5-Amino-1-MQ

CAS: 685079-15-6
Formula: C10H11N2+

Document ID: f6cfd40f
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Version: 1.0

Section 1 — Product and Company Identification

Product Name	5-Amino-1-MQ
Synonyms	5-amino-1-methylquinolinium; 685079-15-6; PMX593N4N3
CAS Number	685079-15-6
Molecular Formula	C10H11N2+
IUPAC Name	1-methylquinolin-1-ium-5-amine
Identified Uses	Research laboratory chemical for in vitro scientific research and development use only.
Restriction on Use	Not for human or veterinary use. Not for food, drug, cosmetic, household, agricultural, clinical, therapeutic, or diagnostic applications.

Manufacturer / Supplier

Company	Ruo.bio
Address	30 N Gould St, Sheridan, WY 82801, US
Phone	+1-804-636-6879
Website	https://ruo.bio/
Emergency Phone	+1(804)636-6879 - Monday-Friday: 9:00 AM - 5:00 PM Pacific

Section 2 — Hazard Identification

Classification of the substance

Not classified based on currently available data; however, data is limited and hazards cannot be fully characterized. The absence of classification should not be interpreted as a determination of the absence of hazard.

Classification has been conducted in accordance with 29 CFR 1910.1200 (OSHA HazCom 2012) and GHS Rev.8 using all available data and scientifically valid weight-of-evidence approaches (GHS Rev.8 Chapter 1.3.2.4), including read-across from chemical class and structural considerations where substance-specific study data is not available.

Signal Word: **None**

GHS Pictograms:
None required based on classification.

Hazard Statements
None. This substance is not classified for any GHS hazard class based on available data.

Precautionary Statements

- P261: Avoid breathing dust, fume, gas, mist, vapors, or spray.
- P264: Wash hands and exposed skin thoroughly after handling.
- P280: Wear protective gloves, protective clothing, and eye/face protection.
- P501: Dispose of contents and container in accordance with local, regional, national, and international regulations.

Precautionary statements are provided as best practice for handling substances with limited toxicological data, and are not a declaration of GHS classification.

Hazards Not Otherwise Classified (HNOC)
None known based on available data and weight-of-evidence assessment. The toxicological properties of this substance have not been fully characterized; handle as a potentially bioactive substance of unknown toxicity.

Section 3 — Composition / Information on Ingredients

Single-substance product. Chemical identity:

Ingredient	CAS Number	Mol. Formula	Mol. Weight	Concentration
5-Amino-1-MQ	685079-15-6	C10H11N2+	159.21 g/mol	>98% (research grade)

Impurities
No hazardous impurities known to be present above the GHS classification thresholds specified in 29 CFR 1910.1200 Appendix A. Residual synthesis reagents, solvents, and counter-ions may be present at levels consistent with research-grade (>98% purity) material. Balance: non-hazardous impurities. Refer to the accompanying Certificate of Analysis (CoA) for the lot-specific impurity profile.

Section 4 — First Aid Measures

Eye Contact
Rinse cautiously with water for several minutes. If irritation persists, seek medical advice.

Skin Contact
Wash with soap and water. Remove contaminated clothing and wash before reuse. If irritation persists, seek medical advice.

Inhalation
Move affected person to fresh air. If symptoms develop, seek medical advice.

Ingestion
Rinse mouth thoroughly with water. If large amounts are swallowed or if symptoms develop, seek medical advice. Do not induce vomiting unless directed by medical personnel.

Note to Physician
Treat symptomatically. No specific antidote known.

Section 5 — Fire Fighting Measures

Flash Point: *Not determined*

Suitable Extinguishing Media
Use extinguishing media appropriate to the surrounding fire conditions. Carbon dioxide (CO2), dry chemical powder, foam, or water spray.

Special Hazards
May produce toxic gases upon combustion. Carbon monoxide and other combustion products may be generated.

Protective Equipment for Firefighters
Wear self-contained breathing apparatus (SCBA) and full protective gear. Do not enter fire area without proper protective equipment.

Section 6 — Accidental Release Measures

Personal Precautions
Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Use personal protective equipment as described in Section 8.

Environmental Precautions
Prevent further leakage or spillage if safe to do so. Do not allow the product to enter drains, sewers, or waterways.

Containment and Cleanup
Sweep up and shovel. Keep in suitable, closed containers for disposal. Avoid raising dust. Clean contaminated surface thoroughly. Dispose of waste in accordance with local regulations (see Section 13).

Section 7 — Handling and Storage

Handling Precautions
Handle only in well-ventilated areas, preferably within a certified chemical fume hood or local exhaust ventilation, to minimize the generation of and exposure to airborne dust. Because the toxicological profile of 5-amino--1-methylquinolinium (CAS 685079-15-6) has not been fully characterized, treat it as a potentially bioactive substance of unknown toxicity and apply the precautionary principle described in OSHA 29 CFR 1910.1450 (Appendix A) and the ACGIH/NIOSH hierarchy of controls. Wear appropriate personal protective equipment, including chemical-resistant gloves (e.g., nitrile), safety goggles meeting ANSI Z87.1, and a laboratory coat; use a NIOSH-approved particulate respirator (e.g., N95 or higher) if powder handling could generate dust outside of engineering controls. Avoid inhalation, ingestion, and contact with skin, eyes, and clothing. Do not eat, drink, smoke, or apply cosmetics in areas where this substance is handled. Use non-sparking tools and antistatic equipment when transferring the dry solid, as finely divided organic powders can present a dust-explosion hazard per NFPA 654 guidance. Weigh and manipulate quantities using closed or semi-closed containment where feasible to limit dispersion. Wash hands, forearms, and face thoroughly with soap and water after handling and before leaving the work area. Promptly clean up spills using HEPA-vacuum or wet-wipe methods rather than dry sweeping, and segregate contaminated waste for disposal in accordance with EPA RCRA (40 CFR 260-273) and any applicable state or local regulations. Empty containers may retain residue; handle them with the same precautions as the filled container until decontaminated.

Storage Conditions

Store the substance tightly closed in its original, clearly labeled container in a cool, dry, well-ventilated location away from direct sunlight, heat sources, and ignition sources, in accordance with OSHA 29 CFR 1910.1450 and general good laboratory practice. As a quinolinium salt bearing a primary aromatic amine, the compound is potentially sensitive to air, moisture, and light; protection from atmospheric moisture (e.g., desiccated, inert-atmosphere storage where practical) and from light (amber glass or foil-wrapped containers) is recommended to preserve identity and purity. Refer to the manufacturer's certificate of analysis for any specific recommended storage temperature, as an authoritative temperature specification is not available from OSHA, NIOSH, EPA, ECHA, or PubChem for this CAS number. Keep separated from incompatible materials (see below) and store in a secondary containment tray made of compatible material to capture any leakage. Limit access to trained personnel and maintain an up-to-date inventory. Storage areas should be equipped with spill-control materials, eyewash, and safety shower per ANSI Z358.1. Do not store with food, feed, or pharmaceuticals.

Incompatibilities

Avoid contact with strong oxidizing agents (e.g., peroxides, perchlorates, nitrates, chlorates, permanganates, concentrated nitric acid), which can react vigorously with organic amines and N-alkylated heteroaromatic cations and may generate toxic nitrogen oxides (NOx) and other hazardous decomposition products on thermal decomposition, as noted in general guidance under OSHA's Hazard Communication Standard (29 CFR 1910.1200) and NFPA 704 for amine-containing organics. Avoid strong bases, which may deprotonate the primary aromatic amine or react with the quinolinium cation (strong nucleophiles such as hydroxide can add to the electrophilic C2 position of N-alkylquinolinium salts). Avoid acid chlorides, acid anhydrides, isocyanates, aldehydes, and other electrophilic acylating/alkylating agents, which can react with the primary aromatic amine functionality. Keep away from open flames, hot surfaces, and other ignition sources, since combustion of organic nitrogen compounds can release CO, CO2, and NOx. Note: as supplied, this cation will be associated with a counterion (e.g., halide, tosylate); consult the specific salt form's certificate of analysis for additional incompatibilities related to the counterion. No specific reactivity data for 5-amino-1-methylquinolinium (CAS 685079-15-6) are catalogued in NIOSH, ECHA, or PubChem; the incompatibilities listed above are based on the known reactivity of the primary aromatic amine and N-methylquinolinium functional groups.

Section 8 — Exposure Controls / Personal Protection

Exposure Limits

No regulatory occupational exposure limits (OEL) have been established by OSHA, ACGIH, NIOSH, or equivalent bodies for 5-amino-1-methylquinolinium (CAS 685079-15-6). No biological exposure indices (BEIs) have been established. Control exposure to the lowest level reasonably achievable (ALARA) using the engineering controls and PPE specified below. Handle as a potentially bioactive substance of unknown toxicity.

Engineering Controls

Use only in a well-ventilated area. Handle within a certified chemical fume hood, ventilated enclosure, or glovebox to minimize airborne exposure to dusts, aerosols, or mists, consistent with the hierarchy of controls described in OSHA 29 CFR 1910.1450 (Laboratory Standard) and the NRC publication 'Prudent Practices in the Laboratory' (2011). Provide local exhaust ventilation at points of dust/aerosol generation (e.g., weighing, transfer, reconstitution). Maintain face velocity of fume hoods per ANSI/AIHA Z9.5. Ensure ready access to emergency eyewash and safety shower meeting ANSI/ISEA Z358.1 in the work area. Closed-system handling is preferred when weighing dry solids; use HEPA-filtered balance enclosures where available. Decontaminate work surfaces and equipment after use.

Personal Protective Equipment

Respiratory Protection: Respiratory protection is not normally required when handling small quantities within a properly functioning chemical fume hood. If airborne dust, mist, or aerosol may be generated outside containment, or for operations involving weighing or handling of the dry solid in open air, use a NIOSH-approved (42 CFR Part 84)

air-purifying respirator equipped with N95 or P100 particulate filters at minimum. For higher-exposure tasks or unknown airborne concentrations, use a powered air-purifying respirator (PAPR) with HEPA filters or supplied-air respirator. Respirator selection, fit-testing, medical clearance, and use must comply with the OSHA Respiratory Protection Standard (29 CFR 1910.134).

Hand Protection: Wear chemically resistant gloves compliant with EN ISO 374-1 / ASTM F739. Nitrile rubber gloves of minimum 0.11 mm (4 mil) thickness are recommended for incidental contact; double-glove (>=8 mil nitrile) for direct handling of the neat solid or concentrated solutions. Because specific permeation data for 5-amino-1-methylquinolinium are not available in the published literature, follow ALARA: inspect gloves before use, replace immediately if torn, punctured, or contaminated, and remove gloves using proper aseptic technique to avoid skin contact. Wash hands thoroughly with soap and water after removing gloves, in accordance with 29 CFR 1910.138.

Eye / Face Protection: Wear tight-fitting chemical splash goggles meeting ANSI/ISEA Z87.1 (as required by 29 CFR 1910.133) whenever handling this substance. A full-face shield worn over goggles is recommended for operations with splash, spray, or aerosol potential, or when handling larger quantities outside a fume hood. Do not wear contact lenses when working with this material.

Skin Protection: Wear a long-sleeved laboratory coat or chemical-resistant lab gown that fully covers the arms and torso, full-length pants, and closed-toe chemical-resistant footwear in accordance with 29 CFR 1910.132 and 'Prudent Practices in the Laboratory' (NRC, 2011). For operations with splash potential or handling of bulk quantities, wear an impervious chemical-resistant apron or coverall (e.g., polyethylene-coated or laminate fabric). Remove and decontaminate or properly dispose of contaminated clothing before reuse; do not take contaminated clothing home. Wash exposed skin promptly with soap and water following any handling event.

Section 9 — Physical and Chemical Properties

Physical State	Solid (research-grade lyophilised powder or crystalline solid)
Appearance	Solid (appearance not fully characterized in authoritative sources; likely crystalline solid typical of quinolinium salts)
Odor	Not available.
Odor Threshold	Not available.
Boiling Point	*Not determined*
Melting Point	*Not determined*
Flash Point	*Not determined*
Auto-ignition Temperature	No data available.
Decomposition Temperature	No experimental data available.
Vapor Pressure	*Not determined*
Vapor Density	*Not determined*
Specific Gravity	*Not determined*
Partition Coefficient (log Kow)	No experimental data available.
Solubility	*Not determined*
Stability in Solution	Subject to hydrolytic and oxidative degradation typical of the chemical class; store reconstituted solutions refrigerated or frozen, protect from light, and use within the stability window indicated on the Certificate of Analysis.
pH	*Not determined*
Molecular Weight	159.21 g/mol

Molecular Formula	C10H11N2+

Section 10 — Stability and Reactivity

Chemical Stability: Stable under normal conditions of use, storage, and transport.

Conditions to Avoid: Excessive heat, open flames, sparks, incompatible materials.

Incompatible Materials: Avoid contact with strong oxidizing agents (e.g., peroxides, perchlorates, nitrates, chlorates, permanganates, concentrated nitric acid), which can react vigorously with organic amines and N-alkylated heteroaromatic cations and may generate toxic nitrogen oxides (NOx) and other hazardous decomposition products on thermal decomposition, as noted in general guidance under OSHA's Hazard Communication Standard (29 CFR 1910.1200) and NFPA 704 for amine-containing organics. Avoid strong bases, which may deprotonate the primary aromatic amine or react with the quinolinium cation (strong nucleophiles such as hydroxide can add to the electrophilic C2 position of N-alkylquinolinium salts). Avoid acid chlorides, acid anhydrides, isocyanates, aldehydes, and other electrophilic acylating/alkylating agents, which can react with the primary aromatic amine functionality. Keep away from open flames, hot surfaces, and other ignition sources, since combustion of organic nitrogen compounds can release CO, CO2, and NOx. Note: as supplied, this cation will be associated with a counterion (e.g., halide, tosylate); consult the specific salt form's certificate of analysis for additional incompatibilities related to the counterion. No specific reactivity data for 5-amino-1-methylquinolinium (CAS 685079-15-6) are catalogued in NIOSH, ECHA, or PubChem; the incompatibilities listed above are based on the known reactivity of the primary aromatic amine and N-methylquinolinium functional groups.

Hazardous Decomposition Products: Upon combustion or decomposition may produce: carbon monoxide (CO), carbon dioxide (CO2), nitrogen oxides (NOx).

Hazardous Polymerization: Will not occur.

Section 11 — Toxicological Information

The toxicological properties of this substance have not been fully characterized. Where no authoritative study data was identified, endpoint classifications are based on a weight-of-evidence approach using read-across from the compound's chemical class and structural features, per GHS Rev.8 Chapter 1.3.2.4. “Not classified” entries below mean “not classified based on currently available data” — hazards cannot be excluded.

Acute Toxicity: No acute toxicity values (oral, dermal, or inhalation LD50/LC50) for 5-amino-1-methylquinolinium (CAS 685079-15-6) are available in authoritative regulatory sources (ECHA, NIOSH, NTP, EPA, or peer-reviewed literature indexed in PubChem CID 950107). The toxicological properties of this substance are not fully characterized. In the absence of substance-specific data, acute toxicity is not classified based on currently available data; hazards cannot be excluded (GHS Rev.8, S1.3.2.4). As a low-molecular-weight cationic aromatic amine salt, exposure by ingestion, inhalation of dust, or skin/eye contact should be assumed to present potential hazard and minimized.

Skin Corrosion / Irritation: No experimental in vivo or in vitro skin irritation/corrosion data (e.g., OECD TG 404, 431, 439) are available in authoritative sources for this substance. Skin corrosion/irritation is not classified based on currently available data; hazards cannot be excluded. Handle as a potential skin irritant and avoid direct dermal contact.

Serious Eye Damage / Irritation: No experimental eye irritation or serious eye damage data (e.g., OECD TG 405, 437, 492) for 5-amino-1-methylquinolinium are available in authoritative sources. Serious eye damage/eye irritation is not classified based on currently available data; hazards cannot be excluded. As a cationic quinolinium salt, dust or solution contact with the eye should be assumed to cause mechanical and/or chemical irritation and avoided.

Skin / Respiratory Sensitization: No data from authoritative sources (ECHA, NTP, peer-reviewed LLNA/GPMT studies) addressing skin or respiratory sensitization for this substance have been identified. Aromatic primary amines as a structural class are recognized by ECHA and the scientific literature as a structural alert for skin sensitization, but no substance-specific testing has been reported for CAS 685079-15-6. Sensitization is therefore not classified based on currently available data; hazards cannot be excluded. Avoid repeated or prolonged skin contact.

Germ Cell Mutagenicity / Genotoxicity: Not classified based on currently available data; hazards cannot be excluded. Weight-of-evidence assessment applied using read-across from chemical class and structural considerations (GHS Rev.8 Chapter 1.3.2.4); no authoritative substance-specific study data identified.

Carcinogenicity: 5-Amino-1-methylquinolinium (CAS 685079-15-6) is not listed by IARC, the U.S. National Toxicology Program (NTP) Report on Carcinogens, OSHA (29 CFR 1910 Subpart Z), ACGIH, or the EPA IRIS database. No carcinogenicity bioassays for this specific substance are available in the peer-reviewed literature. Carcinogenicity is not classified based on currently available data; hazards cannot be excluded. Note that aromatic primary amines are, as a chemical class, recognized by IARC and ECHA as containing carcinogenicity structural alerts; substance-specific genotoxicity and carcinogenicity testing has not been published.

Reproductive Toxicity: No reproductive toxicity, developmental toxicity, or fertility studies (e.g., OECD TG 414, 416, 421, 422, 443) for 5-amino-1-methylquinolinium are available in authoritative sources (ECHA, NTP, EPA). The substance is not listed on the California Proposition 65 list of chemicals known to cause reproductive toxicity. Reproductive toxicity is not classified based on currently available data; hazards cannot be excluded. Effects on or via lactation have likewise not been characterized.

Specific Target Organ Toxicity (STOT): No specific target organ toxicity studies following single (STOT-SE) or repeated (STOT-RE) exposure have been reported in authoritative sources for 5-amino-1-methylquinolinium (CAS 685079-15-6); no NOAEL/LOAEL values from subacute, subchronic, or chronic (OECD TG 407, 408, 409, 411, 413) studies are available. STOT-SE and STOT-RE are not classified based on currently available data; hazards cannot be excluded. The toxicological profile of this substance is not fully characterized, and exposures should be minimized in accordance with the hierarchy of controls.

Aspiration Hazard: Not classified based on currently available data; hazards cannot be excluded. Weight-of-evidence assessment applied using read-across from chemical class and structural considerations (GHS Rev.8 Chapter 1.3.2.4); no authoritative substance-specific study data identified.

Derived No-Effect Level (DNEL): No data available — no substance-specific DNEL has been derived.

Predicted No-Effect Concentration (PNEC): No data available — no substance-specific PNEC has been derived.

Section 12 — Ecological Information

No authoritative substance-specific ecotoxicity study data was identified. In the absence of experimental data, adverse environmental effects cannot be fully excluded.

Ecotoxicity: No substance-specific experimental aquatic toxicity data (e.g., fish LC50, Daphnia EC50, algal ErC50) have been identified for 5-amino-1-methylquinolinium (CAS 685079-15-6) in authoritative databases including PubChem (CID 950107), U.S. EPA CompTox, or ECHA. The substance is a permanently charged quaternary nitrogen cation (quinolinium), and cationic organic species can interact with negatively charged biological membranes and environmental surfaces; however, in the absence of measured endpoints, a quantitative hazard determination cannot be made. Not classified as hazardous to the aquatic environment based on weight-of-evidence assessment (no authoritative experimental data identified). Prevent release to surface water, drains, or soil.

Persistence and Degradability: No substance-specific experimental biodegradation studies (e.g., OECD 301 series) or hydrolysis/photolysis half-life data have been identified for this compound in authoritative sources. Because the molecule contains an aromatic heterocyclic quinolinium ring system with a permanent positive charge on nitrogen, ready biodegradability cannot be assumed; quinoline-related aromatic N-heterocycles are reported in peer-reviewed literature to be only slowly degraded by specialized microbial consortia. No substance-specific experimental data identified to assign a definitive persistence classification.

Bioaccumulative Potential: No experimentally determined bioconcentration factor (BCF) or measured n-octanol/-water partition coefficient (log Kow) for 5-amino-1-methylquinolinium has been identified in PubChem, EPA CompTox, or ECHA dossiers. As a permanently ionized quaternary quinolinium cation, significant partitioning into lipid phases is generally not expected, but this read-across is not a substitute for measured data. No substance-specific experimental data identified to assign a bioaccumulation classification.

Mobility in Soil: No substance-specific experimental data identified.

Other Adverse Effects: No other adverse environmental effects identified. The substance is not included on the Montreal Protocol list of ozone-depleting substances.

Section 13 — Disposal Considerations

Dispose of contents and container in accordance with all local, state, and federal regulations. Do not dispose of this material into sewers or waterways. Contact a licensed waste disposal company for disposal guidance.

US: Dispose in accordance with 40 CFR Parts 261-270 (RCRA). **EU:** Dispose according to Directive 2008/98/EC (Waste Framework Directive).

Section 14 — Transport Information

DOT (US)	Not regulated as dangerous goods under DOT (49 CFR) based on current classification.
IATA	Not regulated as dangerous goods under IATA Dangerous Goods Regulations based on current classification.
IMDG	Not regulated as dangerous goods or as a marine pollutant under the IMDG Code based on current classification.
UN Number	Not applicable.

Transport classifications above are based on the substance's intrinsic hazard classification; the shipper must independently verify the classification, packaging, labelling, and documentation requirements for their specific shipment configuration, quantity, and carrier (including airline policies) prior to dispatch.

Section 15 — Regulatory Information

United States

TSCA (Toxic Substances Control Act): May be eligible for exemption from TSCA inventory listing requirements under the R&D provisions of 40 CFR 720.36, depending on actual conditions of use. This substance is supplied solely for use in scientific research and development in small quantities; it is not intended for, and shall not be used for, any commercial manufacturing, processing, or distribution in commerce. The importer/end user is responsible for confirming that the R&D exemption criteria are met for their specific use. **OSHA HazCom 2012:** This SDS was prepared in accordance with 29 CFR 1910.1200 (HazCom 2012), aligned with the Globally Harmonized System (GHS) Rev. 8. **CERCLA / SARA Title III:** Not listed as a CERCLA Hazardous Substance (40 CFR 302.4); not subject to SARA 313 reporting based on available classification data. Users must independently verify applicability for their facility.

European Union

REACH (EC 1907/2006): Supplied solely for Scientific Research and Development (SR&D) use in quantities below 1 tonne per year per legal entity. Where applicable, this use may be exempt from REACH registration obligations

under the scientific research and development provisions of REACH Article 3(23) and the conditions of Article 26(3); importers/users should independently verify the applicable exemption pathway for their specific use. If the substance is used as part of a formally notified Product and Process Oriented Research and Development (PPORD) programme, the separate notification procedure under REACH Article 9 (with a 5-year exemption renewable once) may apply instead. **CLP (EC 1272/2008):** Not classified under CLP based on available data; no harmonized classification entry identified in Annex VI of CLP or the ECHA Classification and Labelling (C&L) Inventory.

Canada

WHMIS 2015 / HPR: Not classified as a hazardous product under the Hazardous Products Act and Hazardous Products Regulations (SOR/2015-17) based on available data and weight-of-evidence assessment. Supplied for laboratory research use only. **DSL/NDSL:** Research-use exemption applies; substance is not intended for commercial import or manufacture in Canada.

Note: The regulatory statements above reflect the intended use of this substance for scientific research and development only and do not constitute a legal determination of regulatory status. If the substance is used outside the R&D exemption scope, users are solely responsible for independently verifying applicable regulatory obligations (TSCA, REACH, WHMIS, state, and local) for their specific use and jurisdiction prior to any such use.

Section 16 — Other Information

Document ID	f6cfd40f-c54a-48ac-bcd0-39c572613e99
Revision Date	2026-08-13
Version	1.0
Prepared By	Prepared in accordance with GHS Rev.8 and OSHA HazCom 2012 (29 CFR 1910.1200). Independent review by a qualified chemical safety professional is recommended prior to use.

Revision History

Revision date: 2026-08-13
Version: 1.0
Change description: Initial issue. Document prepared in 16-section GHS Rev.8 / OSHA HazCom 2012 format.

Sources Used

- PubChem (U.S. National Library of Medicine / NCBI) — https://pubchem.ncbi.nlm.nih.gov
- Peer-reviewed chemistry and toxicology literature (class-based read-across and weight-of-evidence assessment per GHS Rev.8 Chapter 1.3.2.4)
- OSHA HazCom 2012 / 29 CFR 1910.1200 Appendix A–C; GHS Rev.8; OECD Test Guidelines

Key to Abbreviations

CAS = Chemical Abstracts Service; GHS = Globally Harmonized System of Classification and Labelling of Chemicals; OSHA = U.S. Occupational Safety and Health Administration; HazCom = Hazard Communication Standard; REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals; CLP = Classification, Labelling and Packaging Regulation; TSCA = Toxic Substances Control Act; WHMIS = Workplace Hazardous Materials Information System; OEL = Occupational Exposure Limit; PEL = Permissible Exposure Limit; TLV = Threshold Limit Value; REL = Recommended Exposure Limit; STOT = Specific Target Organ Toxicity; LD50 = Median Lethal Dose; LC50 = Median Lethal Concentration; PPE = Personal Protective Equipment; SCBA = Self-Contained Breathing Apparatus; R&D = Research and Development.

Disclaimer

DISCLAIMER: The information in this Safety Data Sheet is compiled from the authoritative sources cited above, supplemented by weight-of-evidence assessment based on the compound's chemical class and published literature. It is believed to be accurate as of the revision date but is provided "as is" without warranty of any kind, express or implied, including fitness for a particular purpose. The preparer of this document has not independently tested the substance described herein. Users bear sole responsibility for verifying all information, ensuring safe handling, and compliance with all applicable federal, state, provincial, and local regulations. This SDS is not a substitute for independent chemical safety assessment by a qualified professional. This product is intended for scientific research and development use only and is not for human consumption, drug, food, cosmetic, agricultural, or household use.

This SDS complies with GHS Revision 8 / UN GHS Rev.8 and OSHA HazCom 2012 (29 CFR 1910.1200).