



FX 3-A tool containing lithium ion battery

Safety Data Sheet

according to the United Nations GHS (Rev. 9, 2021)

Issue date: 05/04/2023

Revision date: 05/04/2023

Version: 2.1

SECTION 1: Identification

1.1. GHS Product identifier

Product form	Article
Name	FX 3-A tool containing lithium ion battery
UN-No. (ADR)	3481
Product code	BU Direct Fastening

1.2. Other means of identification

No additional information available

1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture	For professional use only Electrical batteries and accumulators
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1.4. Supplier's details

Supplier

Hilti (Hong Kong) Ltd.

701-704, 7/F, Tower A, Manulife Financial Centre 223 Wai Yip Street, Kwun Tong

Tong

HK– Kowloon

Hong Kong

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Department issuing data specification sheet

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1.5. Emergency phone number

Emergency number	Schweizerisches Toxikologisches Informationszentrum – 24h Service +41 44 251 51 51 (international) +852 27734 700
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SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS

Not classified

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. GHS Label elements, including precautionary statements

Labelling according to the United Nations GHS

No labelling applicable

FX 3-A tool containing lithium ion battery

Safety Data Sheet

according to the United Nations GHS (Rev. 9, 2021)

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification For the battery chemical materials are stored in a hermetically sealed metal 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.

It may cause heat generation or electrolyte leakage if battery terminals contact with other metals. Electrolyte is flammable. In case of electrolyte leakage move the battery from fire immediately.

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 case will be broken at the extreme, hazardous materials may be released.

Moreover, if heated strongly by a surrounding fire, acrid gas may be emitted.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Comments

Lithium Ion rechargeable battery pack:

Name/Type	Energy content (Wh)
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16S3P ANR26650	396
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This product contains a positive electrode (Lithium iron phosphate), a negative electrode (graphite), electrolyte and binder.

The physical form of the product, however, precludes exposure to workers under normal conditions of use.

This mixture does not contain any substances to be mentioned according to the applicable regulations

SECTION 4: First-aid measures

4.1. Description of necessary first-aid measures

First-aid measures general

If the electrolyte is leaking out of the battery pack, the following measures have to be taken.

First-aid measures after inhalation

Allow affected person to breathe fresh air. Allow the victim to rest. If necessary seek medical advice.

First-aid measures after skin contact

Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact

Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.

First-aid measures after ingestion

Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms/effects, acute and delayed

Symptoms/effects

Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media

Cool batteries and accumulators with water jet. In case of fire in the surroundings: Use extinguishing agent suitable for surrounding fire.

FX 3-A tool containing lithium ion battery

Safety Data Sheet

according to the United Nations GHS (Rev. 9, 2021)

5.2. Specific hazards arising from the chemical

Fire hazard	Water may not extinguish burning batteries but will cool adjacent batteries and control the spread of fire. Burning batteries will burn themselves out. Virtually all fires involving lithium batteries can be controlled by flooding with water. However, the contents of the battery will react with water and form hydrogen gas. In a confined space, hydrogen gas can form an explosive mixture. In this situation, smothering agents are recommended.
Hazardous decomposition products in case of fire	Formation of toxic gases is possible during heating or in case of fire. Water might react with released Lithium hexafluorophosphate to highly toxic gaseous hydrogen fluoride.

5.3. Special protective actions for fire-fighters

Firefighting instructions	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	Use a self-contained breathing apparatus and also a protective suit.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	No flames, no sparks. Eliminate all sources of ignition. Isolate from fire, if possible, without unnecessary risk.
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6.1.1. For non-emergency personnel

Emergency procedures	Evacuate unnecessary personnel.
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6.1.2. For emergency responders

Protective equipment	Equip cleanup crew with proper protection.
Emergency procedures	Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and materials for containment and cleaning up

Methods for cleaning up	Take up liquid spill into absorbent material.
Other information	Dispose of materials or solid residues at an authorized site.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	Do not soak in water or seawater. Do not expose to strong oxidizers. Do not give a strong mechanical shock or fling. Never disassemble, modify or deform. Do not connect the positive terminal to the negative terminal with electrically conductive material. Use only the chargers / electric tools specified by Hilti to charge or discharge the battery.
Hygiene measures	Do not throw into fire or expose to high temperatures (>85 °C). Do not connect the positive terminal to the negative terminal with electrically conductive material. Charge within limits of 0°C to 45°C temperature. Discharge within limits of -20°C to +60°C temperature. Always wash hands after handling the product.
Additional hazards when processed	Normal use of this product shall imply use in accordance with the instructions on the packaging and in line with the expectations of a professional user.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	Protect from heat and direct sunlight. Protect from moisture.
Storage area	Store in a well-ventilated place.
Incompatible products	Strong bases. Strong acids.

FX 3-A tool containing lithium ion battery

Safety Data Sheet

according to the United Nations GHS (Rev. 9, 2021)

Incompatible materials	Sources of ignition. Direct sunlight.
Information on mixed storage	Store away from water. Do not store together with electrically conductive materials.
Storage temperature	The accu-pack should be stored at 30 to 50% of the charging capacity. Avoid storing in places where it is exposed to static electricity. -20 – 45 °C (humidity: 0% - 80%)

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls	Ensure adequate ventilation. If the electrolyte is leaking out of the battery pack, the following measures have to be taken.
Other information	Do not eat, drink or smoke when using this product. No additional information available.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Hand protection

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	0,12		EN ISO 374

Eye protection Chemical goggles or safety glasses

Respiratory protection No additional information available

Personal protective equipment symbol(s)



8.4. Exposure limit values for the other components

No additional information available

SECTION 9: Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state	Solid
Colour	Grey.
Odour	Not available
Odour threshold	Not available
Melting point	Not available
Freezing point	Not applicable
Boiling point	Not available
Flammability	Non flammable.
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Flash point	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	Not available
pH	Not available
pH solution	Not available
Viscosity, kinematic (calculated value) (40 °C)	Not applicable
Partition coefficient n-octanol/water (Log Kow)	Not available
Vapour pressure	Not available

FX 3-A tool containing lithium ion battery

Safety Data Sheet

according to the United Nations GHS (Rev. 9, 2021)

Vapour pressure at 50°C	Not available
Density	Not available
Relative density	Not available
Relative vapour density at 20°C	Not applicable
Solubility	Not available
Particle size	Not available

9.2. Data relevant with regard to physical hazard classes (supplemental)

Explosive limits	Not applicable
Explosive properties	Risk of explosion by shock, friction, fire or other sources of ignition.

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Heating may cause a fire or explosion.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Water, humidity.

10.5. Incompatible materials

Conductive materials, water, seawater, strong oxidizers and strong acids.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	Not classified (Based on available data, the classification criteria are not met)
Skin corrosion/irritation	Not classified (Based on available data, the classification criteria are not met)
Serious eye damage/irritation	Not classified (Based on available data, the classification criteria are not met)
Respiratory or skin sensitisation	Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure	Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure	Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard	Not classified (Based on available data, the classification criteria are not met)

FX 3-A tool containing lithium ion battery

Viscosity, kinematic	Not applicable
Other information	When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

FX 3-A tool containing lithium ion battery

Safety Data Sheet

according to the United Nations GHS (Rev. 9, 2021)

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute)	Not classified (Based on available data, the classification criteria are not met)
Hazardous to the aquatic environment, long-term (chronic)	Not classified (Based on available data, the classification criteria are not met)

12.2. Persistence and degradability

FX 3-A tool containing lithium ion battery	
Persistence and degradability	No additional information available

12.3. Bioaccumulative potential

FX 3-A tool containing lithium ion battery	
Bioaccumulative potential	No additional information available

12.4. Mobility in soil

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Mobility in soil	No additional information available

12.5. Other adverse effects

Ozone	Not classified
Other adverse effects	Do not allow battery packs to penetrate the soil. The battery cell may corrode and electrolyte may leak.
Other information	Do not allow battery packs to penetrate the soil. The battery cell may corrode and electrolyte may leak.

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations	Dispose in a safe manner in accordance with local/national regulations. Refer to manufacturer/supplier for information on recovery/recycling.
Ecology - waste materials	Avoid release to the environment.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / RID

ADR	IMDG	IATA	RID
14.1. UN number or ID number			
UN 3481	UN 3481	UN 3481	UN 3481
14.2. UN proper shipping name			
LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT	LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT	Lithium ion batteries contained in equipment	LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT
Transport document description			
UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT, 9A, (E)	UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT, 9	UN 3481 Lithium ion batteries contained in equipment, 9A	UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT, 9A
14.3. Transport hazard class(es)			
9A	9A	9A	9A

FX 3-A tool containing lithium ion battery

Safety Data Sheet

according to the United Nations GHS (Rev. 9, 2021)

ADR	IMDG	IATA	RID
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No
No supplementary information available			

14.6. Special precautions for user

Overland transport

Classification code (ADR)	M4
Special provisions (ADR)	230, 310, 348, 360, 376, 377, 387, 390, 670
Limited quantities (ADR)	0
Excepted quantities (ADR)	E0
Packing instructions (ADR)	P903, P908, P909, P910, P911, LP903, LP904, LP905, LP906
Transport category (ADR)	2
Tunnel restriction code (ADR)	E

Transport by sea

Special provisions (IMDG)	230, 310, 348, 360, 376, 377, 384, 387
Limited quantities (IMDG)	0
Excepted quantities (IMDG)	E0
Packing instructions (IMDG)	P903, P908, P909, P910, P911, LP903, LP904, LP905, LP906
EmS-No. (Fire)	F-A
EmS-No. (Spillage)	S-I
Stowage category (IMDG)	A
Stowage and handling (IMDG)	SW19
Properties and observations (IMDG)	Electrical batteries containing lithium ion encased in a rigid metallic body. Lithium ion batteries may also be shipped in, or packed with, equipment. Electrical lithium batteries may cause fire due to an explosive rupture of the body caused by improper construction or reaction with contaminants.
MFAG-No	138

Air transport

PCA Excepted quantities (IATA)	E0
PCA Limited quantities (IATA)	Forbidden
PCA limited quantity max net quantity (IATA)	Forbidden
PCA packing instructions (IATA)	967
PCA max net quantity (IATA)	5kg
CAO packing instructions (IATA)	967
CAO max net quantity (IATA)	35kg
Special provisions (IATA)	A48, A88, A99, A154, A164, A181, A185, A213, A220
ERG code (IATA)	12FZ

Rail transport

Classification code (RID)	M4
Special provisions (RID)	230, 310, 348, 360, _376, 377, 387, 390, 670
Limited quantities (RID)	0
Excepted quantities (RID)	E0

FX 3-A tool containing lithium ion battery

Safety Data Sheet

according to the United Nations GHS (Rev. 9, 2021)

Packing instructions (RID)	P903, 908, 909, P910, P911, LP903, LP904, LP905, LP906
Transport category (RID)	2
Colis express (express parcels) (RID)	CE2
Hazard identification number (RID)	90

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations specific for the product in question

Regulatory reference Not listed on the United States TSCA (Toxic Substances Control Act) inventory.

SECTION 16: Other information

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Section	Changed item	Change	Comments
1	Trade name	Modified	
14	Transport information	Modified	

Abbreviations and acronyms

CAS-No. - Chemical Abstract Service number
 ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
 ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
 ATE - Acute Toxicity Estimate
 CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
 DNEL - Derived-No Effect Level
 EC50 - Median effective concentration
 ED - Endocrine disrupting properties
 EC-No. - European Community number
 EN - European Standard
 IATA - International Air Transport Association
 IMDG - International Maritime Dangerous Goods
 IOELV - Indicative Occupational Exposure Limit Value
 LC50 - Median lethal concentration
 LD50 - Median lethal dose
 NOEC - No-Observed Effect Concentration
 OECD - Organisation for Economic Co-operation and Development
 N.O.S. - Not Otherwise Specified
 OEL - Occupational Exposure Limit
 PBT - Persistent Bioaccumulative Toxic
 PNEC - Predicted No-Effect Concentration
 REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
 RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
 SDS - Safety Data Sheet
 STP - Sewage treatment plant
 TLM - Median Tolerance Limit
 TRGS - Technical Rules for Hazardous Substances
 VOC - Volatile Organic Compounds
 WGK - Water Hazard Class



FX 3-A tool containing lithium ion battery

Safety Data Sheet

according to the United Nations GHS (Rev. 9, 2021)

vPvB - Very Persistent and Very Bioaccumulative
NOAEL - No-Observed Adverse Effect Level
NOAEC - No-Observed Adverse Effect Concentration
LOAEL - Lowest Observed Adverse Effect Level

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.