

FX 3-A tool containing lithium ion battery

Safety Data Sheet

according to ICOP 2014,2019

Issue date: 05/04/2023

Revision date: 5/4/2023

Supersedes:

Version: 2.1

SECTION 1: Identification of the hazardous chemical and of the supplier

1.1. Product identifier

Name FX 3-A tool containing lithium ion battery

1.2. Other means of identification

Product code BU Direct Fastening

1.3. Recommended use of the chemical and restrictions on use

Recommended use For professional use only
Electrical batteries and accumulators

1.4. Supplier details

Supplier

Hilti (Malaysia) Sdn. Bhd.
F-5-A, Sime Darby Brunsfield Tower, No. 2, Jalan PJU 1A/7A
Oasis Square, Oasis Damansara
47301 Petaling Jaya, Selangor
Malaysia
T +60 3 5628 7222
; 1800 880 985 toll free - F +60 3 7848 7399

Department issuing data specification sheet

Hilti Entwicklungsgesellschaft mbH
Hiltistrasse 6
86916 Kaufering
Deutschland
T +49 8191 906310 - F +49 8191 90176310
df-hse@hilti.com

1.5. Emergency phone number

Emergency number Schweizerisches Toxikologisches Informationszentrum – 24h Service
+41 44 251 51 51 (international)
+60 3 5628 7222
; 1800 880 985 toll free

SECTION 2: Hazards identification

2.1. Classification of the hazardous chemical

Classification according to Industry Code of Practice on chemicals classification and hazard communication (2019)

Not classified

2.2. Label elements

Labelling according to Industry Code of Practice on chemicals classification and hazard communication (2019)

No labelling applicable

2.3. Other hazards that do not result in classification

Other hazards which do not result in 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.

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SECTION 3: Composition and information of the ingredients of the hazardous chemical

3.1. Substances

Not applicable

3.2. Mixtures

Comments	Lithium Ion rechargeable battery pack: Name/Type Energy content (Wh) 16S3P ANR26650 396 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.
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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.
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4.3. Indication of immediate medical attention and special treatment needed, if necessary

Other medical advice or treatment	Treat symptomatically.
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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.
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5.2. Physicochemical 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 equipment and precautions for fire fighters

Hazchem Code	2Y
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.
EAC code	2Y

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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.

6.1.1. For non-emergency personnel

Emergency procedures Evacuate unnecessary personnel.

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.

Reference to other sections (13) For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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.

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.

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.

Hygiene measures

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.

Incompatible materials Sources of ignition. Direct sunlight.

Information on mixed storage Store away from water.

Do not store together with electrically conductive materials.

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.

Storage temperature -20 – 45 °C (humidity: 0% - 80%)

SECTION 8: Exposure controls and personal protection

8.1. Control parameters

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FX 3-A tool containing lithium ion battery	
Malaysia - Occupational Exposure Limits	
Local name	Etil asetat # Ethyl acetate
PEL (OEL TWA) [1]	1440 mg/m ³
PEL (OEL TWA) [2]	400 ppm
MEL (mg/m ³)	4320 mg/m ³
MEL (ppm)	1200 ppm

Exposure limit values for the other components

No additional information available

8.1.1 Biological monitoring

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.

8.3. Individual protection measures, such as 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):



SECTION 9: Physical and chemical properties

Physical state	Solid
Appearance	No data available
Colour	Grey
Odour	No data available
Odour threshold	No data available
pH	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available

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Explosive limits	No data available
Vapour pressure	No data available
Relative vapour density at 20°C	No data available
Relative density	No data available
Solubility	No data available
Partition coefficient n-octanol/water (Log Pow)	No data available
Partition coefficient n-octanol/water (Log Kow)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available
Explosive properties	Risk of explosion by shock, friction, fire or other sources of ignition.

SECTION 10: Stability and reactivity

Reactivity	No additional information available
Chemical stability	Stable under normal conditions
Possibility of hazardous reactions	Heating may cause a fire or explosion.
Conditions to avoid	Direct sunlight, Extremely high or low temperatures, Water, humidity
Incompatible materials	Conductive materials, water, seawater, strong oxidizers and strong acids.
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 or irritation	Not classified (Based on available data, the classification criteria are not met)
Serious eye damage or eye irritation	Not classified (Based on available data, the classification criteria are not met)
Respiratory sensitization	Not classified (Based on available data, the classification criteria are not met)
Skin sensitization	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)
Specific target organ toxicity (STOT) – single exposure	Not classified (Based on available data, the classification criteria are not met)
Specific target organ toxicity (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)
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.

SECTION 12: Ecological information

12.1. Ecotoxicity

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)
Other information	Do not allow battery packs to penetrate the soil. The battery cell may corrode and electrolyte may leak.

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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

FX 3-A tool containing lithium ion battery	
Mobility in soil	No additional information available

12.5. Other adverse effects

Ozone	Not classified (Based on available data, the classification criteria are not met)
Other adverse effects	Do not allow battery packs to penetrate the soil. The battery cell may corrode and electrolyte may leak.

SECTION 13: Disposal information

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: Transportation 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
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

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ADR	IMDG	IATA	RID
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
EAC code	2Y

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
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

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SECTION 15: Regulatory information

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

Regulation	Component/ Mixture	
EHS Notification and Registration Scheme		
Environmental Quality (Chlorofluorocarbons Prohibition) Order 1993	Not applicable	FX 3-A tool containing lithium ion battery
Environmental Quality (Industrial Effluent) Regulations 2009		FX 3-A tool containing lithium ion battery
Environmental Quality (Scheduled Wastes) Regulations 2007		FX 3-A tool containing lithium ion battery
Control of Industrial Major Accident Hazards Regulations 1996		FX 3-A tool containing lithium ion battery
Prohibition of Use of Substance Order 1999		FX 3-A tool containing lithium ion battery
Use and Standards of Exposure of Chemical Hazardous to Health Regulations 2000		FX 3-A tool containing lithium ion battery
Chemical Weapons Convention Act		FX 3-A tool containing lithium ion battery
Corrosive and Explosive Substances and Offensive Weapons Act		FX 3-A tool containing lithium ion battery
Dangerous Drugs Act		FX 3-A tool containing lithium ion battery
Pesticides Act		FX 3-A tool containing lithium ion battery
Petroleum (Safety Measures) Act		FX 3-A tool containing lithium ion battery
Poisons Act 1952		FX 3-A tool containing lithium ion battery
Poisons (Psychotropic Substances) Regulations 1989		FX 3-A tool containing lithium ion battery

15.2. International agreements

No additional information available

SECTION 16: Other information

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

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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
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.