aPower X Safety Data Sheet

Version1.1

This Safety Data Sheet is a comprehensive document containing the data and information in relation to the chemical components, physical and chemical parameters, explosive performance, toxicity, environmental hazards, and relationships to the laws and regulations on safe operation (battery), storage, emergency response in case of leakage, and transportation for the aPower X.

Section 1: Identification of the product and of the company

a. **Company**: FranklinWH Energy Storage Inc.

b. **Model Name:** aPower X

c. **SKU:** APR-05K13V1-US

d. **Other Means of Identification:**

- Lithium Iron Phosphate Battery.
- UN3480 – Lithium-Ion Batteries.

e. **Product Description:**

The aPower X (aPower) consists of a 16-cell lithium iron phosphate battery, battery management system (BMS), advanced inverter (power conversion system), other electronic devices and structural parts.

f. **Recommended Use:**

The product is to be used as an alternating current (AC)-coupled energy storage system primarily used with photovoltaic systems. Do not store close to heat sources, such as furnaces or open flames.

- Operating temperature range: -4°F to 122°F (-20°C to 50°C).
- Storage Temperature Range:
  - ≤ 24 hours: -22°F~140°F (-30℃~60℃)
  - ≤ 9 months: 14°F~113°F (-10℃~45℃)

g. **Supplier Details:**

FranklinWH Energy Storage Inc.

1731 Technology Drive, Suite 530, San Jose, CA 95110

www.franklinwh.com

888-837-2655

service@franklinwh.com

h. **Emergency Telephone Number:**

Inside the United States, US Territories, and Canada: (800) 255-3924.

Outside the United States, US Territories, and Canada: +01 (813) 248-0585.

Contract Number: MIS5376960

Section 2: Hazard Identification

a. The battery is sealed inside a protective case and is not expected to expose users to hazardous ingredients under normal use conditions. Risk of exposure occurs only if the aPower is mechanically, thermally, or electrically abused to the point where both the protective case and battery are compromised. If this occurs, exposure to electrolyte solutions contained within the cell may occur through eye contact, skin contact or ingestion.

b. **Classification of Hazardous Chemical:**

- Acute toxicity, oral: Category 4
- Skin corrosion/irritation: Category 2
- Serious eye damage/eye irritation: Category 2A
- Specific target organ toxicity, single exposure: Respiratory tract irritation: Category 3

c. **Signal Word:** WARNING

d. **Hazard Statements:**

- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H355 May cause respiratory irritation.

e. **Precautionary Statements:**

i. **Prevention:**

- P101 – If medical advice is needed: Have product container or label in hand.
- P102 – Keep out of reach of children.
- P103 – Read label before use.
- P210 – Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P264 – Wash hands thoroughly after using.
- P280 – Wear protective gloves/eye and face protection.
- P302 + P303 + P352 + P353 + P361 + P362 +P364 – If on skin (or hair): Take off all contaminated clothing immediately and wash before reuse. Rinse skin with water.
- P337 + P332 + P313 – If skin irritation occurs or eye irritation persists get medical attention or advice.
- P370 + P378 – In case of fire: Use ABC dry chemical to extinguish.

ii. Response:

- P314 – Get medical advice/attention if you feel unwell.
- P301 + P312 – IF SWALLOWED: Call a Poison Control Center if you feel unwell.
- P302 + P353 – IF ON SKIN: Wash with plenty of water
- P304 + P340 – IF INHALED: Remove person to fresh air and keep comfortable.
- P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

iii. Storage:

P403 + P235 – Store in a well-ventilated place, keep cool.

iv. Disposal:

P501 – Dispose of contents to approved waste treatment plants.

v. Label Elements, Including Precautionary Statements:

The packaging includes the following labels for the transport of dangerous goods.

Other Hazards:

- Physical and chemical hazards: See Section 10
- Human health hazards: See Section 11
- Environmental hazards: See Section 12

Section 3: Composition of and Information on Ingredients

Hazardous components	CAS No. EC-No.	Content / wt%
Graphite	CAS# 7782-42-5 EC#231-955-3	7-25
Lithium Iron Phosphate	CAS# 15365-14-7 EC# 476-700-9	15-40
Hexafluoropropylene-vinylidene fluoride Copolymer	CAS# 9011-17-0 EC# 618-470-6	3-15
Lithium Hexafluorophosphate	CAS# 21324-40-3 EC#235-362-0	0-5
Acetylene Black	CAS# 1333-86-4 EC#215-609-9	0-2
Diethyl Carbonate	CAS# 105-58-8 EC#203-311-1	0-15
Dimethyl Carbonate	CAS# 616-38-6 EC# 210-478-4	0-15
Ethyl Methyl Carbonate	CAS# 623-53-0 EC# 433-480-9	0-15
Propylene Carbonate	CAS# 108-32-7 EC#203-572-1	0-15
Ethylene Carbonate	CAS# 96-49-1 EC# 202-510-0	0-15

Section 4: First Aid Measures

a. **Description of Necessary First Aid Measures:**

i. **After Eye Contact:**

Flush eyes with plenty of water for 15 minutes while holding eyelids open. Get medical attention if irritation persists.

ii. **After Skin Contact:**

Remove contaminated clothing and shoes. Immediately wash with water and soap and rinse thoroughly for 15 minutes. Wash clothing and shoes before reuse. If irritation occurs get medical attention.

iii. **After Inhalation:**

Remove victim to fresh air area. Administer artificial respiration if breathing is difficult. Seek medical attention.

iv. **After Swallowing:**

Do not induce vomiting. Rinse mouth thoroughly with water. Get medical attention.

b. **Symptoms Caused by Exposure**

i. **Symptoms:**

Exposure to battery contents may cause irritation and potential burns.

c. **Medical Attention and Special Treatment.**

i. **Notes to Physician:**

Treat symptomatically.

Section 5: Firefighting Measures

a. **Flash Point:** N/A.

b. **Auto-Ignition Temperature:** N/A.

c. **Extinguishing Media:**

- Water (For cooling)
- CO_2 (ABC extinguishers are not effective when the battery pack is on fire.)

d. **Special Fire-Fighting Procedures:** Self-contained breathing apparatus. (SCBA)

e. **Unusual Fire and Explosion Hazards:**

Cell may vent when subjected to excessive heat-exposing battery contents.

f. **Hazardous Combustion Products:** Carbon monoxide, carbon dioxide, lithium oxide fumes.

Section 6: Accidental Release Measures

a. **Steps to be Taken in case Material is Released or Spilled:**

If the battery material is released, the preferred response is to leave the area and allow the battery to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.

b. **Waste Disposal Method:**

- Prior to disposal, it is recommended to fully discharge the battery to the end to use up the metal lithium inside the battery.
- The battery is required to be disposed at a proper facility according to local regulations.

Section 7: Handling and Storage

a. The battery should not be opened, destroyed, or incinerated, since it may leak or rupture and release to the environment the ingredients in the hermetically sealed container. Do not short circuit terminals, or over charge the battery, force over-discharge, or throw in fire. Do not crush or puncture the battery or immerse it in liquids.

b. **Precautions to be Taken in Handling and Storing:**

Avoid mechanical or electrical abuse. Preferably, store in a cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.

c. **Other Precautions:**

The battery may explode or cause burns if disassembled, crushed, or exposed to fire or high temperatures. Do not short or install with incorrect or reverse polarity.

Section 8: Exposure Controls and Personal Protection

a. **Respiratory Protection:**

In case of emergency battery venting, provide as much ventilation as possible. Avoid confined areas with actively venting cell cores. Respiratory Protection is not necessary under normal use conditions. Battery cells should not vent under normal use conditions.

b. **Ventilation:** Not necessary under normal use conditions.

c. **Protective Gloves:** Not necessary under normal use conditions.

d. **Other Protective Clothing or Equipment:** Not necessary under normal use conditions.

e. **Personal Protection is Recommended for Venting Battery:**

Respiratory protection, protective gloves, protective clothing and safety glasses with side shields.

Section 9: Physical and Chemical Properties

a. **Information on Basic Physical and Chemical Properties:**

i. **Appearance:** Quadrate shape

ii. **Odors:** If leaking, smells of medical ether.

iii. **PH:** Not applicable as supplied

iv. **Flash Point:** Not applicable unless individual components exposed.

v. **Flammability:** Not applicable unless individual components exposed.

vi. **Relative density:** Not applicable unless individual components exposed.

vii. **Solubility (water):** Not applicable unless individual components exposed.

viii. **Solubility (other):** Not applicable unless individual components exposed.

Section 10: Stability and Reactivity

a. **Stability:** Product is stable under conditions described in Section 7.

b. **Conditions to Avoid:**

Heat above 158°F (70°C) or incineration; deformation; mutilation; crushing; disassembly; overcharging; short circuiting; prolonged exposure to excessively humid conditions.

c. **Materials to Avoid:** Oxidizing agents, alkalis, water.

d. **Hazardous Decomposition Products:** Toxic fumes and may form peroxides.

e. **Hazardous Polymerization:** N/A.

If leakage occurs prevent contact with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons.

Section 11: Toxicology Information

a. **Signs & Symptoms:** None unless the battery ruptures.

   In the event of exposure to internal contents, vapor fumes may be very irritating to the eyes and skin.

b. **Inhalation:** Lung irritant.

c. **Skin Contact:** Skin irritant.

d. **Eye Contact:** Eye irritant

e. **Ingestion:** Poisoning if swallowed.

f. **Medical Conditions Generally Aggravated by Exposure:**

   - In the event of exposure to internal contents, moderate to severe irritation, burning and dryness of the skin may occur.
   - Targets organs, nerves, liver and kidneys.

Section 12: Toxicology Information

a. **Mammalian Effects:** None known at present.

b. **Eco-toxicity:** None known at present.

c. **Bioaccumulation Potential:** Slowly Bio-degradable.

d. **Environmental Fate:** No known environmental hazards at present.

Section 13: Disposal Considerations

a. Do not incinerate, or subject cells to temperature in excess of 158°F (70°C), as such abuse can result in loss of seal, leakage, and/or cell explosion. Dispose of in accordance with appropriate local regulations.

Section 14: Transport Information

a. **Label for Conveyance:** Class 9 Hazard Label

b. **UN Number:** UN 3480

c. **Proper Shipping Name:** Lithium-ion batteries

d. **Packaging Group:** II

e. **IMDG CODE Special Provisions:** 188, 230, 310, 348, 376, 377, 384, 387

f. **EmS No:** F-A, S-I

g. **Marine Pollutant:** No

h. **Hazard Classification:**

The goods shall comply with the Packing Instructions TDG 21st Edition and the Packing Instructions P903 of IMDG CODE（Amdt.39-18）2018 Edition, including the passing the UN38.3 test.

Section 15: Regulatory Information

a. **Law Information:**

- Dangerous Goods Regulations
- Recommendations on the Transport of Dangerous Goods Model Regulations
- International Maritime Dangerous Goods
- Technical Instructions for the Safe Transport of Dangerous Goods
- Classification and code of dangerous goods
- Occupational Safety and Health Act (OSHA)
- Toxic Substance Control Act (TSCA)
- Consumer Product Safety Act (CPSA)
- Federal Environmental Pollution Control Act (FEPCA)
- The Oil Pollution Act (OPA)
- Superfund Amendments and Reauthorization Act TitleⅢ(302/311/312/313) (SARA)
- Resource Conservation and Recovery Act (RCRA)
- Safety Drinking Water Act (CWA)
- California Proposition 65
- Code of Federal Regulations (CFR)

In accordance with all Federal State and local laws.

Section 16: Any other Relevant Information

a. **Document Details:**

Original Preparation Date: 25th Dec 2021

b. **Prepared by:**

FranklinWH Energy Storage Inc.

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