



Safety Data Sheet

LiFePO₄ Battery 24V50AH 25.6V, 50Ah, 1280Wh

SDS Revision
Date: 06/22/2026

Section 1. Identification

Product identifier

Product Identity

PKG's:

14-860270-000 PKG MAX Battery Retrofit Kit

Batteries Only:

14-101957-007 ASSY. Lithium Battery & Cable

14-101881-000 Lithium-Ion Battery for MAX/ENVOY

MAX Machines:

14-860500-021 Pkg. MAX, Lit w/ACDC 115V Black

14-860500-022 Pkg. MAX, Lit w/ACDC 115V Green

14-860500-221 Pkg. MAX, Lit w/ACDC 230V Black

14-860500-222 Pkg. MAX, Lit w/ACDC 230V Green

14-860500-041 Pkg. MAX, Battery Only, 115V Black

14-860500-042 Pkg. MAX, Battery Only, 115V Green

14-860500-241 Pkg. MAX, Battery Only, 230V Black

14-860500-242 Pkg. MAX, Battery Only, 230V Green

14-860508-021 Pkg. MAX-X, Lit w/ACDC 115V Black

14-860508-022 Pkg. MAX-X, Lit w/ACDC 115V Green

14-860508-221 Pkg. MAX-X, Lit w/ACDC 230V Black

14-860508-222 Pkg. MAX-X, Lit w/ACDC 230V Green

14-860508-041 Pkg. MAX-X, Battery Only, 115V Black

14-860508-042 Pkg. MAX-X, Battery Only, 115V Green

14-860508-241 Pkg. MAX-X, Battery Only, 230V Black

14-860508-242 Pkg. MAX-X, Battery Only, 230V Green

Refurbished Machines:

14860500602 - Refurb Max Green (Poor)

14860500603 - Refurb Max Green (Fair)

14860500604 - Refurb Max Green (Good)

14860500612 - Refurb Max Black (Poor)

14860500613 - Refurb Max Black (Fair)

14860500614 - Refurb Max Black (Good)

14860204602 - Refurb Envoy+ BC (Poor)

14860204603 - Refurb Envoy+ BC (Fair)

14860204604 - Refurb Envoy+ BC (Good)

14860203602 - Refurb Envoy+ (Poor)

14860203603 - Refurb Envoy+ (Fair)

14860203604 - Refurb Envoy+ (Good)

Other means of identification

LiFePO₄ Battery 24V50AH25.6V, 50Ah, 1280Wh

Relevant identified uses of the substance or mixture and uses advised against

See Technical Data Sheet.

Details of the supplier of the safety data sheet

Company Name

Brunswick Bowling Products, LLC.

525 W. Laketon Ave.

Muskegon, MI 49441 USA

Emergency

24 hour Emergency Telephone No.

CHEMTEL +1 813-248-0585

Customer Service:

231-725-4966

Section 2. Hazard(s) identification

Under normal conditions of processing and use, exposure to the chemical constituents in this product is unlikely. The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful. Hazards shown here apply to exposure that may occur from damaged or leaking batteries or under extreme heat conditions such as fire.

Classification of the substance or mixture under OSHA's Hazard Communication Standard (1910.1200 revised 2024 (GHS revision 7))

Serious eye damage / eye irritation, category 2A;H319

Causes serious eye irritation.

Specific target organ toxicity, repeated exposure category 2;H373

May cause damage to organs through prolonged or repeated exposure. Specific Target Organs: (kidneys)

Aquatic toxicity (chronic), category 3;H412

Harmful to aquatic life with long lasting effects.

Label elements



Warning

H319 Causes serious eye irritation.

H373 May cause damage to organs through prolonged or repeated exposure.

H412 Harmful to aquatic life with long lasting effects.

[Prevention]:

P260 Do not breathe dust, fume, mist, vapors or spray.

P264 Wash thoroughly after handling.

P273 Avoid release to the environment.

P280 Wear protective gloves, eye protection, and face protection.

[Response]:

P301+312 IF SWALLOWED: Call a POISON CENTER, doctor or physician if you feel unwell.

P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P314 Get Medical advice or attention if you feel unwell.

P337+313 If eye irritation persists: Get medical advice or attention.

[Storage]:

No GHS storage statements

[Disposal]:

P501 Dispose of contents or container in accordance with local and national regulations.

Other hazards

This product contains no PBT/vPvB/vPvM chemicals.

This product contains no endocrine disrupting chemicals.

Does not contain component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS) per US or Canadian regulations.

Section 3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the OSHA's Hazard Communication Standard (1910.1200) revised 2024 (GHS revision 7).

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Lithium iron phosphate (lifepo4) CAS Number: 15365-14-7 Synonyms: Phosphoric acid, iron(2+) lithium salt (1:1:1)	30 - 60	Not Classified	No data available
Graphite CAS Number: 7782-42-5 Synonyms: No available information	10 - 30	Not Classified	No data available
Ethylene carbonate CAS Number: 96-49-1 Synonyms: [1,3]dioxolan-2-one, 2-(carboxyoxo)ethyl carbonate, 2-(carboxyoxo)ethyl hydrogen carbonate, 1,3-dioxalan-2-one, Ethylene carbonate	10 - 30	Serious eye damage / eye irritation, category 2;H319 Acute toxicity(oral), category 4;H302 Specific target organ toxicity, repeated exposure category 2;H373	No data available
Copper CAS Number: 7440-50-8 Synonyms: Cl 77400	7 - 13	Aquatic toxicity (chronic), category 2;H411	No data available
Aluminum powder (Al) (stabilized) CAS Number: 7429-90-5 Synonyms: Aluminum (Al), Aluminum flake	3 - 7	Water reacting substance, category 2;H261 Flammable Solid, category 1;H228	No data available

The actual concentration or concentration range is withheld as a trade secret.

*PBT/vPvB - PBT, vPvM or vPvB-substance.

The full texts of the phrases are shown in Section 16.

Section 4. First aid measures

Description of first aid measures

General In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

For Exposure to contents of an open or damaged battery:

Inhalation Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious, place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eyes Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.

Skin Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.

Ingestion If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

Most important symptoms and effects, both acute and delayed

Overview No specific symptom data available.
 No chronic toxicity or long term toxicity information available. Treat symptomatically. See section 2 for further details.

Eyes Causes serious eye irritation.

Section 5. Fire-fighting measures

Extinguishing media

Recommended extinguishing media; alcohol resistant foam, CO₂, powder, water spray.
Unsuitable extinguishing media: Do not use; water jet.

Special hazards arising from the substance or mixture

Hazardous decomposition: Carbon monoxide, carbon dioxide, lithium oxide fumes.
Do not breathe dust, fume, mist, vapors or spray.

Advice for fire-fighters

As with all fires, wear positive pressure, self-contained breathing apparatus, (SCBA) with a full face piece and protective clothing. Persons without respiratory protection should leave area. Wear SCBA during clean-up immediately after fire. No smoking.

Cell may vent when subjected to excessive heat-exposing battery contents.

ERG Guide No. 147

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Put on appropriate personal protective equipment (see section 8).

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

Environmental precautions

Do not allow spills to enter drains or waterways.

Methods and material for containment and cleaning up

If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the battery to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.

Section 7. Handling and storage

Precautions for safe handling

Handle containers carefully to prevent damage and spillage.

The battery should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container. Do not short circuit terminals, or over charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.

See section 2 for further details. - [Prevention]:

Conditions for safe storage, including any incompatibilities

Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided. Do not place the battery near heating

equipment, nor expose to direct sunlight for long periods.

The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

Incompatible materials: Oxidising agents, alkalis, water.

See section 2 for further details. - [Storage]:

Specific end use(s)

No available information

Section 8. Exposure controls / personal protection

Control parameters

Exposure Limits

CAS No.	Ingredient	Source	Value
96-49-1	Ethylene carbonate	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
7429-90-5	Aluminum powder (Al) (stabilized)	OSHA	15 mg/m ³ (total dust), 5 mg/m ³ (respirable fraction)
		ACGIH	1 mg/m ³ (R) Respirable fraction
		NIOSH	TWA 10 mg/m ³ (total) TWA 5 mg/m ³ (resp)
		Supplier	No Established Limit
7440-50-8	Copper	OSHA	1 mg/m ³ (Dusts and mists (as Cu)), 0.1 mg/m ³ fume)
		ACGIH	0.2 mg/m ³
		NIOSH	TWA 1 mg/m ³ [*Note: The REL also applies to other copper compounds (as Cu) except Copper fume.]
		Supplier	No Established Limit
7782-42-5	Graphite	OSHA	5 mg/m ³ (respirable fraction), 15 mg/m ³ (total dust), 15 mppcf (natural)
		ACGIH	2 mg/m ³ (R) Respirable fraction
		NIOSH	TWA 2.5 mg/m ³ (resp)
		Supplier	No Established Limit
15365-14-7	Lithium iron phosphate (lifepo4)	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit

Exposure controls

Respiratory

None under normal conditions. Leak from a damaged or opened battery: Wear suitable respiratory protection in the form of an approved half face inorganic vapor and gas/acid/particulate respirator.

Eyes

None under normal conditions. Leak from a damaged or opened battery: Wear approved safety glasses or goggles and/or a face shield.

Skin	None under normal conditions. Leak from a damaged or opened battery: Wear protective gloves. Protective gloves recommended.
Engineering Controls	Airborne exposures to hazardous substances are not expected when product is used for its intended purpose. General ventilation normally adequate. Leak from a damaged or opened battery: Provide adequate ventilation if fumes or vapors are generated.
Other Work Practices	Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details.

Section 9. Physical and chemical properties

Information on basic physical and chemical properties

Physical State	Solid
Color	Cuboid shape.
Odor	If leaking, smells of medical ether.
Melting point / freezing point	Not Available
Initial boiling point and boiling range	Not Available
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: Not Available Upper Explosive Limit: Not Available
Flash Point	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available
pH	Not Available
Viscosity (cSt)	Not Available
Solubility in Water	No available information
Partition coefficient n-octanol/water (Log Kow)	No available information
Vapor pressure (Pa)	Not Available
Relative Density	Not Available
Vapor Density	Not Available
Particle Characteristics	---
Evaporation rate (Ether = 1)	Not Available
Other information	No other relevant information.

Section 10. Stability and reactivity

Reactivity

Hazardous Polymerization will not occur.

Chemical stability

Stable under normal circumstances.

Possibility of hazardous reactions

If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons.

Conditions to avoid

Heat above 70°C or incinerate. Deform. Mutilate. Crush. Disassemble. Overcharge. Short circuit. Expose over a long period to humid conditions.

Incompatible materials

Oxidising agents, alkalis, water.

Hazardous decomposition products

Carbon monoxide, carbon dioxide, lithium oxide fumes.

Section 11. Toxicological information

Acute toxicity

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm
Lithium iron phosphate (lifepo4) - (15365-14-7)	No data available.	No data available.	No data available.	No data available.	No data available.
Graphite - (7782-42-5)	> 2,000.00, Rat - Category: 4	No data available.	No data available.	> 2,000.00, Rat - Category: NA	No data available.
Ethylene carbonate - (96-49-1)	No data available.	No data available.	No data available.	No data available.	No data available.
Copper - (7440-50-8)	No data available.	> 2,000.00, Rat - Category: NA	No data available.	> 5.11, Rat - Category: NA	No data available.
Aluminum powder (Al) (stabilized) - (7429-90-5)	> 15,900.00, Rat - Category: NA	No data available.	No data available.	> 0.89, Rat - Category: NA	No data available.

Carcinogen Data

CAS No.	Ingredient	Source	Value
96-49-1	Ethylene carbonate	OSHA	Regulated Carcinogen: No;
		NTP	Known: No; Suspected: No;
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No;
		ACGIH	No Established Limit
7429-90-5	Aluminum powder (Al) (stabilized)	OSHA	Regulated Carcinogen: No;
		NTP	Known: No; Suspected: No;
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No;
		ACGIH	A4
7440-50-8	Copper	OSHA	Regulated Carcinogen: No;
		NTP	Known: No; Suspected: No;
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No;
		ACGIH	No Established Limit



Safety Data Sheet

LiFePO₄ Battery 24V50AH 25.6V, 50Ah, 1280Wh

SDS Revision
Date: 06/22/2026

7782-42-5	Graphite	OSHA	Regulated Carcinogen: No;
		NTP	Known: No; Suspected: No;
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No;
		ACGIH	No Established Limit
15365-14-7	Lithium iron phosphate (lifepo4)	OSHA	Regulated Carcinogen: No;
		NTP	Known: No; Suspected: No;
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No;
		ACGIH	No Established Limit

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	---	Not Applicable
Serious eye damage/irritation	2A	Causes serious eye irritation.
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	2	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	---	Not Applicable

Possible routes of entry: No available information

Symptoms and effects, both acute and delayed:

No specific symptom data available.

No chronic toxicity or long term toxicity information available. Treat symptomatically.

Eyes Causes serious eye irritation.

Ingestion May be harmful if swallowed.

Section 12. Ecological information

Toxicity

Harmful to aquatic life with long lasting effects.

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity



Safety Data Sheet
LiFePO4 Battery 24V50AH 25.6V,
50Ah, 1280Wh

SDS Revision
 Date: 06/22/2026

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Lithium iron phosphate (lifepo4) - (15365-14-7)	No data available.	No data available.	No data available.
Graphite - (7782-42-5)	100.00, Danio rerio	> 100.00, Daphnia magna	> 100.00, Pseudokirchnerella subcapitata
Ethylene carbonate - (96-49-1)	No data available.	No data available.	No data available.
Copper - (7440-50-8)	0.19, Pimephales promelas	0.01, Daphnia magna	0.15, Pseudokirchnerella subcapitata
Aluminum powder (Al) (stabilized) - (7429-90-5)	1.16, Pimephales promelas	0.72, Ceriodaphnia dubia	1.05, Pseudokirchnerella subcapitata

Persistence and degradability

There is no data available on the preparation itself.

Bioaccumulative potential

No available information

Mobility in soil

No available information

Results of PBT and vPvB assessment

This product contains no PBT/vPvB/vPvM chemicals.

Other adverse effects

No available information

Section 13. Disposal considerations

Waste treatment methods

Observe all federal, provincial and local regulations when disposing of this substance.

Section 14. Transport information

UN 3480 LITHIUM BATTERY ONLY SHIPMENTS

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
UN number	UN3480	UN3480	UN3480
UN proper shipping name	Lithium Ion Batteries	Lithium Ion Batteries	Lithium Ion Batteries
Transport hazard class(es)	Class: 9 Sub Class: Not Applicable	Class: 9 Sub Class: Not Applicable	Class: 9 Sub Class: Not Applicable

UN 3481 LITHIUM BATTERY CONTAINED IN EQUIPMENT

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
UN number	UN3481	UN3481	UN3481



Safety Data Sheet
LiFePO4 Battery 24V50AH 25.6V,
50Ah, 1280Wh

SDS Revision
 Date: 06/22/2026

UN proper shipping name	Lithium-Ion Batteries contained in Equipment	Lithium-Ion Batteries contained in Equipment	Lithium-Ion Batteries contained in Equipment
Transport hazard class(es)	Class: 9 Sub Class: Not Applicable	Class: 9 Sub Class: Not Applicable	Class: 9 Sub Class: Not Applicable Packing Instruction: 967 (Sec. I) Additional Instructions: Cargo Aircraft Only

UN 3481 LITHIUM BATTERY PACKED WITH EQUIPMENT

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
UN number	UN3481	UN3481	UN3481
UN proper shipping name	Lithium-Ion Batteries packed with Equipment	Lithium-Ion Batteries packed with Equipment	Lithium-Ion Batteries packed with Equipment
Transport hazard class(es)	Class: 9 Sub Class: Not Applicable	Class: 9 Sub Class: Not Applicable	Class: 9 Sub Class: Not Applicable Packing Instruction: 966 (Sec. I) Additional Instructions: Cargo Aircraft Only

Environmental hazards

Marine Pollutant: No;

Special precautions for user

No available information

Section 15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

Classification of the substance or mixture under OSHA's Hazard Communication Standard (1910.1200) revised 2024 (GHS revision 7)

Toxic Substance Control Act (TSCA)

CAS Number	Ingredient	Toxic Substance Control Act (TSCA)	Comments	Status
0007429-90-5	Aluminum powder (Al) (stabilized)	Yes		ACTIVE
0007440-50-8	Copper	Yes		ACTIVE
0000096-49-1	Ethylene carbonate	Yes		ACTIVE
0007782-42-5	Graphite	Yes		ACTIVE
0015365-14-7	Lithium iron phosphate (lifepo4)	No		

EPCRA 302 Extremely Hazardous:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.



Safety Data Sheet
LiFePO4 Battery 24V50AH 25.6V,
50Ah, 1280Wh

SDS Revision
Date: 06/22/2026

EPCRA 313 Toxic Chemicals:

Aluminum powder (Al) (stabilized)

Copper

Proposition 65 - Carcinogens (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Developmental Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Female Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Male Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 Label Warning:

This product contains no chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Section 16. Other information

SDS Revision Date 06/22/2026

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H228 Flammable solid.

H261 In contact with water releases flammable gases.

H302 Harmful if swallowed.

H319 Causes serious eye irritation.

H373 May cause damage to organs through prolonged or repeated exposure.

H411 Toxic to aquatic life with long lasting effects.

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material in any process, unless specified in the text.

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