SAFETY DATA SHEET

1. Identification

Product identifier **Lithium ion rechargeable battery pack**

Other means of identification

SDS number SDS-00067

Product code 144-BAT-LI, 144-BAT-HLI, 13950-HLI, TBM54CT-LI, TBM54CTS-LI, TBM58PCTS-LI, TBM6UCR-LI

Recommended use Electrical source

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company name ABB Installation Products Inc.

Address 860 Ridge Lake Blvd.
Memphis, TN 38120
US

Telephone 901-252-5000 ext.8324

E-mail Not available.

Emergency phone number INFOTRAC - 24 HOURS: 1-800-535-5053
+1 352-323-3500 (Outside USA)

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

OSHA defined hazards Not classified.

According to OSHA the product is considered an article. In its manufactured and shipped state, this product is considered to present low hazard.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement Exempt (manufactured article).

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response Wash hands after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information For the battery cell, chemical materials are stored in a hermetically sealed metal or metal laminated plastic case, designed to withstand temperatures and pressures encountered during normal use. As a result, during normal use, there is no physical danger of ignition or explosion and chemical danger of hazardous materials leakage.
However, if exposed to a fire, added mechanical shocks, decomposed, added electric stress by miss-use, the gas release vent will be operated. The battery cell case will be breached at the extreme, hazardous materials may be released.
If the electrolyte contacts with water, it will generate detrimental hydrogen fluoride. Since the leaked electrolyte is inflammable liquid, do not bring close to fire.

3. Composition/information on ingredients

Mixtures

Electrolyte

Chemical name	CAS number	%
Organic electrolyte principally involves ester carbonate	-	5 - 25

Negative electrode

Chemical name	CAS number	%
Carbon	-	10 - 30

Negative electrode's base

Chemical name	CAS number	%
Copper	-	1 - 15

	CAS number	%

Outer case

Chemical name		
Aluminium, iron, Aluminium laminate plastic	-	1 - 30

Positive electrode

Chemical name	CAS number	%
Lithium transition metal oxidate	-	20 - 60

Positive electrode's base

Chemical name	CAS number	%
Aluminum	-	1 - 10

Product is an article as defined by OSHA regulation 29 CFR 1910.1200; therefore, it is exempt from the requirement to provide an SDS. This SDS is provided for information only.

4. First-aid measures

Inhalation Exposure to contents of an open or damaged battery: Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Exposure to contents of an open or damaged battery: Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact Exposure to contents of an open or damaged battery: Immediately flush with plenty of water for up to 15 minutes. Remove contact lenses if present and easy to do so. Get medical attention immediately.

Ingestion Exposure to contents of an open or damaged battery: Rinse mouth. Induce vomiting (only in conscious persons). Get medical attention immediately.

Most important symptoms/effects, acute and delayed The steam of the electrolyte has an anesthesia action and stimulates a respiratory tract. The steam of the electrolyte stimulates the skin and may cause skin sores. The electrolyte can cause eye irritation and inflammation.

Indication of immediate medical attention and special treatment needed Treat symptomatically.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). Nitrogen gas SPECIFIC RECOMMENDATIONS. Class D fire extinguisher.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical Containers can burst violently when heated, due to excess pressure build-up. Fire may produce irritating, corrosive and/or toxic gases.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions Wear self-contained breathing apparatus and protective clothing.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Leak from a damaged or opened battery: Avoid contact with skin and eyes. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
Methods and materials for containment and cleaning up	Leak from a damaged or opened battery: Wipe up with absorbent material (e.g. cloth, fleece). Place in a designated labeled waste container, dispose as hazardous waste.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Observe good industrial hygiene practices. Do not connect positive terminal to the negative terminal with electrical wire or chain. Avoid polarity reverse connection when installing the battery to an instrument. Do not wet the battery with water, seawater, drink or acid; or expose to strong oxidizers. Do not damage or remove the external tube. Keep the battery away from heat and fire. Do not disassemble or reconstruct the battery; or solder the battery directly. Do not give a mechanical shock or deform. Do not use unauthorized charger or other charging method. Terminate charging when the charging process does not end within the specified time.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Do not store the battery with metalware, water, seawater, strong acid or strong oxidizer. Make the charge amount 30~50% then store at room temperature or less (temperature=-20~35 degree C) in a dry (humidity: 45~85%) place. Avoid direct sunlight, high temperature, and high humidity. Use insulative and adequately strong packaging material to prevent short circuit between positive and negative terminal when the packaging breaks during normal handling. Do not use conductive or easy to break packaging material. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Ventilation is not normally required. Leak from a damaged or opened battery: Provide adequate ventilation if fumes or vapors are generated.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Not necessary under normal conditions. Wear chemical goggles if handling an open or leaking battery.
Skin protection	
Hand protection	Not necessary under normal conditions. Wear appropriate chemical resistant gloves.
Skin protection	
Other	Not necessary under normal conditions. Wear chemical resistant gloves if handling an open or leaking battery.
Respiratory protection	Not necessary under normal conditions.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Solid. Cylindrical
Form	tube. Metallic.
Color	Red Odorless.
Odor	
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not applicable
Initial boiling point and boiling range	Not applicable
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not applicable
Vapor density	Not applicable
Relative density	Not applicable
Solubility(ies)	
Solubility (water)	Insoluble.
Partition coefficient (n-octanol/water)	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	Not applicable
Viscosity	Not applicable
Other information	
Explosive properties	Not explosive.
Flammability	Not flammable while hermetically sealed
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	When a battery cell is exposed to an external short-circuit, crushes, deformation, high temperature above 100 degree C, it will be the cause of heat generation and ignition. Direct sunlight and high humidity. Do not allow conductive material to touch the battery terminals. A dangerous short-circuit may occur and cause battery failure and fire.
Incompatible materials	Conductive materials, water, seawater, strong oxidizers and strong acids.
Hazardous decomposition products	By heating and fire, corrosive vapors/gases may be formed.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Not relevant, due to the form of the product. Exposure to contents of an open or damaged battery: May cause irritation to the respiratory system.
Skin contact	Under normal conditions of intended use, this product does not pose a skin hazard. In the event that cell or battery is damaged, open, or leaking – brief contact may cause skin burns with possible symptoms including pain, local redness, and tissue damage.
Eye contact	Under normal conditions of intended use, this product does not pose an eye hazard. In the event that cell or battery is damaged, open, or leaking – irritation with injury resulting in permanent impairment of vision and chemical burn may occur.
Ingestion	Not relevant, due to the form of the product. Exposure to contents of an open or damaged battery: Causes digestive tract burns.
Symptoms related to the physical, chemical and toxicological characteristics	The steam of the electrolyte has an anesthesia action and stimulates a respiratory tract. The steam of the electrolyte stimulates the skin and may cause skin sores. The electrolyte can cause eye irritation and inflammation.

Information on toxicological effects

Acute toxicity	Expected to be a low hazard for usual industrial or commercial handling by trained personnel.
Skin corrosion/irritation	Exposure to contents of an open or damaged battery: Causes skin burns. Exposure
Serious eye damage/eye irritation	to contents of an open or damaged battery: Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization Not a skin sensitizer.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity No carcinogenicity data available for this product.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability Since a battery cell and the internal materials remain in the environment, do not bury or throw out into the environment.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Specified collection or disposal of lithium ion battery is required by the law like as "battery control law" in several nations. Collection or recycle of the battery is mainly imposed on battery's manufacturer or importer in the nations recycle is required.

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. If contaminated by a leaking or damaged battery, empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT UN3480

UN number Lithium ion batteries including lithium ion polymer batteries

UN proper shipping name

Transport hazard class(es) 9

Class - 9

Subsidiary risk -

Label(s)

Packing group

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Packaging exceptions 185

Packaging non bulk 185

Packaging bulk None

IATA

UN number UN3480

UN proper shipping name Lithium ion batteries (including lithium polymer batteries)

Transport hazard class(es)

Class	9
Subsidiary risk	-

Packing group -

Environmental hazards No.

ERG Code 9FZ

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN3480

UN proper shipping name LITHIUM ION BATTERIES (including lithium ion polymer batteries)

Transport hazard class(es)

Class	9
Subsidiary risk	-

Packing group -

Environmental hazards

Marine pollutant No.

EmS F-A, S-I

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is an article pursuant to 29 CFR 1910.1200 and, as such, is not subject to the OSHA Hazard Communication Standard.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Carbon (CAS -)

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 2016 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 22-July-2016

Revision date 13-August-2024

Version C

HMIS® ratings Health: 0
Flammability: 1
Physical hazard: 0

NFPA ratings

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