



Safety Data Sheet (SDS) for AltimeterTwo

Report No.: JL-A2-SDS-2025

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Jolly Logic

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Material Safety Data Sheet (MSDS)

For Jolly Logic and for their product **AltimeterTwo**

Model/type reference: AltimeterTwo JL-A2

Trademark: Jolly Logic

Nominal Voltage: 3.7V (battery component)

Typical Capacity: 140 mAh, ~0.52 Wh (battery component; adjusted based on product specifications)

Weight: 9.9 g (total product)

Shape and Physical Dimension (mm): 14.5 mm x 18 mm x 49 mm

Version number: V1.0

Preparation Date: September 11, 2025

Revision date: N/A

Laboratory: N/A (Compiled internally)

Compiled and approved by: John Beans, President, Jolly Logic

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product name: AltimeterTwo (electronic altimeter containing lithium polymer battery)

Model: AltimeterTwo JL-A2

Other means of identification

Synonyms: None

Recommended use of the chemical and restrictions on use

Recommended Use: Digital altimeter for model rockets, drones, kites, and similar applications to measure altitude.

Uses advised against:

- a) Do not dismantle, open, or shred the device or its battery.
- b) Do not expose the device to heat or fire. Avoid storage in direct sunlight.
- c) Do not short-circuit the battery terminals. Do not store haphazardly where short-circuiting may occur.
- d) Do not remove from original packaging until use.
- e) Do not subject to mechanical shock.
- f) In the event of leakage, avoid contact with skin or eyes; wash affected area and seek medical advice.
- g) Use only the provided USB charger.
- h) Observe polarity and ensure correct use.
- i) Do not use with incompatible equipment.
- j) Do not mix with other battery types.
- k) Supervise children during use.
- l) Seek medical advice if swallowed.
- m) Purchase from authorized sources.
- n) Keep clean and dry.
- o) Wipe terminals if dirty.
- p) Charge before first use; follow instructions.
- q) Do not leave on prolonged charge.
- r) Recharge after extended storage for optimal performance.
- s) Retain literature for reference.
- t) Use only as intended.
- u) Remove battery if possible when not in use (note: battery is integrated).
- v) Dispose of properly.

Details of the supplier of the safety data sheet:

Supplier Name: Jolly Logic

Address: 231 Daylight Place, Danville, CA 94526, USA

Telephone number of the supplier: (510)399-1510

Emergency Telephone No. (24h): (510)399-1510

Fax: (925)553-2627

Postcode: 94526

E-mail address: support@jollylogic.com

Emergency telephone number

Company Emergency Phone Number: (510)399-1510

2. HAZARDS IDENTIFICATION

Classification

No harm under normal use. Hazards primarily from the integrated lithium polymer battery if damaged or leaking electrolyte. Reference as follows:

Classification of the substance or mixture

Classification according to GHS:

- Acute Toxicity, Oral (Hazard category 4)
- Acute Toxicity, Dermal (Hazard category 3)
- Skin Irritation (Category 1B)
- Eye Irritation (Hazard category 1)

GHS Label elements, including precautionary statements:

GHS02 GHS05 GHS06

Signal word: Warning

Hazard statement(s):

- H242: Heating may cause a fire.
- H311: Toxic in contact with skin.
- H314: Causes severe skin burns and eye damage.
- H302: Harmful if swallowed.

Precautionary statements:

Prevention:

- P264: Wash thoroughly after handling.
- P270: Do not eat, drink, or smoke when using this product.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.

(con'd)

Response:

- P312: Call a Poison center or doctor/physician if you feel unwell.
- P302+P350: IF ON SKIN: Gently wash with plenty of soap and water.
- P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage: None

Disposal:

- P501: Dispose of contents/container in accordance with local/national regulations.

Hazards not otherwise classified (HNOC)

Not Applicable.

Other information

The ABS plastic case and circuit board are non-hazardous under normal conditions. Product complies with RoHS and WEEE directives (lead-free circuit board).

3. COMPOSITION/INFORMATION ON INGREDIENTS**Chemical characterization:** Mixtures**Description:**

Product: Electronic altimeter consisting of the following components. The primary hazardous component is the integrated lithium polymer battery. The ABS case (Chimei PA-758) and circuit board are non-hazardous.

Common Chemical Name	Concentration (%)	CAS Number	EC No.
Lithium Cobalt Oxide (LiCoO ₂) (battery)	25-50	12190-79-3	235-362-0
Aluminum Foil (Al) (battery)	2-10	7429-90-5	231-072-3
Poly Vinylidene Fluoride PVDF (battery)	0-5	24937-79-9	---
Graphite (C) (battery)	20-30	7782-42-5	231-955-3
Copper Foil (Cu) (battery)	5-10	7440-50-8	231-159-6
Polyethylene (battery)	5-10	9002-88-4	200-815-3
Polypropylene (battery)	5-10	9003-07-0	---
Phosphate(1-), hexafluoro-, lithium (battery)	10-20	21324-40-3	244-334-7
Nickel (battery)	0.5-5	7440-02-0	231-111-4
Acrylonitrile Butadiene Styrene (ABS) Copolymer (case)	~30-40 (case)	9003-56-9	---
Circuit Board Materials (FR4 epoxy, etc.; lead-free)	~10-20	Various (RoHS compliant)	---

Note: CAS number is Chemical Abstract Service Registry Number. N/A = Not apply. Percentages are approximate for the whole product; battery is ~30% of weight (2.9g battery in 9.9g product). ABS Chimei PA-758 is a transparent, rigid plastic with no identified hazards in solid form. Circuit board is lead-free and compliant with RoHS and WEEE.

4. FIRST-AID MEASURES

First aid measures

Eye Contact: Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

Skin Contact: Remove contaminated clothing and shoes. Wash skin with soap and water. If irritation or allergic reactions occur, see a physician.

Inhalation: Move to fresh air. If symptoms persist, call a physician.

Ingestion: Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed

Swallowing: Do not induce vomiting. Get medical attention.

Most Important Symptoms/Effects: No information available.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

CO₂, dry chemical powder, water spray.

Unsuitable Extinguishing Media: No information available.

Specific Hazards Arising from the Chemical

Formation of toxic gases possible during heating or fire. In case of fire, may release: Carbon monoxide (CO), Carbon dioxide, Other irritating and toxic gases. Battery may vent or ignite if damaged.

Hazardous Combustion Products

Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact: No

Sensitivity to Static Discharge: No

Protective Equipment and Precautions for Firefighters

Wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear. Special hazards: Device may release hazardous decomposition products in fire. Lithium battery can burn rapidly if abused (e.g., over 150°C).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Avoid contact with eyes. Use personal protective equipment. Ensure ventilation. Remove ignition sources. Evacuate to safe areas.

Environmental precautions

Refer to protective measures in Sections 7 and 8. Prevent entry into sewers or waterways.

Methods and material for containment and cleaning up

Methods for Containment: Prevent further leakage if safe.

Methods for Cleaning up: Use PPE. Absorb spills with non-combustible material (sand, earth). Transfer to labeled containers. Clean surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling: Follow good hygiene and safety practices. Avoid contact with skin, eyes, clothing. Use with adequate ventilation. Product is not explosive.

Conditions for safe storage, including any incompatibilities

Store for >3 months: Recharge periodically.

3 months: -10°C~+40°C, 45-85% RH

Long-term: 0°C~+35°C

Voltage for storage: 3.0V~4.2V

Avoid short-circuiting, heat, fire, sunlight. Do not store with oxidizing or acidic materials. Keep away from ignition sources. Store cool, dry, ventilated. Incompatible Products: None known.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

Ingredients with limit values:

12190-79-3 Lithium Cobalt Oxide

TLV (USA): 0.02 mg/m³

MAK (Germany): 0.1 mg/m³

Other Exposure Guidelines: Vacated limits revoked per court decision.

Appropriate engineering controls

Engineering Measures: Showers, eyewash stations, ventilation systems.

Individual protection measures

Eye/Face Protection: Tightly sealed goggles.

Body protection: Protective clothing.

Skin protection: Protective gloves (nitrile recommended). Penetration time: Check with manufacturer.

(con'd)

Respiratory Protection: Not needed under normal use; use if limits exceeded.

Hygiene Measures: Good industrial hygiene practices.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State

Form: Rectangular electronic device

Color: Varies (typically black or colored ABS)

Odour: Odourless

Odor Threshold: No information available

Change in condition:

pH: Not determined.

Melting point/freezing point: Not determined.

Initial boiling point and Boiling range: Not determined.

Flash Point: Not determined.

Evaporation rate: Not determined.

Flammability (solid, gas): Not determined.

Upper/lower flammability or explosive limits: Not determined.

Vapor Pressure: Not determined.

Vapor Density: Not determined.

Relative density: Not determined.

Solubility in Water: Not determined.

Solubility in other solvents: Not determined.

n-octanol/water partition coefficient: Not determined.

Auto-ignition temperature: Product is not self-igniting.

Decomposition temperature: Not determined.

Odour threshold: Not determined.

Evaporation rate: Not determined.

Viscosity: Not determined.

Other Information: No further relevant information available.

10. STABILITY AND REACTIVITY

Reactivity: Stable under recommended conditions.

Chemical stability: Stable under normal use.

Thermal decomposition/conditions to be avoided: No decomposition if used as specified.

Possibility of Hazardous Reactions: None under normal processing.

Hazardous Polymerization: Does not occur.

Conditions to avoid: Strong heating, fire, incompatible materials.

Incompatible materials: Strong oxidizing agents, strong acids, base metals.

Hazardous Decomposition Products: Carbon oxides, other irritating/toxic gases.

11. TOXICOLOGICAL INFORMATION

Acute toxicity: No data available.

LD/LC50 values: Not available.

Skin corrosion/irritation: No irritant effect (battery electrolyte if leaked).

Serious eye damage/irritation: Causes serious eye irritation.

Respiratory or skin sensitization: No sensitizing effects known.

Specific target organ system toxicity: No information available.

CMR effects (carcinogenicity, mutagenicity, toxicity for reproduction): No information available.

12. ECOLOGICAL INFORMATION

Toxicity: Aquatic toxicity: No further information.

Persistence and degradability: No further information.

Bioaccumulative potential: No further information.

Mobility in soil: No further information.

Results of PBT and vPvB assessment: PBT: Not applicable. vPvB: Not applicable.

Other adverse effects: No information available. Recycle to prevent environmental impact.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Recommendation: Do not dispose with household garbage. Recycle through certified programs (e.g., for lithium batteries and electronics per WEEE).

Uncleaned packaging: Dispose according to regulations.

14. TRANSPORT INFORMATION

The product contains a lithium polymer battery tested per UN Manual of Tests and Criteria, Part III, subsection 38.3. Watt-hour rating

UN number: UN3481 (lithium ion batteries contained in equipment).

UN Proper shipping name: Lithium ion batteries contained in equipment.

UN Classification: Non dangerous (Class 9 if applicable).

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation: Authorizations/Restrictions: No information.

Regulatory information: Components listed in EINECS, TSCA, DSL, etc., where applicable (see battery SDS for details). Product complies with RoHS (lead-free) and WEEE.

Chemical safety assessment: Not carried out.

16. OTHER INFORMATION

This information is based on our present knowledge and the provided battery SDS. It does not guarantee specific features or establish contractual relationships. Relevant phrases: R20/22: Harmful by inhalation/if swallowed. R36: Irritating to eyes. H302: Harmful if swallowed. H332: Harmful if inhaled.

End of SDS