

**BATTERY LITHIUM-FER-PHOSPHATE INFORMATION SHEET**  
**MATERIAL SAFETY DATA SHEET**

**ARTS-Energy Part**

*Issue D on January 07, 2025*

According to REACH regulation (EC 1907/2006, Art 31) and to OSHA regulation (29 CFR 1910.1200), batteries are ARTICLES with no intended release. As such, they are not covered by legal requirements to generate and supply an SDS or an MSDS. This Battery Information Sheet is provided solely as an information document for the purpose of assisting our customers.

**1. Identification of the Company**

<b>Batteries production sites</b>	ARTS Energy 10 rue Ampère - Zone Industrielle 16440 Nersac FRANCE Tel. No. +33 (0)5 45 90 35 50 Fax No. +33 (0)5 45 90 37 65
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**Emergency contacts**                      ARTS Energy local dealer

**2. Composition & Information on components**

Each cell consists of a hermetically sealed metallic container containing a number of chemicals and materials of construction of which the following could potentially be hazardous upon release.0

Component	Content (%)	CAS No.	CHIP Classification
Lithium Iron Phosphate (active material)	20~30%	15365-14-7	N/A
Polyvinylidene Fluoride (binder)	1~4%	24937-79-9	N/A
Carbon black (conductive material)	0.1~2.0%	1333-86-4	N/A
Graphite (active material)	10~20%	7782-42-5	N/A
Organic Solvent (non-aqueous liquid)	10~15%	N/A	N/A

*Amount varies depending on cell size*



### 3. Hazards Identification

#### Emergency Overview

May explode in a fire, which could release hydrogen fluoride gas.  
Use extinguishing media suitable for materials burning in fire.

#### Primary routes of entry

Skin contact : No  
Skin absorption : No  
Eye contact : No  
Inhalation : No  
Ingestion : No

#### Symptoms of exposure

*Skin contact* : No effect under routine handling and use.  
*Skin absorption* : No effect under routine handling and use.  
*Eye contact* : No effect under routine handling and use.  
*Inhalation* : No effect under routine handling and use. Reported as carcinogen

#### Not applicable

Risk of exposure only in case of abuse (mechanical, thermal, electrical) which leads to the activation of safety valves and/or the rupture of the battery container. Electrolyte leakage, electrode materials reaction with moisture/water or battery vent/explosion/fire may follow, depending upon the circumstances.

### 4. First Aid Measures

#### THE CELL OR BATTERY ITSELF

<b>Inhalation</b>	Not a health hazard.
<b>Skin contact</b>	Not a health hazard.
<b>Eye contact</b>	Not a health hazard.
<b>Ingestion</b>	If the product is swallowed, obtain medical attention immediately.

#### IF EXPOSURE TO INTERNAL MATERIALS

<b>Inhalation</b>	Remove from exposure and move to fresh air immediately. Use oxygen if available
<b>Skin contact</b>	Remove contaminated clothes and rinse skin with plenty of water or showered for 15 minutes. Get medical aid
<b>Eye contact</b>	Flush eyes plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid
<b>Ingestion</b>	Give at least 2 glasses of mil or water. Induce vomiting unless patient is unconscious. Get medical aid



## 5. Firefighting Measures

Dust at sufficient concentrations can form an explosive mixture with air. Combustion generates toxic fumes.

### Hazardous combustion products

Carbon dioxide

### Extinguishing Media and Fire-extinguishing Methods

For small fires, use water spray, dry chemical, carbon dioxide or chemical foam.

### Attention in Fire-extinguishing

Wear self-contained breathing apparatus in pressure-demand NIOSH/MSHA (approved or equivalent) and full protective gear.

## 6. Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures

In case of rupture. Attention! Corrosive material. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Refer to protective measures listed in sections 7 and 8.

### Environmental precautions

Prevent product from contaminating soil and entering sewers or waterways.

### Methods and materials for containment

Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately.

### Methods and materials for cleaning up





Absorb spilled material with inert absorbent (dry sand or earth). Scoop contaminated absorbent into an acceptable waste container. Collect all contaminated absorbents and dispose of them according to directions in section 13. Scrub the area with detergent and water; collect all wash water for proper disposal

## 7. Handling and Storage

	<b><i>Do not allow children to replace batteries without adult supervision.</i></b>
<b>Handling</b>	In case of rupture, handle in accordance with good industrial hygiene and safety practices. Avoid contact with skin, eyes or clothing. Use personal protective equipment.
<b>Storage</b>	Store in a cool, dry, well-ventilated area away from incompatible substances. Store locked up. Keep out of reach of children
<b>Other</b>	The battery may explode or cause burns if disassembled, crushed or exposed to fire or high temperatures. Do not short-circuit or install with incorrect polarity



## 8. Exposure Controls & Personal Protection

<b>Occupational exposure standard</b>		Use adequate ventilation to keep airborne concentrations low. When used under conditions that generate particulates, the ACGIH TLV-TWA of 3mg/m <sup>3</sup> respirable fraction (10mg/m <sup>3</sup> total) must be observed.
	<b>Respiratory protection</b>	No protective equipment is needed under normal conditions of use. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
	<b>Hand &amp; Foot protection</b>	None required for consumer use. If there is a risk of contact: Wear protective gloves and protective clothing.
	<b>Eye protection</b>	None protection for consumer use. If there is a risk of contact: Tight sealing safety goggles and/or face protection shield.
	<b>Other</b>	In case of spillage, wear a chemical apron.

## 9. Physical and Chemical Properties

<b>Appearance</b>	Cylindrical or Prismatic Pack, with or without external wires and connector – casings can be added for specific applications
<b>Odour</b>	If leaking, smells of medical ether
<b>pH</b>	Not Applicable
<b>Flash point</b>	Not applicable unless individual components exposed
<b>Flammability</b>	Not applicable unless individual components exposed
<b>Relative density</b>	Not applicable unless individual components exposed
<b>Solubility (water)</b>	Not applicable unless individual components exposed
<b>Solubility (other)</b>	Not applicable unless individual components exposed

## 10. Stability and Reactivity

Product is stable under conditions described in Section 7.	
<b>Conditions to avoid</b>	Flames, sparks and other sources of ignition, incompatible materials
<b>Materials to avoid</b>	Oxidizing agents, acid base
<b>Hazardous decomposition Products</b>	Carbon monoxide, carbon dioxide, lithium oxide fumes



## 11. Toxicological Information

<b>Irritation</b>	In the event of exposure to internal contents, vapour fumes may be very irritating to the eyes and skin
<b>Sensitization</b>	Not Available.
<b>Reproductive Toxicity</b>	Not Available.
<b>Toxicologically Synergistic Materials</b>	Not Available.

## 12. Ecological Information

<b>General note</b>	Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system
<b>Anticipated behavior of a chemical product in environment / possible environmental impact / ecotoxicity</b>	Not Available.

## 13. Disposal Considerations

Recycle or dispose of in accordance with government, state and local regulations.  
Deserted batteries couldn't be treated as ordinary trash. Couldn't be thrown into fire or placed in high temperature.  
Couldn't be dissected, pierced, crushed or treated similarly. Best way is recycling.

## 14. Transport Information

The persons in charge of the transport of dangerous goods must be instructed in the contents of dangerous goods according to their responsibilities (chapter 1.3, UN recommendations on the transport of dangerous goods).

To verify that ARTS Energy cells or batteries have been tested for transport in accordance with the UN Model Regulations, Manual of Tests and Criteria, Part III, sub-section 38.3, please contact us with the cell or battery reference number on the transport documents (waybill or packing slip) in order to receive a PDF copy of the UN 38.3 test summary report for the product being shipped.

### UN Class 9 Other hazardous materials

Nom d'expédition	Classe	UN number
Li-ion batteries	9	3480
Li-ion batteries contained in the equipment	9	3481
Li-ion batteries packed with the equipment	9	3481

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Applicable UN transport regulations must be observed.



## 15. Regulatory Information

OSHA hazard communication standard (29 CFR 1910.1200)

<b>Risk phrases</b>	Non-hazardous.
<b>UK regulatory references</b>	Classified under CHIP

## 16. Other information

This information has been compiled from sources considered to be dependable and is, to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty (either expressed or implied) or guarantee is made to the accuracy, reliability or completeness of the information contained herein.

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