keep away from heat, hot</p>	

				<p>surfaces, sparks, open flames and other ignition sources. No smoking. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. Store locked up. Keep container tightly closed. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor. Ground and bond container and receiving equipment. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor. Use explosion-proof electrical/ ventilating/ lighting equipment. IF exposed or concerned: Get medical advice/ attention. Use non-sparking</p>	
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				<p>tools. If skin irritation or rash occurs: Get medical advice/ attention.</p> <p>Take action to prevent static discharges. Take off immediately all contaminated clothing and wash it before reuse. Do not breathe mist or vapours. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.</p> <p>Wash skin thoroughly after handling. Collect spillage. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment.</p> <p>Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>Wear respiratory protection.</p>	
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<b>Tris (0.1 M)-EDTA (0.002 M) Buffer</b>					
Product identifier	Pictogram	Signal word	Hazard statements	Precautionary statements	Supplemental information
Sigma - T3161		Warning	May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure.	Do not breathe mist or vapours. Get medical advice/ attention if you feel unwell. Dispose of contents/ container to an approved waste disposal plant.	

<b>L-Glutamic dehydrogenase (L-GLDH), 1200 U/ml</b>					
Product identifier	Pictogram	Signal word	Hazard statements	Precautionary statements	Supplemental information
Sigma - G5900		Danger	May cause allergy or asthma symptoms or breathing difficulties if inhaled.	Avoid breathing mist or vapours. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Dispose of contents/ container to an approved waste disposal plant. In case of inadequate ventilation wear respiratory protection. If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.	

<b>0.5 M Acetate buffer, pH 5</b>					
Product identifier	Pictogram	Signal word	Hazard statements	Precautionary statements	Supplemental information
Sigma - A4433					No hazard pictogram, no signal word, no hazard statement(s), no precautionary

					statement(s) required.
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