



Safety Data Sheet

SDS-BA-1023

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Prepared in accordance with Australian Work Health and Safety (Hazardous Chemicals) Regulations 2023 & GHS (7th Revision) | Issue Date: March 2026 | Rev: 1.0

HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to WHS Regulations and ADG Code.

Section 1 — Identification of the Substance and of the Company / Undertaking

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| Product Name | Creatine Monohydrate |
| IUPAC Name | 2-(carbamimidoyl-methyl-amino)acetic acid monohydrate |
| Other Names | Creatine hydrate; N-Methylguanidinoacetic acid monohydrate; Methylguanidoacetic acid monohydrate |
| Catalog No. | BA-1023 |
| CAS No. (Monohydrate) | 6020-87-7 |
| CAS No. (Anhydrous) | 57-00-1 |
| Molecular Formula | C ₄ H ₉ N ₃ O ₂ .H ₂ O |
| Intended Use | Biochemical reagent, energy metabolism research, cell culture supplement, ATP regenerating systems, sports nutrition ingredient, food supplement applications |
| Supplier | AuSaMicS Pty Ltd, 31 Longview CT, Thomastown VIC 3074, Australia |
| ABN | 56 676 640 467 |
| Phone | +61 412 520 598 |
| Email / Web | support@ausamics.com / www.ausamics.com.au |
| Emergency (24h) | Poisons Information Centre: 13 11 26 (Australia) |
| Poisons Schedule | Not Applicable |

Section 2 — Hazard Identification

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| GHS Classification | Skin Corrosion/Irritation Category 2 (H315). Serious Eye Damage/Eye Irritation Category 2A (H319). Specific Target Organ Toxicity — Single Exposure (Respiratory Tract Irritation) Category 3 (H335). Note: No skin sensitisation classification (differs from Taurine). |
| Signal Word | WARNING |



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| Hazard Statements | H315: Causes skin irritation. H319: Causes serious eye irritation. H335: May cause respiratory irritation. |
| Precautionary — Prevention | P261: Avoid breathing dust. P264: Wash thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, protective clothing, eye protection and face protection. |
| Precautionary — Response | P302+P352: IF ON SKIN: Wash with plenty of water. P304+P340: IF INHALED: Remove person to fresh air. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses. Continue rinsing. P312: Call Poisons Centre if unwell. P332+P313: If skin irritation occurs: Get medical advice. P337+P313: If eye irritation persists: Get medical advice. P362+P364: Take off contaminated clothing and wash before reuse. |
| Precautionary — Storage | P403+P233: Store in well-ventilated place; keep container tightly closed. P405: Store locked up. |
| Precautionary — Disposal | P501: Dispose of contents/container to authorised hazardous waste collection point per local regulations. |
| GHS Pictogram | GHS07 (Exclamation mark) — skin/eye irritant; respiratory irritant |
| Sensitisation Note | NOT classified as skin sensitiser (H317 does NOT apply to Creatine Monohydrate — contrast with Taurine) |
| Fire/Explosion Hazard | Combustible solid — burns with difficulty; organic dust finely divided in air may form explosive dust-air mixtures in confined spaces; minimise dust generation; keep away from ignition sources |

Section 3 — Composition / Information on Ingredients

| CAS No. | % Weight | Name | GHS Classification |
|---------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------|
| 6020-87-7 / 57-00-1 | >98% | Creatine Monohydrate / Creatine (C ₄ H ₉ N ₃ O ₂ .H ₂ O) | H315 · H319 · H335 |
| 60-27-5 | trace (solution equilibrium) | Creatinine (in solution, equilibrium product) | Contact allergen — see Section 11 |
| — | <2% | Moisture and trace impurities | Not classified at supplied levels |

Section 4 — First Aid Measures



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| Eye Contact | Wash out immediately with fresh running water. Ensure complete irrigation — keep eyelids apart. Seek medical attention without delay if pain persists or recurs. Contact lens removal after injury: skilled personnel only. |
| Skin Contact | Immediately remove all contaminated clothing including footwear. Flush skin and hair with running water and soap. Seek medical attention if irritation develops or persists. |
| Inhalation | Remove from contaminated area to fresh air. Lay patient down, keep warm and rested. Apply artificial respiration if not breathing (demand valve resuscitator or pocket mask). Transport to hospital without delay if symptomatic. |
| Ingestion | Give glass of water immediately. First aid generally not required (Oral LD50 rat >2000 mg/kg). Contact Poisons Centre (13 11 26) if in doubt or unwell. |
| Medical Note | Treat symptomatically. Not normally a hazard due to non-volatile nature. Note: Creatine supplementation in healthy persons may cause stomach upset, muscle cramps, and lower leg pain — inform physician of substance. |

Section 5 — Fire-Fighting Measures

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| Extinguishing Media | Foam; dry chemical powder; BCF (where regulations permit); CO ₂ |
| Fire Incompatibility | Avoid contamination with oxidising agents (nitrates, oxidising acids, chlorine bleaches, pool chlorine) — ignition risk |
| Fire/Explosion Hazard | Combustible solid which burns but propagates flame with difficulty. Organic dusts finely divided and suspended in air may form explosive dust-air mixtures. Avoid dust clouds in confined/unventilated spaces. Combustion products: CO, CO ₂ , NO _x , and other pyrolysis products. May emit poisonous and corrosive fumes. |
| Fire-Fighting PPE | SCBA plus protective gloves. Prevent spillage entering drains or water courses. Use water as fine spray to control fire and cool adjacent areas. |

Section 6 — Accidental Release Measures

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| Personal Precautions | Avoid breathing dust and contact with skin and eyes. Wear protective clothing, gloves, safety glasses and P2 dust respirator. Use dry clean-up procedures; avoid generating dust. |
| Environmental | Prevent entry into drains, waterways, or soil. DO NOT discharge to sewer or waterways. |



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| Minor Spills | Clean up immediately. Use dry clean-up — vacuum (HEPA) or damp cloth to avoid generating airborne dust. |
| Major Spills | Moderate hazard. Alert personnel. Alert Emergency Services if required. Wear full PPE. Vacuum/collect into sealed containers for disposal per Section 13. |

Section 7 — Handling and Storage

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| Safe Handling | Avoid skin contact and inhalation. Wear protective clothing when risk of exposure. Use in well-ventilated area. Prevent dust concentration in hollows and sumps. Organic powder — minimise airborne dust; eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame. Establish good housekeeping — vacuum dust accumulations regularly. |
| Storage | Store in original containers, securely sealed. Cool (15-25 °C), dry, well-ventilated area. Away from incompatible materials and foodstuff containers. |
| Container | Polyethylene or polypropylene container; check all containers clearly labelled and free from leaks. |
| Incompatibilities | Avoid reaction with oxidising agents (nitrates, chlorine bleaches, peroxides, oxidising acids) |

Section 8 — Exposure Controls / Personal Protection

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| OEL / TWA (Safe Work Australia) | No specific WES established for Creatine Monohydrate. Apply ALARA principle. |
| Engineering Controls | Local exhaust ventilation where dust generation possible. Fume hood for fine powder handling. Remove dust accumulations regularly by vacuuming. |
| Respiratory | P2 dust filter (AS/NZS 1716 & 1715) for routine powder handling. Type P filter of sufficient capacity for significant dust generation. |
| Eye / Face | Safety glasses with side shields (AS/NZS 1337.1); chemical goggles if splash risk |
| Hand Protection | Nitrile rubber, polychloroprene, or butyl rubber gloves (AS/NZS 2161). Personal hygiene key — wash after handling. |
| Body Protection | Lab coat or overalls; PVC apron for bulk handling; barrier cream; skin cleansing cream post-exposure |



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Hygiene

Wash all exposed skin thoroughly after handling. Do not eat, drink, or smoke during handling. Remove contaminated clothing before leaving workplace.

Section 9 — Physical and Chemical Properties

| Property | Value |
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| Physical state | Divided solid (crystalline powder) |
| Appearance | White to off-white crystals |
| Odour | Not available |
| pH (1% aqueous) | ~6.5–8.0 |
| Melting point | ~300 °C (decomposes) |
| Decomposition temperature | 303 °C |
| Boiling point | Not applicable |
| Flash point | Not available |
| Solubility in water | Partly miscible — ~13.3 mg/mL (1:75) at 20 °C; $K_b = 9.6 \times 10^{-12}$ at 20 °C |
| Molecular weight (monohydrate) | 149.15 g/mol |
| Molecular weight (anhydrous) | 131.14 g/mol |
| Water content | ~12.1% w/w |
| Vapour pressure | Not available |
| Vapour density (Air=1) | Not available |
| Flammability | Not applicable |
| Explosive properties | Not available |
| Oxidising properties | Not available |
| Solution note | In aqueous/alkaline solutions: equilibrium with creatinine. In acid solutions: predominantly creatinine. |

Section 10 — Stability and Reactivity

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| Reactivity | See Section 7 — incompatible with oxidising agents |
| Chemical Stability | Unstable in the presence of incompatible materials (oxidising agents). Stable as dry solid under recommended storage. In solution: converts to creatinine over time especially at elevated temperature or alkaline pH. |
| Hazardous Reactions | Hazardous polymerisation will not occur. Avoid contact with strong oxidising agents. |
| Conditions to Avoid | Heat, moisture, alkaline conditions (solution), oxidising agents, dust generation in confined spaces |
| Incompatible Materials | Oxidising agents: nitrates, chlorine bleaches, peroxides, oxidising acids |
| Hazardous Decomposition | Combustion products: CO, CO ₂ , NO _x , other pyrolysis products. May emit poisonous and corrosive fumes. |

Section 11 — Toxicological Information

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| Acute Oral Toxicity | LOW — Oral (Rat) LD50: >2000 mg/kg. Not classified for acute oral toxicity. |
| Acute Dermal Toxicity | LOW — Dermal (Rat) LD50: >2000 mg/kg. Not classified for acute dermal toxicity. |
| Skin Irritation | H315 — Causes skin irritation (Category 2). May cause inflammation of skin on contact. May accentuate pre-existing dermatitis. |
| Eye Irritation | H319 — Causes serious eye irritation (Category 2A). This material causes serious eye irritation. |
| Skin Sensitisation | NOT CLASSIFIED — classification criteria not met (contrast with Taurine which carries H317). |
| Respiratory STOT | H335 — Respiratory tract irritation (Category 3). May cause respiratory irritation. Asthma-like symptoms possible (RADS). Persons with impaired respiratory function may incur further disability. |
| Mutagenicity | Not classified — criteria not met |
| Carcinogenicity | Not classified — criteria not met. Not listed by IARC or NTP. |
| Reproductive Toxicity | Not classified — criteria not met |
| STOT Repeated Exposure | Not classified — criteria not met |



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| Industrial Production Note | Industrial creatine production may generate contaminants (dicyandiamide, dihydrotriazine). Substances originating from cow tissue involved — theoretical BSE risk cannot be fully ruled out in industrially produced creatine. |
| Supplementation Note | Healthy persons taking creatine as supplement have experienced stomach upset and muscle cramps — generally considered safe. Creatine may cause lower leg pain (anterior compartment pressure increase) at rest or after exercise. |
| Creatinine (impurity) | May form contact allergies (cell-mediated T-lymphocyte delayed-type reaction) in predisposed individuals. Contact eczema, urticaria, or Quincke's oedema possible. |

Section 12 — Ecological Information

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| Aquatic Toxicity (Algae) | EC50 (algae, 72h): >100 mg/L (ECHA) |
| Aquatic Toxicity (Crustacea) | EC50 (Crustacea, 48h): >880 mg/L (ECHA) |
| Aquatic Toxicity (Fish) | NOEC(ECx) Fish 96h: >=84.6 mg/L; LC50 Fish 96h: >84.6 mg/L (ECHA). Low acute aquatic toxicity. |
| Persistence (Water/Soil) | LOW persistence — creatine biodegrades |
| Persistence (Air) | LOW |
| Bioaccumulation (Creatine) | LOW — LogKOW = -3.7217 |
| Bioaccumulation (Creatinine) | LOW — LogKOW = -1.76 |
| Mobility in Soil (Creatine) | MEDIUM — Log KOC = 3.325 |
| Mobility in Soil (Creatinine) | LOW — Log KOC = 19.14 |
| Environmental Precaution | DO NOT discharge into sewer or waterways despite low aquatic toxicity. |

Section 13 — Disposal Considerations

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| Waste Classification | General chemical/laboratory waste. Consult local, state, and federal regulations. |
| Disposal Method | Material may be recycled if unused and uncontaminated. Disposal options: burial in licensed chemical/pharmaceutical waste landfill; or incineration in licensed apparatus after admixture with suitable combustible material. |



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| Liquid Waste | DO NOT allow wash water to enter drains. Collect for treatment before disposal. |
| Drain Disposal | Disposal to sewer subject to local laws. Contact responsible authority if in doubt. |
| Containers | Decontaminate empty containers. Observe all label safeguards until containers cleaned and destroyed. |

Section 14 — Transport Information

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| UN Number | Not regulated — Not a Dangerous Good |
| ADG (Australia) | NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS |
| IATA / ICAO | NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS |
| IMDG / Sea | NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS |
| Marine Pollutant | NO |
| HAZCHEM | Not Applicable |

Section 15 — Regulatory Information

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| AIIC (Australia) | Listed on Australian Inventory of Industrial Chemicals (AIIC) — CAS 57-00-1 (creatine); CAS 6020-87-7 (monohydrate) |
| Creatinine AIIC | CAS 60-27-5 — listed on AIIC |
| SUSMP (Poisons Schedule) | Not Applicable |
| WHS Regulations | Classified as hazardous chemical under WHS (Hazardous Chemicals) Regulations 2023 — H315, H319, H335 |
| Australia — Non-Industrial Use | Yes (AIIC) |
| Canada — DSL | Yes |
| Canada — NDSL | No (creatine; creatinine) |
| Europe — EINECS/ELINCS | Yes |
| USA — TSCA | Active (TSCA Inventory) |



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| New Zealand — NZIoC | Yes |
| Japan — ENCS | Yes |
| Korea — KECI | Yes |
| China — IECSC | Yes |
| Mexico — INSQ | No (creatine) |
| Taiwan — TCSI | Yes |
| Russia — FBEPH | Yes |
| Ph. Eur. Monograph | Creatine Monohydrate monograph — Ph. Eur. / BP |

Section 16 — Other Information

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|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SDS Prepared By | AuSaMicS Pty Ltd — Technical & Quality Department |
| Issue Date | March 2026 · Rev 1.0 |
| Review Date | March 2027 or upon regulatory change |
| Based On | CCC Ingredients Pty Ltd SDS Chemwatch 17430-1 Version 6.1 (20/06/2022); ECHA Registered Substances; RTECS |
| WHS Reference | Work Health and Safety (Hazardous Chemicals) Regulations 2023 (Cth/States) |
| GHS Reference | GHS 7th Revised Edition |
| CAS Numbers | CAS 6020-87-7 (monohydrate); CAS 57-00-1 (anhydrous); CAS 60-27-5 (creatine) |
| Key References | Lanhers C. et al. (2017) Sports Med 47:163; Eppenberger H.M. et al. (1967) Dev Biol 15:361; ECHA REACH registration data; Safe Work Australia WES guidelines |

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