



For Research Use Only · Not for Human Consumption

**SECTION 1 — PRODUCT IDENTIFICATION**

Product Name	AICAR (Acadesine)
CAS Number	2627-69-2
Molecular Formula	C <sub>9</sub> H <sub>14</sub> N <sub>4</sub> O <sub>8</sub> P
Molecular Weight	338.21 g/mol
Catalog / SKU	VEL-AICAR
Intended Use	In vitro laboratory research only. Not for therapeutic, diagnostic, or human/veterinary use.
Supplier	Vial & Error Labs · www.vialanderrorlabs.com · info@vialanderrorlabs.com
Emergency Phone	+1-800-535-5053 (CHEMTREC — North America)
Issue / Revision	22 Feb 2026 - Revision 1.0 - Compliant with GHS Rev. 8 / OSHA HCS 29 CFR 1910.1200

**SECTION 2 — HAZARD IDENTIFICATION (GHS / OSHA HCS)**

GHS Classification	Not classified as hazardous per GHS criteria at research-grade quantities.
Signal Word	WARNING (precautionary for dust/powder handling)
Hazard Statements	H302: Harmful if swallowed (precautionary). H315/H319: May cause skin/eye irritation.
Precautionary Statements	P260: Do not breathe dust. P264: Wash hands after handling. P270: Do not eat, drink, or smoke when using this product. P280: Wear gloves/eye protection. P301+P312: IF SWALLOWED and unwell, call a POISON CENTER.
GHS Pictogram	GHS07 — Exclamation mark (general hazard)
HMIS Rating	Health 1 · Flammability 0 · Physical Hazard 0 · PPE B
Other Hazards	Peptide/compound of unknown acute toxicity in humans. Exercise standard laboratory precautions at all times.

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

Substance / Mixture	Pure substance
Chemical / IUPAC Name	AICAR (Acadesine)
CAS Number	2627-69-2
Molecular Formula	C <sub>9</sub> H <sub>14</sub> N <sub>4</sub> O <sub>8</sub> P
Molecular Weight	338.21 g/mol
Amino Acid Sequence	N/A (nucleotide analogue)
Nominal Purity	≥98% (HPLC)
Impurities / Additives	Trace residuals ≤2–5% by HPLC. No known hazardous impurities at research quantities.
EC Number	Not assigned (research compound)

**SECTION 4 — FIRST AID MEASURES**



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<b>Inhalation</b>	Remove person to fresh air. Rest in a position comfortable for breathing. If symptoms persist or breathing is difficult, seek immediate medical attention.
<b>Skin Contact</b>	Remove contaminated clothing and shoes immediately. Wash affected area thoroughly with soap and copious water for $\geq 15$ minutes. Seek medical attention if irritation develops or persists.
<b>Eye Contact</b>	Immediately flush eyes with large amounts of water for $\geq 15$ minutes, holding eyelids open. Remove contact lenses if easily possible. Seek urgent medical attention.
<b>Ingestion</b>	Rinse mouth with water. Do NOT induce vomiting unless directed by medical personnel. Give water to drink if conscious. Seek immediate medical attention. Provide this SDS to treating physician.
<b>Notable Symptoms</b>	Irritation of mucous membranes, skin, and eyes. No compound-specific antidote known.
<b>Medical Note</b>	Symptomatic and supportive treatment. No specific antidote. Provide treating physician with this SDS.

## SECTION 5 — FIRE-FIGHTING MEASURES

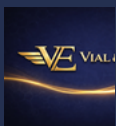
<b>Flash Point</b>	Not applicable (non-volatile lyophilized/crystalline solid)
<b>Autoignition Temperature</b>	Not determined
<b>Flammability Classification</b>	Not classified as flammable. May form combustible dust clouds in large quantities.
<b>Suitable Extinguishing Media</b>	Dry chemical, carbon dioxide (CO <sub>2</sub> ), water mist, or foam. Avoid solid water jets on burning material.
<b>Hazardous Combustion Products</b>	Carbon monoxide (CO), carbon dioxide (CO <sub>2</sub> ), nitrogen oxides (NO <sub>x</sub> ), hydrogen sulfide (if S-containing residues present).
<b>Special Protective Equipment</b>	Wear self-contained breathing apparatus (SCBA) and full protective clothing for firefighting.

## SECTION 6 — ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	Evacuate non-essential personnel. Wear full PPE (Sec. 8). Avoid inhalation of powder/dust. Ensure adequate ventilation before re-entering.
<b>Environmental Precautions</b>	Prevent discharge to drains, surface water, or groundwater. Notify relevant environmental authorities if large-scale release occurs.
<b>Containment &amp; Cleanup</b>	Carefully collect powder by sweeping or vacuuming with HEPA-filtered vacuum. Transfer to sealed, labeled waste containers for disposal per Sec. 13. Decontaminate area with water and detergent.
<b>Reference Sections</b>	See Section 7 (Handling/Storage), Section 8 (PPE), and Section 13 (Disposal) for further guidance.

## SECTION 7 — HANDLING AND STORAGE

<b>Safe Handling Precautions</b>	Handle under BSL-1 conditions minimum. Avoid generating aerosols or dust. Use in well-ventilated laboratory or fume hood. Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after handling.
<b>Recommended Storage Conditions</b>	-20°C, desiccated, protected from light



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<b>Container Requirements</b>	Keep in original sealed vial. Ensure container is tightly closed when not in use. Do not transfer to unlabeled secondary containers.
<b>Incompatible Materials</b>	Strong oxidizers, strong acids (pH <2), strong bases (pH >12). Avoid prolonged exposure to moisture, humidity, or UV light.
<b>Specific Use Restrictions</b>	For laboratory research use only. Not for resale to consumers or use in food, drug, medical device, or cosmetic products.
<b>Shelf Life</b>	24 months from manufacture date when stored as specified. Refer to lot-specific COA for confirmed expiry.

## SECTION 8 — EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>Occupational Exposure Limits</b>	No OSHA PEL, ACGIH TLV, or established OEL for this compound. Apply ALARP principle.
<b>Engineering Controls</b>	Laboratory fume hood or biosafety cabinet preferred. General dilution ventilation acceptable for small quantities.
<b>Respiratory Protection</b>	N95 or P100 particulate respirator when handling bulk powder or generating aerosols.
<b>Hand Protection</b>	Chemical-resistant gloves (nitrile, ≥0.1 mm thickness). Inspect for defects before each use. Change gloves immediately if contaminated.
<b>Eye / Face Protection</b>	Safety glasses with side shields minimum; chemical splash goggles for larger quantities or high-hazard operations.
<b>Skin / Body Protection</b>	Laboratory coat, long pants, and closed-toe footwear. Remove contaminated clothing immediately.
<b>Hygiene Measures</b>	Wash hands and forearms with soap and water before breaks, eating, or leaving the laboratory. Do not eat, drink, or smoke in laboratory areas.

## SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State</b>	Solid (lyophilized powder)
<b>Appearance</b>	White to off-white lyophilized powder
<b>Odor</b>	Odorless to very faintly characteristic
<b>pH (1% aq. solution)</b>	Approximately 4.0–8.0 (compound-dependent)
<b>Melting / Decomp. Pt.</b>	Decomposes on heating (no sharp melting point typical of peptides)
<b>Solubility</b>	Soluble in water (≥10 mg/mL); DMSO (≥5 mg/mL)
<b>Partition Coefficient</b>	Not determined
<b>Vapor Pressure</b>	Negligible at 20°C (non-volatile solid)
<b>Relative Density</b>	~1.2–1.5 g/cm <sup>3</sup> (estimated)
<b>Bulk Density</b>	~0.1–0.4 g/cm <sup>3</sup> (lyophilized, estimated)

## SECTION 10 — STABILITY AND REACTIVITY

<b>Chemical Stability</b>	Stable under recommended storage conditions. Lyophilized (dry) form is significantly more stable than aqueous solutions.
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<b>Conditions to Avoid</b>	Excessive heat (>40°C), moisture/humidity, direct light (especially UV), repeated freeze-thaw cycles, extremes of pH.
<b>Incompatible Materials</b>	Strong oxidizing agents, strong acids, strong bases, heavy metal ions (especially for Cys-containing peptides).
<b>Hazardous Decomposition</b>	Thermal decomposition may produce CO, CO <sub>2</sub> , NO <sub>x</sub> , and (if applicable) H <sub>2</sub> S or SO <sub>2</sub> .
<b>Hazardous Polymerization</b>	Will not occur under normal storage or handling conditions.
<b>Possibility of Hazardous Reactions</b>	None known under recommended conditions of use.

## SECTION 11 — TOXICOLOGICAL INFORMATION

<b>Acute Toxicity (oral)</b>	No data available for this specific compound. Treat as potentially harmful if ingested.
<b>Acute Toxicity (dermal)</b>	No data available. Avoid prolonged skin contact.
<b>Acute Toxicity (inhalation)</b>	No data available. Avoid inhalation of dust or aerosols.
<b>Skin / Eye Irritation</b>	Based on structural class analogues: mild to moderate irritant potential.
<b>Sensitization</b>	No data available. Some peptides may cause sensitization in susceptible individuals.
<b>Carcinogenicity</b>	Not listed by IARC, NTP, or OSHA as a confirmed or probable carcinogen.
<b>Reproductive / Dev. Tox.</b>	No data available. Use with appropriate caution.
<b>STOT</b>	No data available for single or repeated exposure.
<b>Aspiration Hazard</b>	Not applicable (solid).
<b>Key Human Disclaimer</b>	This compound has not been approved for human use. Toxicological profile in humans is NOT established. Intended for in vitro research only.

## SECTION 12 — ECOLOGICAL INFORMATION

<b>Aquatic Toxicity</b>	No data available. Treat as potentially harmful to aquatic organisms.
<b>Persistence &amp; Degradability</b>	Peptides/proteins are generally biodegradable under environmental conditions.
<b>Bioaccumulation</b>	Not expected based on molecular size and hydrophilicity.
<b>Mobility in Soil</b>	Data not available. Likely to bind to organic matter.
<b>PBT / vPvB Assessment</b>	Not assessed. Not expected to be PBT/vPvB based on structure.

## SECTION 13 — DISPOSAL CONSIDERATIONS

<b>Waste Disposal Method</b>	Dispose in accordance with all applicable local, state, federal, and international regulations. Treat as chemical waste.
<b>Contaminated Packaging</b>	Empty containers that have not been decontaminated should be treated as chemical waste. Clean, uncontaminated containers may be recycled per local regulations.
<b>Regulatory Basis</b>	US EPA 40 CFR Parts 261-268; EU Waste Framework Directive 2008/98/EC; local applicable regulations.



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## SECTION 14 — TRANSPORT INFORMATION

<b>UN Number</b>	Not regulated as dangerous goods for transport (research quantities).
<b>UN Proper Shipping Name</b>	Not regulated. Research chemical — not classified as hazardous material under DOT/IATA/IMDG for typical research quantities.
<b>Transport Hazard Class</b>	Not classified
<b>Packing Group</b>	Not applicable
<b>Environmental Hazard</b>	Not known to be a marine pollutant.
<b>Special Precautions</b>	Transport dry ice (if frozen). Ensure secondary containment. Comply with carrier requirements for biological research materials.

## SECTION 15 — REGULATORY INFORMATION

<b>OSHA HCS (US)</b>	This SDS prepared in compliance with OSHA Hazard Communication Standard 29 CFR 1910.1200 and GHS Revision 8.
<b>TSCA (US)</b>	Research-use chemical. Verify TSCA inventory status before commercial use.
<b>EU REACH</b>	Substances <1 tonne/year may be exempt from registration. User responsible for verifying applicable registration requirements.
<b>Controlled Substance Status</b>	Verify DEA/local scheduling status before ordering or using. Vial & Error Labs makes no representation regarding scheduling in any jurisdiction.
<b>Research Use Only Statement</b>	NOT approved by FDA or any regulatory authority for diagnostic, therapeutic, human, or veterinary use.

## SECTION 16 — OTHER INFORMATION

<b>Revision</b>	Rev 1.0 — Issued 22 Feb 2026
<b>Prepared By</b>	Vial & Error Labs Quality & Regulatory Compliance Team
<b>Key References</b>	GHS Rev. 8 (UN Purple Book); OSHA 29 CFR 1910.1200; NFPA 704; compound-specific primary literature
<b>Disclaimer</b>	The information in this SDS is believed to be correct and is provided in good faith as guidance for safe handling. Vial & Error Labs makes no warranty of merchantability or fitness for purpose. User assumes full responsibility for ensuring compliance with all applicable laws and regulations.
<b>Contact</b>	<a href="http://www.vialanderrorlabs.com">www.vialanderrorlabs.com</a> · <a href="mailto:info@vialanderrorlabs.com">info@vialanderrorlabs.com</a>