SAFETY DATA SHEET

Ethylene carbonate (EC)

SECTION 1: IDENTIFICATION

Product identifier: Ethylene carbonate

Other identifier: EC

CAS number: 96-49-1

Recommended use: Solvent, electrolyte component in lithium-ion batteries

Restrictions on use: Only for uses supported by the supplier’s product specification and applicable regulatory status.

Supplier: Automat Solutions, Inc.

U.S. address: 2100 Williams St, San Leandro, CA 94577, United States.

U.S. telephone: +1 (510) 982-6488.

Email: contact@automatsoln.com.

Emergency telephone: +1 (510) 982-6488.

SECTION 2: HAZARD IDENTIFICATION

GHS classification: Acute toxicity (oral), Category 4.

GHS classification: Eye irritation, Category 2A.

GHS classification: Specific target organ toxicity, repeated exposure, Category 2 (kidneys; oral).

Signal word: Warning.

Hazard symbols (named): GHS07 — Exclamation mark; GHS08 — Health hazard.

H302: Harmful if swallowed.

H319: Causes serious eye irritation.

H373: May cause damage to organs (kidneys) through prolonged or repeated exposure if swallowed.

P260: Do not breathe dust, fume, gas, mist, vapors or spray.

P264: Wash hands and exposed skin thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P280: Wear protective gloves, protective clothing, eye protection and face protection.

P301+P312+P330: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. Rinse mouth.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313: If eye irritation persists: Get medical advice or attention.

P314: Get medical advice or attention if you feel unwell.

P501: Dispose of contents and container through an approved waste disposal facility in accordance with applicable local, state and federal regulations.

Other hazards / hazards not otherwise classified: No additional information available.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Type: Substance.

Chemical name: Ethylene carbonate

Synonym / abbreviation: EC

CAS number: 96-49-1

Molecular formula: C3H4O3

Molecular weight: 88.06 g/mol

Composition declaration: 99–100%.

Hazardous impurities / stabilizers: No additional information available.

SECTION 4: FIRST AID MEASURES

Inhalation: Remove person to fresh air and keep comfortable for breathing. Obtain medical attention if symptoms occur or persist.

Skin contact: Immediately remove contaminated clothing. Rinse affected skin thoroughly with water or shower. Wash with soap and water. Obtain medical attention if irritation or rash occurs. Wash contaminated clothing before reuse.

Eye contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses if present and easy to do. Continue rinsing. Obtain medical attention if irritation persists.

Ingestion: Rinse mouth. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a POISON CENTER or doctor if you feel unwell; obtain advice after ingestion.

Most important acute and delayed effects: Harmful if swallowed. Causes serious eye irritation. May cause damage to organs (kidneys) through prolonged or repeated exposure if swallowed.

Medical attention / treatment: Treat symptomatically. Protect rescuers from exposure.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable / unsuitable extinguishing media: Water spray, alcohol-resistant foam, dry chemical or carbon dioxide, as appropriate to the surrounding fire. Do not direct a solid water jet at spilled liquid.

Specific hazards: Thermal decomposition may release hazardous gases. Avoid inhalation of fumes.

Hazardous combustion products: Carbon monoxide and carbon dioxide.

Firefighter protection: Wear self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance.

Additional precautions: Prevent contaminated firefighting runoff from entering drains and waterways.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions: Isolate the area. Keep unprotected personnel away. Ensure ventilation; avoid breathing dust, mist or vapor and avoid skin/eye contact. Wear the protection described in Section 8.

Emergency procedures: Evacuate the affected area when exposure cannot be controlled; trained responders only for significant releases.

Environmental precautions: Prevent entry into drains, sewers and waterways. Contain released material.

Containment / cleanup: Collect dry material carefully without generating dust into a compatible, closed, labeled waste container. Do not use methods that disperse dust.

Waste handling: Dispose of collected material and contaminated packaging according to Section 13.

SECTION 7: HANDLING AND STORAGE

Handling: Use suitable local exhaust ventilation. Avoid contact and inhalation. Wash after handling. Do not eat, drink or smoke in work areas.

Storage: Keep containers tightly closed in a dry, well-ventilated location away from incompatible substances. Protect from moisture.

Atmosphere / sensitivity: Store under dry inert gas where compatible with the supplier’s packaging and instructions; material is moisture-sensitive or hygroscopic as described in this SDS.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits: No substance-specific occupational exposure limit available in the source information. Apply exposure limits and workplace controls required by the applicable jurisdiction.

Engineering controls: Use local exhaust or a suitable fume hood. Provide an eyewash and safety shower near the work area.

Eye / face protection: Chemical safety goggles; use a face shield in addition to goggles when splashing or corrosive exposure is possible.

Hand protection: Wear chemical-resistant gloves selected for the chemical, exposure duration, temperature and task. Confirm permeation/breakthrough performance with the glove manufacturer; select gloves with a breakthrough time appropriate for the task.

Skin / body protection: Wear protective clothing suitable for the task. Prevent contamination of clothing and shoes.

Respiratory protection: Use a properly selected, fit-tested, NIOSH-approved respirator under a respiratory-protection program when engineering controls are insufficient. Cartridge/filter selection must address all relevant gases, vapors and particles. Unknown or immediately dangerous concentrations require appropriate supplied-air protection or SCBA.

Hygiene: Remove contaminated clothing and wash before reuse. Wash hands and exposed skin after handling.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Data basis: Reference values from available supplier and literature information. These values are not batch specifications; estimates and test conditions are identified where available.

Molecular formula: C3H4O3

Molecular weight: 88.06 g/mol

Appearance / physical state: Colorless crystalline solid; liquid above approximately 36 °C

Odor: Odorless

Odor threshold: No data available.

Melting / freezing point: 34–37 °C

Initial boiling point / boiling range: 248 °C at 1,013 hPa

Flammability: Not classified as flammable.

Lower / upper flammability limits: 3.6 / 16.1 vol%

Flash point: 143 °C, closed cup

Autoignition temperature: 465 °C

Decomposition temperature: No data available.

pH: 5.5–7.0 (88 g/L, 25 °C)

Kinematic viscosity: No data available.

Dynamic viscosity: No data available.

Water solubility: Approximately 778 g/L at 20 °C

Other solubility: No data available.

Partition coefficient (n-octanol/water): log Kow 0.11

Vapor pressure: <1 mbar at 20 °C

Density / relative density: 1.321 g/cm³ at 39 °C

Relative vapor density: No data available.

Evaporation rate: No data available.

Particle characteristics: No data available (solid).

Refractive index: No data available.

Oxidizing properties: No data available.

SECTION 10: STABILITY AND REACTIVITY

Reactivity: No additional data available; follow incompatibility and handling information.

Chemical stability: Stable under recommended dry storage conditions; protect from stated sensitivities.

Possibility of hazardous reactions: No additional data available; follow incompatibility and handling information.

Conditions to avoid: Excess heat, incompatible materials and moisture where sensitive.

Incompatible materials: Strong acids, strong bases and oxidizing agents.

Hazardous decomposition products: Carbon monoxide and carbon dioxide.

SECTION 11: TOXICOLOGICAL INFORMATION

Data basis: Available supplier toxicological information; missing study conditions are stated where applicable. No-data entries do not establish absence of hazard.

Likely routes of exposure: Inhalation, skin contact, eye contact and ingestion.

Acute toxicity / numerical measures: Oral acute toxicity estimate (ATE): 500.1 mg/kg. This is an estimate, not a measured Automat LD50.

Skin corrosion / irritation: No data available.

Serious eye damage / irritation: Causes serious eye irritation.

Respiratory / skin sensitization: No sensitization data available.

Germ cell mutagenicity: No data available.

Carcinogenicity: No data available. IARC, NTP and OSHA carcinogen-list information: No data available.

Reproductive toxicity: No data available.

STOT, single exposure: Not classified; no additional data available.

STOT, repeated exposure: May cause damage to organs (kidneys) through prolonged or repeated exposure if swallowed.

Aspiration hazard: No data available.

Symptoms / delayed effects: Harmful if swallowed. Causes serious eye irritation. May cause damage to organs (kidneys) through prolonged or repeated exposure if swallowed.

Interactions: No additional information available.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity: Fish LC50 >100 mg/L; algae ErC50 >100 mg/L. Exposure durations not available. No aquatic classification adopted on this evidence.

Persistence / degradability: No data available.

Bioaccumulative potential: No bioaccumulation study data available; partition coefficient, if available, is listed in Section 9.

Mobility in soil: No data available.

Other adverse effects: No additional data available. Prevent release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment: Collect waste and contaminated absorbents in compatible, closed, labeled containers. Use a licensed waste contractor and comply with applicable local, state and federal requirements.

Environmental precautions: Do not discharge to drains, soil or waterways. Do not mix with incompatible wastes.

Contaminated packaging: Handle residues and uncleaned packaging with the same precautions as the product. Dispose of packaging through an appropriate waste facility.

SECTION 14: TRANSPORT INFORMATION

DOT (U.S.): Not regulated as dangerous goods.

IMDG: Not regulated as dangerous goods.

IATA: Not regulated as dangerous goods.

UN number: Not applicable.

UN proper shipping name: Not applicable.

Transport hazard class: Not applicable.

Packing group: Not applicable.

IMDG marine pollutant: No (supplier information).

Transport in bulk under IMO instruments: Not assessed.

Special precautions: Keep containers closed and protected from moisture, damage and incompatible materials.

SECTION 15: REGULATORY INFORMATION

TSCA inventory information: No verified inventory-status data available.

SARA 311/312 hazard categories: Acute toxicity (oral); Eye irritation; Specific target organ toxicity, repeated exposure.

Additional federal and state regulatory information: No additional verified information available.

SECTION 16: OTHER INFORMATION

Preparation / revision date: 2026-10-19.

Document version: AS-EC-20261019-01.

Revision description: Updated oral toxicity, eye irritation and repeated-exposure kidney hazard; corrected flash point and physical properties. Supplier address and telephone updated.

Information sources: Existing Automat Solutions SDS and the supplied chemical comparison, with supplemental supplier information. Sigma-Aldrich E26258; Sigma-Aldrich 809950, Merck 844011 and Huntsman SDS information as summarized in the source comparison.

Data limitations: Supplier and literature values are reference information and are not measurements on an Automat production lot. Missing test conditions and unavailable data are stated in the relevant sections.

Abbreviations: GHS, Globally Harmonized System; LD50, median lethal dose; LC50, median lethal concentration; ATE, acute toxicity estimate; STOT, specific target organ toxicity; DOT, U.S. Department of Transportation; IMDG, International Maritime Dangerous Goods; IATA, International Air Transport Association.

Disclaimer: This information describes safety precautions for the identified material. It is not a certificate of analysis or a guarantee of product properties. The information may not apply when the material is combined with other substances or used in processes not described here.