



FLITECELL (UN3481)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 2/13/2026 Version: 1.0

SECTION 1 Identification

1.1. Product identifier

Product form : Article
Product name : FLITECELL (UN3481)

1.2. Other means of identification

Other means of identification : FLITECELL EXPLORE
FLITECELL SPORT
FLITECELL NANO
MN FLITECELL EXPLORE
MN FLITECELL SPORT
MN FLITECELL NANO

1.3. Recommended use of the chemical and restrictions on use

Intended for general public
Use of the substance/mixture : Electrical batteries and accumulators

1.4. Supplier's details

Fliteboard Pty Ltd
Unit 4, 18 Banksia Drive
Byron Bay, NSW 2481
Australia
T APAC Enquiries: +61251189888
T EMEA Enquiries: +31 648 013 732
T Americas Enquiries: +1 833 359 0940
info@fliteboard.com - www.fliteboard.com

1.5. Emergency phone number

Emergency number : **24/7 Emergency Contact Numbers**

AT: +43 1 3649237 or 0800 293702
AU: +61 2 9037 2994 or 1800 862 115
BE: +32 2 808 32 37
CA: +1 703-741-5970
CH: +41-435082011
DE: 0800 1817059 or +43 1 3649237
ES: +34-931768545 or 900 868 538
FR: +33 9 75 18 14 07
GR: +30 21 1176 8478
IT: +39 02 4555 7031 or 800 789 767
LU: +352 20 20 24 16
NL: +31 85 888 0596
NZ: +64 9-801 0034 or 0800 425 459
PL: +48 22 398 80 29
UK: +44 20 3807 3798
US: +1 703-741-5970

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SECTION 2 Hazard Identification

2.1. Classification of the substance or mixture

GHS US classification

Not classified

2.2. Label elements

According to the corresponding national regulations there is no labelling obligation for this product.

2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

2.4. Hazards not otherwise classified

No additional information available

2.5. Unknown acute toxicity

No additional information available

SECTION 3 Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	Conc. (% w/w)	GHS US classification
Aluminum	CAS-No.: 7429-90-5	15 – 70	Not classified
	CAS-No.: 12190-79-3	< 60	Skin Sens. 1, H317 Carc. 1A, H350
Manganese	CAS-No.: 7439-96-5	< 60	Not classified
Nickel	CAS-No.: 7440-02-0	< 60	Skin Sens. 1, H317 Carc. 2, H351
Ethylene carbonate	CAS-No.: 96-49-1	< 25	Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 STOT RE 2, H373
propylene carbonate	CAS-No.: 108-32-7	< 25	Eye Irrit. 2, H319
ethyl methyl carbonate	CAS-No.: 623-53-0	< 25	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335
copper	CAS-No.: 7440-50-8	5 – 20	Not classified
Graphite	CAS-No.: 7782-42-5	< 20	Not classified
Carbon black	CAS-No.: 1333-86-4	< 20	Carc. 2, H351
Lithium hexafluorophosphate(1-)	CAS-No.: 21324-40-3	1 – 10	Acute Tox. 3 (Oral), H301 Skin Corr. 1A, H314 STOT RE 1, H372

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Full text of hazard classes and H-statements : see section 16

SECTION 4 First aid measures

4.1. Description of necessary first-aid measures

First-aid measures general	: This information is of relevance only if the battery is broken and this results in a direct contact with the ingredients. If medical advice is needed, have product container or label at hand. Seek medical attention immediately. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
First-aid measures after skin contact	: Wash skin with plenty of water. Remove/Take off immediately all contaminated clothing. Get immediate medical attention.
First-aid measures after eye contact	: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. immediate medical advice.
First-aid measures after ingestion	: Rinse mouth out with water. Do NOT induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. immediate medical advice.

4.2. Most important symptoms/effects, acute and delayed

Symptoms/effects	: Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after inhalation	: Inhalation of material from a sealed battery is not an expected exposure route. Vapors or mists from a ruptured battery may cause respiratory irritation.
Symptoms/effects after skin contact	: Contact between the battery and skin will not cause any harm. Skin contact with positive and negative terminals of high voltages may cause burns to the skin. Skin contact with a ruptured or shorted battery can cause chemical burns or irritation upon contact with the skin.
Symptoms/effects after eye contact	: Contact between the battery and eye will not cause any harm. Eye contact with the contents of a ruptured battery can cause severe irritation to the eye.
Symptoms/effects after ingestion	: Swallowing of material from a sealed battery is not an expected exposure route. Swallowing mists from a ruptured battery may cause respiratory irritation, chemical burns of the mouth and gastrointestinal tract irritation.

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 (and unsuitable) extinguishing media

Suitable extinguishing media	: Dry powder. Carbon dioxide. Sand.
Unsuitable extinguishing media	: Water.

5.2. Specific hazards arising from the chemical

Explosion hazard	: Explosion risk in case of fire.
Hazardous decomposition products in case of fire	: Toxic fumes may be released. Carbon oxides (CO, CO2). Metallic oxides.

5.3. Special protective equipment and precautions 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 environment.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

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SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : If the battery material is released, remove personnel from the area until fumes dissipate. Ventilate the area to remove the hazardous gases. Leave the area and allow the batteries to cool. Avoid skin and eye contact or inhalation of vapors.

For non-emergency personnel

Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel.

For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

Environmental precautions : Avoid release to the environment.

6.2. Methods and materials for containment and cleaning up

Methods for cleaning up : Mechanically recover the product.

Other information : Dispose of materials or solid residues at an authorized site.

For further information refer to section 8: "Exposure controls/personal protection". Concerning disposal elimination after cleaning, see item 13.

SECTION 7 Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful. Concerning personal protective equipment to use, see item 8. Provide good ventilation in process area to prevent formation of vapor.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including incompatibilities

Technical measures : Charging:
There is a possible risk of electric shock from charging equipment and from strings of series connected batteries, whether or not being charged. Shut-off power to chargers whenever not in use and before detachment of any circuit connections. Charging space should be ventilated.

Storage conditions : Keep only in the original container in a cool well ventilated place. Keep container closed when not in use.

Incompatible products : Strong acids. Strong bases. Strong oxidizing agent.

Heat-ignition : Keep away from heat and direct sunlight.

SECTION 8 Exposure controls/personal protection

8.1. Control parameters

copper (7440-50-8)

USA - ACGIH® - Threshold Limit Values

Local name	Copper, as Cu
ACGIH® TLV® TWA	0.2 mg/m ³ (Fume) 1 mg/m ³ (Dusts and mists)

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copper (7440-50-8)	
Remark (ACGIH®)	TLV® Basis: Irr; GI; metal fume fever
Regulatory reference	ACGIH 2025
USA - OSHA - Occupational Exposure Limits	
Local name	Copper
OSHA PEL TWA	1 mg/m³ (Dusts and mists (as Cu)) 0.1 mg/m³ (Fume (as Cu))
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
USA - NIOSH - Occupational Exposure Limits	
Local name	Copper
NIOSH REL 10h TWA	1 mg/m³ (Dusts and mists (as Cu)) 0.1 mg/m³ (Fume (as Cu))
Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-1 (NIOSH Pocket Guide to Chemical Hazards (NPG))
Aluminum (7429-90-5)	
USA - ACGIH® - Threshold Limit Values	
Local name	Aluminum, metal and insoluble compounds
ACGIH® TLV® TWA	1 mg/m³ (R - Respirable particulate matter)
Remark (ACGIH®)	TLV® Basis: Pneumoconiosis; LRT irr; neurotoxicity. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2025
USA - OSHA - Occupational Exposure Limits	
Local name	Aluminum Metal (as Al)
OSHA PEL TWA	15 mg/m³ (Total dust) 5 mg/m³ (Respirable fraction)
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
USA - NIOSH - Occupational Exposure Limits	
Local name	Aluminum Metal (as Al)
NIOSH REL 10h TWA	10 mg/m³ (Total dust) 5 mg/m³ (Respirable fraction)
Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-1 (NIOSH Pocket Guide to Chemical Hazards (NPG))
Manganese (7439-96-5)	
USA - ACGIH® - Threshold Limit Values	
Local name	Manganese, elemental and inorganic compounds, as Mn
ACGIH® TLV® TWA	0.1 mg/m³
Remark (ACGIH®)	TLV® Basis: CNS impair. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2025
USA - OSHA - Occupational Exposure Limits	
Local name	Manganese
OSHA PEL (Ceiling)	5 mg/m³

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Manganese (7439-96-5)	
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
USA - IDLH - Occupational Exposure Limits	
IDLH	500 mg/m ³
USA - NIOSH - Occupational Exposure Limits	
Local name	Manganese
NIOSH REL (TWA)	1 mg/m ³
NIOSH REL 10h TWA	1 mg/m ³ fume (as Mn) 1 mg/m ³ compounds (as Mn)
NIOSH REL (STEL)	3 mg/m ³
Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-1 (NIOSH Pocket Guide to Chemical Hazards (NPG))
Nickel (7440-02-0)	
USA - ACGIH® - Threshold Limit Values	
Local name	Nickel, Elemental/Metal, as Ni
ACGIH® TLV® TWA	1.5 mg/m ³ (I - Inhalable particulate matter)
Remark (ACGIH®)	TLV® Basis: Dermatitis; pneumoconiosis. Notations: A5 (Not Suspected as a Human Carcinogen)
Regulatory reference	ACGIH 2025
USA - ACGIH® - Biological Exposure Indices	
Local name	Nickel and inorganic compounds
BEI (BLV)	5 µg/l Parameter: Nickel - Medium: urine after exposure to elemental Nickel and poorly soluble compounds - Sampling time: Post-shift at end of workweek - Notations: B 30 µg/l Parameter: Nickel - Medium: urine after exposure to soluble compounds - Sampling time: Post-shift at end of workweek
Regulatory reference	ACGIH 2025
USA - OSHA - Occupational Exposure Limits	
Local name	Nickel
OSHA PEL TWA	1 mg/m ³ metal and insoluble compounds (as Ni) 1 mg/m ³ soluble compounds (as Ni)
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
USA - NIOSH - Occupational Exposure Limits	
Local name	Nickel
NIOSH REL 10h TWA	0.015 mg/m ³ metal and insoluble compounds (as Ni) 0.015 mg/m ³ soluble compounds (as Ni)
Remark (NIOSH)	Ca = Potential occupational carcinogens
Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-1 (NIOSH Pocket Guide to Chemical Hazards (NPG))
Graphite (7782-42-5)	
USA - ACGIH® - Threshold Limit Values	
Local name	Graphite, all forms except graphite fibers
ACGIH® TLV® TWA	2 mg/m ³ (R - Respirable particulate matter)

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Graphite (7782-42-5)	
Remark (ACGIH®)	TLV® Basis: Pneumoconiosis
Regulatory reference	ACGIH 2025
USA - OSHA - Occupational Exposure Limits	
Local name	Graphite (Natural)
OSHA PEL TWA	15 mg/m³
	15 mppcf
Remark (OSHA)	Table Z-3. CAS No. source: eCFR Table Z-1.
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-3 Mineral Dusts
USA - NIOSH - Occupational Exposure Limits	
Local name	Graphite (Natural)
NIOSH REL (TWA)	2.5 mg/m³
NIOSH REL 10h TWA	2.5 mg/m³ (Respirable fraction)
Remark (NIOSH)	(respirable dust)
Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-3 Mineral Dusts (NIOSH Pocket Guide to Chemical Hazards (NPG))
Carbon black (1333-86-4)	
USA - ACGIH® - Threshold Limit Values	
Local name	Carbon black
ACGIH® TLV® TWA	3.5 mg/m³
Remark (ACGIH®)	TLV® Basis: Bronchitis. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
Regulatory reference	ACGIH 2025
USA - OSHA - Occupational Exposure Limits	
Local name	Carbon black
OSHA PEL TWA	3.5 mg/m³
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
USA - NIOSH - Occupational Exposure Limits	
Local name	Carbon black
NIOSH REL (TWA)	3.5 mg/m³
NIOSH REL 10h TWA	3.5 mg/m³ (without PAHs)
NIOSH REL (STEL)	0.1 mg/m³
Remark (NIOSH)	When PAHs are present, NIOSH considers carbon black to be a potential occupational carcinogen
Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-1 (NIOSH Pocket Guide to Chemical Hazards (NPG))

8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station. hazards in case of damaged / ruptured battery.
Environmental exposure controls	: Avoid release to the environment.

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8.3. Individual protection measures, such as personal protective equipment

Personal protective equipment:

Gloves. Safety glasses. Protective clothing.

Hand protection:				
Wear suitable gloves resistant to chemical penetration. Chemical resistant gloves (according to European standard NF ISO 374-1 or equivalent)				
Type	Material	Permeation	Thickness (mm)	Penetration
Gloves	Polyvinylchloride (PVC), Nitrile rubber (NBR)	6 (> 480 minutes)	>0.11	
Eye protection:				
Safety glasses. DIN EN 166				
Skin and body protection:				
Wear suitable protective clothing. ISO 13688				
Respiratory protection:				
No special respiratory protection equipment is recommended under normal conditions of use with adequate ventilation. In case of inadequate ventilation wear respiratory protection. EN 143				

Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

SECTION 9 Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state	: Solid
Color	: Colorless
Odor	: odorless
Odor 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
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Solubility	: insoluble in water.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Explosion limits	: No data available
Particle characteristics	: No data available

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

No additional information available

SECTION 10 Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful. Do not immerse in water, short circuit or overcharge. Keep away from heat and direct sunlight.

10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizing agent.

10.6. Hazardous decomposition products

Metal oxides. Carbon oxides (CO, CO₂). Explosion risks of vapors.

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)

Lithium hexafluorophosphate(1-) (21324-40-3)

ATE US (oral)	100 mg/kg body weight
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Ethylene carbonate (96-49-1)

ATE US (oral)	500 mg/kg body weight
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propylene carbonate (108-32-7)

LD50 oral rat	> 5000 mg/kg
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LD50 dermal rabbit	> 3000 mg/kg
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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 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)

Nickel (7440-02-0)

IARC group	2B - Possibly carcinogenic to humans
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National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen
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Carbon black (1333-86-4)	
IARC group	2B - Possibly carcinogenic to humans
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)
ethyl methyl carbonate (623-53-0)	
STOT-single exposure	May cause respiratory irritation.
STOT-repeated exposure	: Not classified (Based on available data, the classification criteria are not met)
Lithium hexafluorophosphate(1-) (21324-40-3)	
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Ethylene carbonate (96-49-1)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)
Symptoms/effects	: Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after inhalation	: Inhalation of material from a sealed battery is not an expected exposure route. Vapors or mists from a ruptured battery may cause respiratory irritation.
Symptoms/effects after skin contact	: Contact between the battery and skin will not cause any harm. Skin contact with positive and negative terminals of high voltages may cause burns to the skin. Skin contact with a ruptured or shorted battery can cause chemical burns or irritation upon contact with the skin.
Symptoms/effects after eye contact	: Contact between the battery and eye will not cause any harm. Eye contact with the contents of a ruptured battery can cause severe irritation to the eye.
Symptoms/effects after ingestion	: Swallowing of material from a sealed battery is not an expected exposure route. Swallowing mists from a ruptured battery may cause respiratory irritation, chemical burns of the mouth and gastrointestinal tract irritation.

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)

propylene carbonate (108-32-7)	
LC50 - Fish [1]	> 1000 mg/l

12.2. Persistence and degradability

FLITECELL (UN3481)	
Persistence and degradability	Not applicable.
Lithium hexafluorophosphate(1-) (21324-40-3)	
Persistence and degradability	Readily biodegradable.
Ethylene carbonate (96-49-1)	
Persistence and degradability	Readily biodegradable.
propylene carbonate (108-32-7)	
Persistence and degradability	Biodegradability in water: no data available.

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ethyl methyl carbonate (623-53-0)	
Persistence and degradability	Biodegradability in water: no data available.
copper (7440-50-8)	
Persistence and degradability	Biodegradability in water: no data available.
Aluminum (7429-90-5)	
Persistence and degradability	Biodegradability in water: no data available.
(12190-79-3)	
Persistence and degradability	Biodegradability in water: no data available.
Manganese (7439-96-5)	
Persistence and degradability	Biodegradability in water: no data available.
Nickel (7440-02-0)	
Persistence and degradability	Biodegradability in water: no data available.
Graphite (7782-42-5)	
Persistence and degradability	Biodegradability in water: no data available.
Carbon black (1333-86-4)	
Persistence and degradability	Biodegradability in water: no data available.

12.3. Bioaccumulative potential

No additional information available

12.4. 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)
Fluorinated greenhouse gases : No

SECTION 13 Disposal considerations

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Additional information : Empty containers should be taken for recycling, recovery or waste in accordance with local regulation.
Ecological waste information : Avoid release to the environment.

SECTION 14 Transport information

In accordance with DOT / TDG / IMDG / IATA

DOT	TDG	IMDG	IATA
14.1. UN number			
UN3481	UN3481	3481	3481
14.2. Proper Shipping Name			
Lithium ion batteries packed with equipment	LITHIUM ION BATTERIES PACKED WITH EQUIPMENT	LITHIUM ION BATTERIES PACKED WITH EQUIPMENT	Lithium ion batteries packed with equipment

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DOT	TDG	IMDG	IATA
Transport document description			
UN3481 Lithium ion batteries packed with equipment, 9	UN3481 LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, 9	UN 3481 LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, 9	UN 3481 Lithium ion batteries packed with equipment, 9
14.3. Transport hazard class(es)			
9	9	9	9
			
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	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No
No supplementary information available			

14.6. Transport in bulk

Not applicable

14.7. Special precautions for user

DOT

UN-No. (DOT)

: UN3481

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DOT Special Provisions (49 CFR 172.102)	: 181 - When a package contains a combination of lithium batteries contained in equipment and lithium batteries packed with equipment, the following requirements apply: a. The shipper must ensure that all applicable requirements of §173.185 of this subchapter are met. The total mass of lithium batteries contained in any package must not exceed the quantity limits in columns (9A) and (9B) for passenger aircraft or cargo aircraft, as applicable; b. Except as provided in §173.185(c)(3) of this subchapter, the package must be marked "UN 3091 Lithium metal batteries packed with equipment", or "UN 3481 Lithium ion batteries packed with equipment," as appropriate. If a package contains both lithium metal batteries and lithium ion batteries packed with and contained in equipment, the package must be marked as required for both battery types. However, button cell batteries installed in equipment (including circuit boards) need not be considered; and c. The shipping paper must indicate "UN 3091 Lithium metal batteries packed with equipment" or "UN 3481 Lithium ion batteries packed with equipment," as appropriate. If a package contains both lithium metal batteries and lithium ion batteries packed with and contained in equipment, then the shipping paper must indicate both "UN 3091 Lithium metal batteries packed with equipment" and "UN 3481 Lithium ion batteries packed with equipment." 388 - a. Lithium batteries containing both primary lithium metal cells and rechargeable lithium ion cells that are not designed to be externally charged, must meet the following conditions: i. The rechargeable lithium ion cells can only be charged from the primary lithium metal cells; ii. Overcharge of the rechargeable lithium ion cells is precluded by design; iii. The battery has been tested as a primary lithium battery; and iv. Component cells of the battery must be of a type proved to meet the respective testing requirements of the Manual of Tests and Criteria, part III, subsection 38.3 (IBR, see 171.7 of this subchapter). b. Lithium batteries conforming to paragraph a. of this special provision must be assigned to UN Nos. 3090 or 3091, as appropriate. When such batteries are transported in accordance with 173.185(c), the total lithium content of all lithium metal cells contained in the battery must not exceed 1.5 g and the total capacity of all lithium ion cells contained in the battery must not exceed 10 Wh. 422 - When labelling is required, the label to be used must be the label shown in §172.447. Labels conforming to requirements in place on December 31, 2016 may continue to be used until December 31, 2018. When a placard is displayed, the placard must be the placard shown in §172.560. A54 - Lithium batteries or lithium batteries contained or packed with equipment that exceed the maximum gross weight allowed by Column (9B) of the 172.101 Table may only be transported on cargo aircraft if approved by the Associate Administrator.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 185
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 185
DOT Packaging Bulk (49 CFR 173.xxx)	: 185
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 5 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 35 kg
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
TDG UN-No. (TDG)	: UN3481

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TDG Special Provisions

- : 34 - (1) These Regulations, except for Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) and Part 2 (Classification), do not apply to the handling, offering for transport or transporting of lithium cells and batteries on a road vehicle, a railway vehicle or a vessel on a domestic voyage if
- (a) for a lithium metal or lithium alloy cell, the lithium content is not more than 1 g, and, for a lithium-ion cell, the watt-hour rating is not more than 20 Wh;
 - (b) for a lithium metal or lithium alloy battery, the aggregate lithium content is not more than 2 g, and for a lithium-ion battery, the watt-hour rating is not more than 100 Wh;
 - (c) lithium ion batteries are marked with the watt-hour rating on the outside case, except for those manufactured before January 1, 2009;
 - (d) each cell and battery type passes each of the tests set out in paragraph 2.43.1(2)(a) of Part 2 (Classification);
 - (e) the cells and batteries are afforded protection against short circuit, including protection against contact with conductive materials within the same packaging that could lead to a short circuit;
 - (f) the cells and batteries are packed in a means of containment that completely encloses the cells and batteries;
 - (g) the gross mass of the cells and batteries does not exceed 30 kg, except when the cells and batteries are installed in or packed with equipment; and
 - (h) the cells and batteries are packed in a means of containment capable of withstanding a 1.2 m drop test in any orientation without damage to the cells or batteries contained inside the means of containment, without the contents shifting so as to allow battery-to-battery or cell-to-cell, contact, and without release of contents.
- (2) Cells and batteries referred to in subsection (1) that are installed in equipment must, unless they are afforded equivalent protection by the equipment in which they are contained,
- (a) be afforded protection against damage and short circuit, including protection against contact with conductive materials within the same packaging that could lead to a short circuit;
 - (b) subject to subsection (3), be fitted to prevent accidental activation; and
 - (c) be packed in a means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no release of the dangerous goods that could endanger public safety.
- (3) Paragraph (2)(b) does not apply to cells and batteries installed in devices that are intentionally active during transport such as radio frequency identification transmitters, watches and sensors, and that are not capable of generating a dangerous evolution of heat.
- (4) Except for means of containment containing button cell batteries installed in equipment, including circuit boards, or no more than four cells installed in equipment or no more than two batteries installed in equipment, each means of containment must be marked with the appropriate lithium battery mark in accordance with section 4.24.
- (5) Despite subsection (4), except for means of containment containing button cell batteries installed in equipment, including circuit boards, or no more than four cells installed in equipment or no more than two batteries installed in equipment, each means of containment may, until December 31, 2018, be marked with the following:
- (a) "lithium metal", "lithium métal", "lithium ion" or "lithium ionique", as appropriate;
 - (b) an indication that the means of containment must be handled with care and that a flammability hazard exists if the means of containment is damaged;
 - (c) an indication that special procedures must be followed in the event the means of containment is damaged, including inspection and repacking, if necessary; and
 - (d) a telephone number to call for additional information, 123 - (1) The testing requirements in subsection 38.3 of Part III of the Manual of Tests and Criteria do not apply to production runs consisting of not more than 100 cells and batteries or to pre-production prototypes of cells and batteries that are transported on a road vehicle, a railway vehicle or a vessel on a domestic voyage if
- (a) the cells or batteries are imported, offered for transport, handled or transported in accordance with Packing Instruction P910 of the UN Recommendations; and
 - (b) the pre-production prototypes of cells and batteries are in transport for the purpose of testing.
- (2) Despite paragraph (1)(b), batteries that have a total mass of 12 kg or more and that have a strong, impact-resistant outer casing, or assemblies of them, may be packed in an outer means of containment or protective enclosure designed, constructed, filled, closed, secured and

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maintained so that under normal conditions of transport, including handling, there will be no release of the dangerous goods that could endanger public safety. The batteries or battery assemblies must be protected from short-circuit, 137 - (1) This shipping name applies to lithium ion cells or batteries, and lithium metal cells or batteries, that are damaged or defective and do not conform to subsection 2.43.1(2) of Part 2 (Classification).

(2) Lithium ion cells or batteries and lithium metal cells or batteries that are damaged or defective, include, but are not limited to, cells or batteries that have leaked or vented, or have sustained physical or mechanical damage, and cannot be diagnosed prior to transport, or that have been identified as being defective for safety reasons.

(3) Lithium ion cells or batteries and lithium metal cells or batteries that are damaged or defective must be packed in accordance with Packing Instructions P908 or LP904 of the UN Recommendations, as applicable.

(4) As applicable, the outer means of containment or the overpack must be marked legibly and visibly on a contrasting background, with the words "Damaged/Defective Lithium Ion Batteries", "piles au lithium ionique endommagées/défectueuses", "Damaged/Defective Lithium Metal Batteries" or "piles au lithium métal endommagées/défectueuses".

(5) It is forbidden to transport lithium ion cells or batteries and lithium metal cells or batteries that are damaged or defective and that, under normal conditions of transport, are liable to disassemble rapidly, react dangerously, produce a flame or a dangerous evolution of heat, or produce a dangerous emission of toxic, corrosive or flammable gases or vapors.

(6) It is forbidden to transport by aircraft lithium ion cells or batteries and lithium metal cells or batteries that are damaged or defective, 138 - (1) When transported for disposal or recycling, lithium ion cells or batteries and lithium metal cells or batteries, or equipment containing those cells or batteries,

(a) are not subject to subsection 2.43.1(2) of Part 2 (Classification);

(b) must be packed in accordance with Packing Instructions P909 or LP904 of the UN Recommendations, as applicable, whether packed with or without non-lithium cells or batteries or equipment containing those cells or batteries;

(c) must be in a means of containment or an overpack that is marked legibly and visibly on a contrasting background with the words "Lithium batteries for disposal", "Piles au lithium destinées à l'élimination", "Lithium batteries for recycling" or "Piles au lithium destinées au recyclage", as appropriate; and

(d) are forbidden for transport by aircraft.

(2) Damaged or defective cells and batteries must be offered for transport or transported under special provision 137,159 - (1) Subject to subsection (2), the label to be used for these dangerous goods is the one illustrated under the heading for lithium batteries "Class 9, Lithium Batteries" in the appendix to Part 4 (Dangerous Goods Safety Marks).

(2) The generic Class 9 label may be used until December 31, 2018.

Explosive Limit and Limited Quantity Index : 0
Excepted quantities (TDG) : E0
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index : 5 kg
Emergency Response Guide (ERG) Number : 147

IMDG

Special provision (IMDG) : 188, 230, 310, 348, 360, 376, 377, 384, 387, 390
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 - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE
EmS-No. (Spillage) : S-I - SPILLAGE SCHEDULE India - FLAMMABLE SOLIDS (REPACKING POSSIBLE)
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.

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IATA

Special provision (IATA)	: A88, A99, A154, A181, A185, A213, A802
PCA Excepted quantities (IATA)	: E0
PCA Limited quantities (IATA)	: Forbidden
PCA limited quantity max net quantity (IATA)	: Forbidden
PCA packing instructions (IATA)	: 966
PCA max net quantity (IATA)	: 5kg
CAO packing instructions (IATA)	: 966
CAO max net quantity (IATA)	: 35kg
ERG code (IATA)	: 12FZ

SECTION 15 Regulatory information

15.1. Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory, except for:

Steel, Nickel, and inert components	CAS-No.	0 – 100%
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Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

copper	CAS-No. 7440-50-8	5 – 20%
Aluminum	CAS-No. 7429-90-5	15 – 70%
Manganese	CAS-No. 7439-96-5	< 60%
Nickel	CAS-No. 7440-02-0	< 60%

copper (7440-50-8)

CERCLA RQ	5000 lb
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Manganese (7439-96-5)

Listed on EPA Hazardous Air Pollutant (HAPS)
Listed on EPA HAPs Chronic Dose Response Assessment List - Carcinogens
Listed on EPA HAPs Acute Dose Response Assessment List – Exposure limits

Nickel (7440-02-0)

Listed on EPA Hazardous Air Pollutant (HAPS)
Listed on EPA HAPs Chronic Dose Response Assessment List - Carcinogens
Listed on EPA HAPs Acute Dose Response Assessment List – Exposure limits

CERCLA RQ	100 lb
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15.2. International regulations

CANADA

Lithium hexafluorophosphate(1-) (21324-40-3)

Listed on the Canadian NDSL (Non-Domestic Substances List)

Ethylene carbonate (96-49-1)

Listed on the Canadian DSL (Domestic Substances List)

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propylene carbonate (108-32-7)

Listed on the Canadian DSL (Domestic Substances List)

ethyl methyl carbonate (623-53-0)

Listed on the Canadian NDSL (Non-Domestic Substances List)

copper (7440-50-8)

Listed on the Canadian DSL (Domestic Substances List)

Aluminum (7429-90-5)

Listed on the Canadian DSL (Domestic Substances List)

(12190-79-3)

Listed on the Canadian DSL (Domestic Substances List)

Manganese (7439-96-5)

Listed on the Canadian DSL (Domestic Substances List)

Nickel (7440-02-0)

Listed on the Canadian DSL (Domestic Substances List)

Graphite (7782-42-5)

Listed on the Canadian DSL (Domestic Substances List)

Carbon black (1333-86-4)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Manganese (7439-96-5)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

propylene carbonate (108-32-7)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

copper (7440-50-8)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Aluminum (7429-90-5)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

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Manganese (7439-96-5)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Japanese Pollutant Release and Transfer Register Law (PRTR Law)
Listed on EPA HAPs Chronic Dose Response Assessment List - Carcinogens
Listed on EPA HAPs Acute Dose Response Assessment List – Exposure limits
Listed on INSQ (Mexican National Inventory of Chemical Substances)

Nickel (7440-02-0)

Listed on IARC (International Agency for Research on Cancer)
Listed as carcinogen on NTP (National Toxicology Program)
Listed on EPA HAPs Chronic Dose Response Assessment List - Carcinogens
Listed on EPA HAPs Acute Dose Response Assessment List – Exposure limits
Listed on INSQ (Mexican National Inventory of Chemical Substances)

Graphite (7782-42-5)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Carbon black (1333-86-4)

Listed on IARC (International Agency for Research on Cancer)
Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. State regulations



WARNING:

This product can expose you to Nickel (Metallic), which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Lithium-ion batteries and products that contain lithium-ion batteries can expose you to chemicals including cobalt lithium nickel oxide, and nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

SECTION 16 Other information

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Issue date	: 2/13/2026
Data sources	: ECHA (European Chemicals Agency). according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations. Supplier's safety documents. GB MCL.
Other information	: DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable. REACH Disclaimer: This information is based on current knowledge. Consistency of data in the SDS with CSR is considered, as far as the information is available at the time of compilation (cfr Revision date and Version number).

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Full text of hazard classes and H-statements	
H226	Flammable liquid and vapor
H301	Toxic if swallowed
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H350	May cause cancer.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure
H373	May cause damage to organs through prolonged or repeated exposure

Abbreviations and acronyms	
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ATE	Acute Toxicity Estimate
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LD50	Median lethal dose
PBT	Persistent Bioaccumulative Toxic
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
vPvB	Very Persistent and Very Bioaccumulative
GHS	GHS: Globally Harmonized System of Classification and Labelling of Chemicals

NFPA health hazard

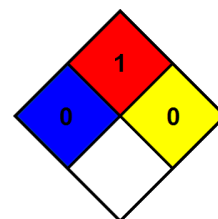
: 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard

: 1 - Materials that must be preheated before ignition can occur.

NFPA reactivity

: 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health

: 0 Minimal Hazard - No significant risk to health

Flammability

: 0 Minimal Hazard - Materials that will not burn

Physical

: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

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