

# SAFETY DATA SHEET

Version 8.14  
Revision Date 07/15/2025  
Print Date 03/06/2026

## SECTION 1. IDENTIFICATION

### 1.1 Product identifiers

Product name : Arginase Assay Kit

Product Number : MAK112

Brand : Sigma

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

Identified uses : Laboratory chemicals, Synthesis of substances

### 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)

Corrosive to metals : Category 1

Skin corrosion : Sub-category 1A

Serious eye damage : Category 1

Skin sensitisation : Category 1

Reproductive toxicity : Category 1B  
Short-term (acute) aquatic hazard : Category 3  
Long-term (chronic) aquatic hazard : Category 3

### Other hazards

None known.

### GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.  
H317 May cause an allergic skin reaction.  
H360 May damage fertility or the unborn child.  
H412 Harmful 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.  
P234 Keep only in original packaging.  
P261 Avoid breathing mist or vapours.  
P264 Wash skin thoroughly after handling.  
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 and face protection.  
**Response:**  
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.  
P362 + P364 Take off contaminated clothing and wash it before reuse.  
P390 Absorb spillage to prevent material damage.

**Storage:**

P405 Store locked up.  
P406 Store in a corrosion resistant container with a resistant inner liner.

**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.

No metal containers.

Further information on storage conditions : Tightly closed.  
Keep in a well-ventilated place.  
Keep locked up or in an area accessible only to

qualified or authorised persons.

Storage class : 6.1D, Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

Recommended storage temperature : -4 °F / -20 °C

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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 3316  
Proper shipping name : Chemical kit  
Class : 9  
Packing group : II  
Labels : Class 9 - Miscellaneous dangerous substances and articles  
Packing instruction (cargo aircraft) : 960  
Packing instruction (passenger aircraft) : 960

#### IMDG-Code

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UN number : UN 3316  
Proper shipping name : CHEMICAL KIT

Class : 9  
Packing group : II  
Labels : 9  
EmS Code : F-A, S-P  
Marine pollutant : no

### Transport in bulk according to IMO instruments

Not applicable for product as supplied.

### National Regulations

#### 49 CFR Road

UN/ID/NA number : UN 3316  
Proper shipping name : Chemical kits

Class : 9  
Packing group : II  
Labels : Class 9 - Miscellaneous dangerous substances and articles  
ERG Code : 171  
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:

Arginine Buffer	Sigma	MAK112A
Reagent A	Sigma	MAK112B
Urea Standard	Sigma	MAK112C
Mn Solution	Sigma	MAK112D
Reagent B	Sigma	MAK112E

### 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); EC<sub>x</sub> - Concentration associated with x% response; EHS - Extremely Hazardous Substance; EL<sub>x</sub> - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErC<sub>x</sub> - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized 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; IC<sub>50</sub> - 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; LC<sub>50</sub> - Lethal Concentration to 50 % of a test population; LD<sub>50</sub> - 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 - 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; 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>Arginine Buffer</b>					
Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary statements	Supplemental information
Sigma - MAK112A					No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

<b>Reagent A</b>					
Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary statements	Supplemental information
Sigma - MAK112B		Warning	<p>May be corrosive to metals.</p> <p>Causes skin irritation.</p> <p>May cause an allergic skin reaction.</p> <p>Causes serious eye irritation.</p> <p>Harmful to aquatic life with long lasting effects.</p>	<p>Keep only in original packaging. IF ON SKIN: Wash with plenty of water. Store in a corrosion resistant container with a resistant inner liner. Dispose of contents/ container to an approved waste disposal plant. Avoid breathing mist or vapours. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Wash skin thoroughly</p>	

				<p>after handling. If skin irritation or rash occurs: Get medical advice/ attention.</p> <p>Contaminated work clothing must not be allowed out of the workplace.</p> <p>If eye irritation persists: Get medical advice/ attention.</p> <p>Avoid release to the environment.</p> <p>Absorb spillage to prevent material damage. Wear protective gloves/ eye protection/ face protection.</p>	
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**Urea Standard**

Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary statements	Supplemental information
Sigma - MAK112C					No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

**Mn Solution**

Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary statements	Supplemental information
Sigma - MAK112D					No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

<b>Reagent B</b>					
Product identifier	Pictogram	Signal Word	Hazard Statements	Precautionary statements	Supplemental information
Sigma - MAK112E		Danger	<p>May be corrosive to metals.            Causes severe skin burns and eye damage.            May damage fertility or the unborn child.</p>	<p>Obtain special instructions before use. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Store locked up. Dispose of contents/ container to an approved waste disposal plant. Do not handle until all safety precautions have been read and understood. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. Store in a corrosion resistant container with a resistant inner liner. Keep only in original packaging. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor. Wash skin thoroughly after handling. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact</p>	

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				<p>lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor. Wear protective gloves, protective clothing, eye protection and face protection. IF exposed or concerned: Get medical advice/ attention. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.</p>	
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