



SAFETY DATA SHEET

Section 1: Identification

Product Identifier: Phenylalanine Ammonia Lyase (PAL) Activity Assay Kit (#MAES0426)

Relevant Identified Uses of Substance or Mixture and Uses Advised Against:

Recommended Use: For Research Use Only

Uses Advised against: No information

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Section 2: Hazard(s) Identification

2.1 GHS Classification

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

2.2.1 Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

2.2.2 Label Elements

Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

2.3 Other hazards-none

Section 3: Composition/ Information on Ingredients

Items	Component	Physical form	Hazardous Ingredient	Concentration	CAS No.
Reagent 1	Extracting Solution	Odorless and colorless, liquid	No hazards	-	-
Reagent 2	Buffer Solution	Odorless and colorless, liquid	No hazards	-	-
Reagent 3	Substrate	Odorless and white, powder	No hazards	-	-
Reagent 4	Stop Solution	Odorless and colorless, liquid	Sulfuric acid (H ₂ SO ₄)	0.040%	7664-93-9

Section 4: First-Aid Measures

- Classification according to GHS

4.1 General advice

- Consult a physician. Show this safety data sheet to the doctor in attendance.

4.2 If inhaled

- If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

4.3 In case of skin contact

- Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

4.4 In case of eye contact

- Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

4.5 If swallowed

- Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section 5: Fire-Fighting Measures

5.1 Suitable extinguishing media

- **Suitable:** Water spray, alcohol-resistant foam, dry chemical, carbon dioxide or appropriate foam.
- For small fires, use media such as "alcohol" foam, dry chemical or carbon dioxide.
- For large fires, apply water from as far as possible. Use large quantities of water applied as a mist or spray. Solid streams
- of water may be ineffective. Cool affected containers with flooding quantities of water.

5.2 Special precautions for fire-fighters

- **Protective Equipment:** Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and
- eyes.

5.3 Special hazards arising from the substance or mixture

- Carbon oxides, Nitrogen oxides (NO_x), Sulphur oxides, Hydrogen chloride gas.

Section 6: Accidental Release Measures

6.1 Person-related safety precautions

- Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources
- of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors
- can accumulate in low areas.

6.2 Measures for environmental protection

- Prevent further leakage or spillage if safe to do so. Do not let enter drains. Discharge into the environment must be
- avoided.

6.3 Measures for containment and cleaning

- Contain spillage, and then collect with non-combustible absorbent material (eg. sand, diatomaceous earth, vermiculite).
- Place in a container for disposal according to local regulations. Pick up and arrange disposal

without creating dust. Sweep

- up and shovel. Keep in suitable, closed containers for disposal. Sweep up and shovel.

Contain spillage, and then collect

- with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local
- regulations (see section 13). Keep in suitable, closed containers for disposal.

Section 7: Handling and Storage

7.1 Handling

- Wear appropriate protective clothing and safety gloves.
- Avoid inhalation.
- Avoid contact with eyes, skin and clothing.
- Mechanical exhaust required.
- Keep away from ignition sources, heat and flame.
- No smoking at working site.
- **Incompatibilities:** Strong oxidizing agents, Strong acids. Handling and unloading should be light, to prevent packaging broken,
- damp and cause losses.
- Working place should be equipped with appropriate varieties and quantities of fire fighting equipment and leakage
- emergency treatment equipment.

7.2 Storage

- Store in cool place. Keep container tightly closed in a dry and well-ventilated place.
- Keep away from heat, sparks and flame.
- Keep away from sources of ignition.
- **Incompatible:** Strong oxidizing agents, Strong acids.
- Storage place should be equipped with appropriate varieties and quantities of fire fighting equipment and leakage
- emergency treatment equipment.

Section 8: Exposure Controls/Personal Protection

8.1 Engineering Controls

- Mechanical exhaust required. Safety shower and eye bath.

8.2 Personal Protective Equipment

- **Respiratory:** Government approved respirator if needed.
- **Eye/face:** Chemical safety goggles if needed.
- **Clothing:** Wear appropriate protective clothing.
- **Hand/skin:** Protective gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without
- touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in
- accordance with applicable laws and good laboratory practices. Wash and dry hands.
- **Body protection:** Wear suitable protective clothing according to the concentration and amount of the substance at the
- workplace.

8.3 Other Protect

- No smoking, drinking and eating at working site. Wash thoroughly after handling.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

- a) Physical state clear, liquid
- b) Color colorless
- c) Odor odorless
- **d) Melting point/freezing point** : Melting point: 10.31 °C
- **e) Initial boiling point and boiling range**: 290 °C-lit.
- **f) Flammability (solid,gas)**: No data available
- **g) Upper/lower flammability or explosive limits**: No data available
- **h) Flash point** : No data available
- **i) Autoignition temperature** : No data available
- **j) Decomposition temperature** : No data available
- **k) pH** : 1.2 at 5 g/l
- **l) Viscosity**: Viscosity, kinematic: No data available Viscosity, dynamic: 23 mPa.s at 20 °C
- **m) Water solubility**: soluble
- **n) Partition coefficient**: Not applicable for inorganic substances
- **o) Vapor pressure**: 1.33 hPa at 145.8 °C
- **p) Density** : 1.84 g/cm³ at 25 °C-lit.
- **Relative density** : No data available
- **q) Relative vapor density**: No data available
- **r) Particle characteristics**: No data available
- **s) Explosive properties** : No data available
- t) Oxidizing properties none

9.2 Other safety information

- Surface tension 55.1 mN/m at 20 °C
- **Relative vapor density**: 3.39-(Air = 1.0)

Section 10: Stability and Reactivity

10.1 Reactivity

- No data available

10.2 Chemical stability

- Stable under recommended storage conditions

10.3 Possibility of hazardous reactions

- No data available

10.4 Conditions to avoid

- Heat, flames and sparks

10.5 Incompatible materials

- Strong oxidizing agent, Light sensitive, Alcohols, Organic materials, Heavy metals, Powdered metals, Strong reducing agents, Amines, Mercaptans.

10.6 Hazardous decomposition products

- **Other decomposition products**: No data available
- **Hazardous decomposition products formed under fire conditions**: Carbon oxides,

Nitrogen oxides (NO_x), Sulphur oxides,
• Hydrogen chloride gas.

Section 11: Toxicological Information

11.1 Information on toxicological effects

- Acute toxicity
- LD50 Oral-Rat-male and female-2,140 mg/kg
- **Remarks:** (ECHA)
- **Inhalation:** No data available
- **Dermal:** No data available
- Skin corrosion/irritation
- Skin-Rabbit
- **Result:** Extremely corrosive and destructive to tissue.
- **Remarks:** (IUCLID)
- Serious eye damage/eye irritation
- **Remarks:** Causes serious eye damage.
- **Respiratory or skin sensitization:** No data available
- Germ cell mutagenicity
- **Test Type:** Ames test
- **Test system:** Salmonella typhimurium
- **Result:** negative
- **Remarks:** (HSDB)
- **Carcinogenicity:** No data available
- **Reproductive toxicity:** No data available
- **Specific target organ toxicity-single exposure:** No data available
- **Specific target organ toxicity-repeated exposure:** No data available
- **Aspiration hazard:** No data available

11.2 Additional Information

- **RTECS:** WS5600000
- Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm,
- inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema,
- burning sensation, Cough,wheezing, laryngitis, Shortness of breath, Headache, Nausea,Vomiting, Pulmonary edema.
- Effects may be delayed.
- To the best of our knowledge, the chemical, physical, and toxicological properties have not
- been thoroughly investigated.
- **After inhalation of aerosols:** damage to the affected mucous membranes. After skin contact: severe burns with formation
- **of scabs. After eye contact:** burns, corneal lesions.
- **After swallowing:** severe pain (risk of perforation!), nausea, vomiting and diarrhoea.
- After a latency period of several weeks possibly pyloric stenosis.
- Other dangerous properties can not be excluded.
- Handle in accordance with good industrial hygiene and safety practice.

Section 12: Ecological Information

12.1 Toxicity

- Toxicity to daphnia and other aquatic invertebrates
- static test EC50-Daphnia magna (Water flea)-> 100 mg/l-48 h
- (OECD Test Guideline 202)
- Toxicity to algae static test ErC50-Desmodesmus subspicatus (green algae)-> 100 mg/l-72 h
- (OECD Test Guideline 201)

12.2 Persistence and degradability:

- The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential: No data available

12.4 Mobility in soil: No data available

12.5 Results of PBT and vPvB assessment:

- PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties: No data available

12.7 Other adverse effects: Biological effects: Harmful effect due to pH shift.

Section 13: Disposal Considerations

13.1 Disposal methods

- Dispose of waste in accordance to applicable national, regional, or local regulations. Burn in a chemical incinerator
- equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed
- disposal company. Contact a licensed professional waste disposal service to dispose of this material.

13.2 Contaminated packaging

- Dispose in the same manner as unused product.

Section 14: Transport Information

- **RID/ADR:** Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.
- **IATA:** Non-Hazardous for Air Transport.
- **IMO:** Non-Hazardous for Sea Transport.

Section 15: Regulatory Information

This material safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008 and its amendments.

Section 16: Other Information

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This company shall not be held liable for any damage resulting from handling or from contact with the above product. This material must only be handled by suitably qualified experienced scientists in appropriately equipped and authorized facilities. The above information is believed to be correct but does not purport to be all inclusive and should be used as a guide only for

experienced personnel. Always consult your safety advisor and follow appropriate local and national safety legislation. The absence of warning must not, under any circumstance, be taken to mean that no hazard exists.

Last reviewed: 07/2026

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End Of MSDS