



## **Enphase IQ Battery 10C/10CS**

### **Safety data sheet**

Issue date: February 27, 2025

## Section 1. Product name and identification

### 1.1 Product identifier

#### 1.1.1 Product details

Product name	Product SKU	SKU contents	Country
IQ Battery 10C	IQBATTERY-10C-1P-NA	(2) B05-C01-US00-1-3 + (1) B10C-NC-0708-O	North America
IQ Battery 10CS	IQBATTERY-10CS-1P-NA	(2) B05-C01-US00-1-3 + (1) B10CS-NC-0708-O	
IQ Battery 10C/10CS - 5 kWh battery unit	B05-C01-US00-1-3	-	
IQ Battery 10C cover kit	B10C-NC-0708-O	-	
IQ Battery 10CS cover kit	B10CS-NC-0708-O	-	

#### 1.1.6 Other means of identification

- Lithium iron phosphate battery
- UN3480 - Lithium-ion batteries, Class 9, for transport

#### 1.1.7 Product description

- The IQ Battery 10C consists of two 5 kWh lithium iron phosphate battery packs, two battery management units (BMU) integrated in two IQ8BL Microinverters, two IQ8BN Microinverters, a protective case, and miscellaneous electronics.
- The IQ Battery 10CS consists of two 5 kWh lithium iron phosphate battery packs, two battery management units (BMU) integrated in two IQ8BL Microinverters, two IQ8BN Microinverters, two protective cases, and miscellaneous electronics.
- The IQ Battery 10C/10CS - 5 kWh battery unit (SKU: B05-C01-US00-1-3) consists of one 5 kWh lithium iron phosphate battery pack, one battery management unit (BMU) integrated in one IQ8BL Microinverter, one IQ8BN Microinverters, and miscellaneous electronics.

### 1.2 Product use

#### 1.2.1 Identified uses

The product will be used as an alternating current (AC)-coupled energy system, primarily with photovoltaic systems.

#### 1.2.2 Use restrictions

Transport and store the battery under the following conditions:

- Temperature range: Do not expose the battery to temperatures outside -20°C to 55°C. To minimize adverse effects on battery performance, it should be kept at room temperature (25°C ±5°C).
- Do not store them near heat sources like furnaces or open flames.
- Store it in a dry location.
- Protect the battery from physical damage. Do not open, disassemble, crush, or burn the battery.
- Do not expose the battery to an elevation of more than:
  - 3000 meters for IQBATTERY-10C-1P-NA and IQBATTERY-10CS-1P-NA

### 1.3 Details of the supplier of the *Safety data sheet*

Enphase Energy, Inc.  
47281 Bayside Pkwy., Fremont, CA 94538, Tel: +1 (833) 963-3820

### 1.4 Emergency contact details

#### 1.4.1 Emergency telephone number

- United States territories and Canada (ChemTel): (800) 255-3924
- Outside United States territories and Canada (ChemTel): +01 (813) 248-0585
- Contact [Enphase Support](#)

#### 1.4.2 Regional office contact details

North America	
Fremont, California	Enphase Energy, Inc. 47281 Bayside Pkwy., Fremont, CA 94538  Tel: +1 (833) 963-3820
Petaluma, California	Enphase Energy, Inc. 1420 N. McDowell Blvd. Petaluma, CA 94954
Austin, Texas	Enphase Energy, Inc. 1835 Kramer Ln. Building B Suite 125 Austin, TX 78758
Meridian, Idaho	Enphase Energy, Inc. 1819 S. Cobalt Point Way Meridian, ID 83642

## Section 2. Hazard identification

### 2.1 Hazard classification and hazard statement

The battery comprises a sealed, rigid, and protective solid case and is not expected to expose the user to hazardous ingredients under normal use conditions. The risk of exposure occurs only if the IQ Battery 10C/10CS is mechanically, thermally, or electrically abused to the point where both the protective case and battery are compromised. If this occurs, exposure to electrolyte solutions within the cell may occur through eye contact, skin contact, and ingestion.

The following hazard classifications only apply to the electrolyte:

- H226—Flammable liquid (Category 3)
- H302—Oral toxicity (Category 4)
- H314—Skin corrosion/irritation (Category 1)
- H318—Eye irritation (Category 1)
- H335—Specific organ toxicity; single exposure; respiratory tract irritation (Category 3)
- H372—Specific organ toxicity; repeated exposure (bones, teeth) (Category 1)

### 2.2 GHS label elements

#### 2.2.1 Pictogram (electrolyte)



#### 2.2.2 Signal word: DANGER

### 2.3 GHS hazard statement (electrolyte)

Hazard class	Hazard category	Hazard code	Hazard statement
Flammable liquid	3	H226	Flammable liquid and vapor
Oral toxicity	4	H302	Harmful if swallowed
Skin corrosion	1	H314	Causes severe skin burns and eye damage
Eye irritation	1	H318	Causes serious eye damage
Specific organ toxicity → single exposure → respiratory tract irritation	3	H335	It may cause respiratory irritation

Specific target organ toxicity → repeated exposure → inhalation	1	H372	Causes damage to organs (bones, teeth)
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## 2.4 Precautionary statement

- P101—If medical advice is needed: Have the product container or label in hand.
- P102—Keep out of reach of children.
- P103—Read the label before use.
- P210—Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. Do not smoke.
- P264—Wash hands thoroughly after use.
- P280—Wear protective gloves/eye and face protection.
- P302 + P303 + P352 + P353 + P361 + P362 + P364—If on the skin (or hair): Take off all contaminated clothing immediately and wash before reuse. Rinse the skin with water.
- P337 + P332 + P313—If skin irritation occurs or eye irritation persists, get medical attention or advice.
- P370 + P378—In case of fire: Use ABC dry chemical to extinguish.

## 2.5 Hazards that GHS does not cover.

- No data is available; none is known.

### Section 3. Composition/information on ingredients

#### 3.1 Substances

As the battery is a solid manufactured article, exposing its hazardous ingredients is not expected with regular use.

Chemical name	CAS #	Content (%)	Remark
Lithium iron phosphate	15365-14-7	40.7	--
PVDF Polyvinylidene Fluoride	24937-79-9	0.8	--
Positive electrode ceramic	24937-79-9	0.9	--
Carbon black	7440-44-0	21.6	--
Styrene-Butadiene Rubber	61789-96-6	0.4	--
CMC Carboxymethyl cellulose	9000-11-7	0.3	--
Separator	--	1.8	--
Copper	7440-50-8	6.8	--
Aluminium foil	7429-90-5	3.9	--
Lithium hexafluorophosphate	21324-40-3	21.1	--
Aluminum	7429-90-5	1.7	--

## Section 4. First aid measures

The IQ Battery 10C/10CS has a lithium-ion battery that contains organic electrolytes and is sealed in a protective case. The risk of exposure occurs only if the structural integrity of the enclosure of the battery is compromised through mechanical, thermal, or electrical abuses. If the battery is physically damaged, an electrolyte is leaked, and person(s) are exposed, the following initial care should be taken:

### 4.1 Description of first aid measures

#### 4.1.1 General advice:

- Move victims from a dangerous area to an area with fresh air.
- Show this Safety data sheet to the medical professionals in attendance.
- Quickly transport the victim to emergency care during eye contact, skin irritation, ingestion, or inhalation.

4.1.2 Eye contact: Immediately flush the eyes with clean water for at least 15 minutes without rubbing. If appropriate procedures are not taken, this may cause eye irritation. Seek medical attention if eye irritation persists.

4.1.3 Skin contact: Immediately remove all contaminated clothing and wash before reusing. Rinse your skin with water or shower for 15 minutes. If appropriate procedures are not taken, this may cause skin irritation. Seek medical attention if skin irritation occurs.

4.1.4 Inhalation contact: Move victims to an area with fresh air immediately and remove the source of contamination from the affected area. Use oxygen if available. Seek medical attention.

4.1.5 Ingestion: Have the victim rinse their mouth thoroughly with water. Seek medical attention.

### 4.2 The most important symptoms and effects, acute and delayed.

- See [Section 2](#) for information on the most important known symptoms.

### 4.3 Indication of immediate medical attention and special treatment needed.

- See point [4.1.1](#).

### 4.4 Self-protection of the first responder

- Use personal protective equipment as described in [Section 8](#).

## Section 5. Fire-fighting measures

When lithium-ion batteries are damaged or abused (for example, mechanical damage or electrical overcharge), the flammable liquid electrolyte in them may vent, ignite, and produce sparks in the presence of high temperatures (>150°C). Burning batteries can ignite other batteries in proximity.

### 5.1 Extinguishing media

- ABC dry chemical fire extinguisher or regular foam.
- Additional extinguishing media include carbon dioxide, alcohol-resistant foams, or water spray.

### 5.2 Specific hazards

- Lithium-ion phosphate batteries contain flammable liquid electrolytes that may vent, ignite, and generate vapors.
- The interaction of water or water vapor with exposed lithium hexafluorophosphate may generate hydrogen and hydrogen fluoride (HF) gas.
- Hazardous combustion products: carbon monoxide, carbon dioxide, lithium oxide fumes.

### 5.3 Special protective actions for firefighters

- Wear Self-contained breathing apparatus.
- Use personal protective equipment as described in [Section 8](#).



## Section 6. Accidental release measures

### 6.1 Personal precautions, protective equipment, and emergency procedures

- Evacuate personnel to a safe area and keep unauthorized personnel away.
- Isolate the spill area to a minimum distance of 25 meters.
- Eliminate all ignition sources (no smoking, sparks, flames, or hot equipment) in the immediate area around the spill.
- Do not touch or walk through spilled material.
- Avoid breathing the vapor. Ensure adequate ventilation.
- Use personal protective equipment as described in [Section 8](#).

### 6.2 Environmental precautions

- Absorb spilled material with a non-combustible, non-reactive absorbent to prevent it from migrating into soil, sewers, and natural waterways.

### 6.3 Methods and materials for containment and clean-up

- Contaminant removal and clean-up should only be completed by qualified personnel.
- Stop the leak only if it is safe to do so.
- Clean any residual electrolyte and liquid using a non-combustible, non-reactive absorbent. Ensure that clean-up procedures do not expose spilled material to moisture.
- Containerize and place all leaking batteries in individual containers that are leak-proof, non-conductive, non-combustible, and absorbent (for example, an LDPE plastic bag that is sealed shut and contains sufficient absorbent for the contained electrolyte). Ensure sufficient absorbent is used to absorb the total amount of liquid from the battery.
- Place used spill response materials in leak-proof, non-conductive, non-combustible containers containing absorbent and separate from batteries that have absorbent (for example, LDPE plastic bag that is sealed shut and contains sufficient absorbent for the contained electrolyte).
- Avoid the release of collected materials. Do not bring the collected materials near an open flame.

### 6.4 Reference for other sections

- For disposal, see [Section 13](#).

## Section 7. Handling and storage

### 7.1 Precautions for safe handling

- Avoid mechanical damage to the IQ Battery 10C/10CS. Do not disassemble IQ Battery 10C/10CS.
- Avoid short-circuiting the battery.
- Never use a battery that has suffered abuse. Refer to the data sheet for safe operating instructions.

### 7.2 Conditions for safe storage

Store the IQ Battery 10C/10CSs under the following conditions when not in use:

- Store indoors and on pallets or similar devices to enable any leaks to be visibly observed upon inspection and to ensure the items do not come into contact with water or salt breeze.
- Store in a dry location and away from heat sources such as furnaces, open flames, etc. Do not expose the battery to temperatures outside the range of -20°C to 50°C.
- Do not open, disassemble, crush, or burn the battery.
- It is recommended that the battery be kept at room temperature (25°C ±5°C) to minimize any adverse effects on performance. Elevated temperatures can result in shortened battery life.
- Store in an upright position and in areas that are not likely damaged or disturbed by personnel, equipment, or vehicles.
- Do not store unboxed items in areas with a source of spark generation within 30 cm, in direct sunlight, indirect exposure to exhaust gases, such as those from automobiles, or in places with continuous or intermittent vibration.

### 7.3 Specific uses

- The IQ Battery 10C/10CS is used as a fully integrated component of the Enphase Energy System.

## Section 8. Exposure controls or personal protection

### 8.1 Control parameters

8.1.1 Airborne exposure to hazardous substances in the electrolyte is not expected when the cells or batteries are used for their intended purposes.

8.1.2 United States occupational exposure limits:

- Lithium hexafluorophosphate (as fluoride)
  - USA, OSHA PEL: 2.5 mg/m<sup>3</sup> (TWA)
  - USA, ACGIH TVL: 2.5 mg/m<sup>3</sup> (TWA)
  - USA, ACGIH BEI: 2 mg/L (urine—before shift), 3 mg/L (urine—end of shift)
- There are no published exposure limits for the remaining electrolyte components.

8.1.3 European Union and United Kingdom occupational exposure limits.

Country	Limit value – eight hours		Limit value – short term	
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
	Lithium hexafluorophosphate (as fluoride)			
Austria	None	2.5	None	12.5 (30 minutes)
Belgium	None	2.5	None	None
Denmark	None	2.5	None	5
European Union	None	None	None	None
France	None	2.5	None	None
Germany	None	1.0	None	4 (15 minutes)
Hungary	None	2.5	None	10
Italy	None	None	None	None
Poland	None	2.0	None	None
Spain	None	2.5	None	None
Sweden	None	1.0	None	None
Switzerland	None	1.0	None	4 (15 minutes)
The Netherlands	None	None	None	2 (15 minutes)
United Kingdom	None	2.5	None	None

- There are no published occupational exposure limits for the remaining electrolyte components.

### 8.2 Exposure controls

8.2.1 Routine handling

- The IQ Battery 10C/10CS is a lithium-ion battery containing organic electrolytes sealed in a protective case. There is no risk of exposure during routine handling. The risk of exposure occurs only if the IQ Battery 10C/10CS is mechanically, thermally, or electrically abused to the point of compromising the enclosure.

- Do not eat, drink, or smoke in areas where IQ Batteries are stored or operated. Avoid storing food, drink, or tobacco near IQ Battery 10C/10CS. Practice and maintain good housekeeping.
- Jewelry items, such as rings, wristwatches, pendants, and others, can cause short-circuiting when they come into contact with exposed battery terminals. Remove them when handling batteries.

#### 8.2.2 Personal protective equipment

- The following personal protective equipment should be worn if the IQ Battery 10C/10CS is mechanically, thermally, or electrically abused to the point where the protective case is damaged, so there is a risk of electrolyte exposure.
  - Skin/Body protection: Wear closed-toe shoes, chemical-resistant overalls, and protective over boots.
  - Gloves: 15 mils nitrile rubber gloves. Immersion protection is provided when nitrile gloves are worn over laminated film barrier gloves (Ansell Barrier 2-100 or equivalent).
  - Eye/Face protection: Take steps to prevent exposure to the eyes and face, including chemical splash goggles and a face shield.
  - Respiratory protection: Wear a full-face respirator with an organic vapor/acid gas/particulate filter (3M Model No. 60923 or equivalent).

#### 8.2.3 Engineering controls

- See [Section 6](#) for accidental release response measures.
- See [Section 7](#) for handling and storage measures.
- Ventilate the immediate area around a leaking cell or battery.

## Section 9. Physical and chemical properties

Physical and chemical properties	IQ Battery 10C/10CS
Appearance	Quadrangle shape
Odor	Odorless
pH	Not applicable as supplied
Flash point	Not applicable unless individual components exposed.
Flammability	Not applicable unless individual components exposed.
Relative density	Not applicable unless individual components exposed.
Solubility (water)	Not applicable unless individual components exposed.
Solubility (other)	Not applicable unless individual components exposed.

## Section 10. Stability and reactivity

### 10.1 Reactivity

- No data is available.

### 10.2 Chemical stability

- IQ Battery 10C/10CS is stable under regular use and in normal storage conditions.
- No data is available.

### 10.3 Possibility of hazardous reactions

- Fire may occur if the battery is physically damaged or exposed to high-temperature conditions.
- Do not expose the battery to temperatures outside -40°C to 60°C.
- Do not incinerate, deform, mutilate, disassemble, crush, short, or install with incorrect polarity. Avoid mechanical or electrical abuse or electrical shorts.

### 10.4 Conditions to avoid

- See [Section 7](#).

### 10.5 Incompatible materials

- No data is available.

### 10.6 Hazardous decomposition products

- Hydrofluoric acid and carbon monoxide may be released if a cell or battery is physically damaged to the point where the case is compromised, and the electrolyte is released.

## Section 11. Toxicological information

### 11.1 Likely routes of exposure

The IQ Battery 10C/10CS has a lithium-ion cell containing organic electrolytes that are sealed in a protective case. The risk of exposure occurs only if the cell is mechanically, thermally, or electrically abused to the point of compromising the protective case. The following toxicological information only applies if an electrolyte leaks from the battery due to physical damage and an individual comes into contact with the electrolyte. No toxicological data regarding the electrolyte is available. The following information is provided for the electrolyte components:

### 11.2 Acute toxicity

- **Electrolyte:**
  - **Oral:** Lithium hexafluorophosphate is classified as acute toxic–oral (Category 3 (H301)). Ethylene carbonate and 1,3-Propanesultone are classified as acute toxic–oral (Category 4 (H302)). No oral toxicity data is available for the electrolyte. The electrolyte is presumed to be acutely toxic–oral per GHS mixture rules.
  - **Inhalation:** No data is available.
  - **Dermal/Eye:** 1,3-Propanesultone is classified as acute toxic–dermal (Category 4 (H312)). The electrolyte is not acutely toxic–dermal per GHS mixture rules.

### 11.3 Skin corrosion/irritation

- **Electrolyte:** Individual electrolyte components cause skin corrosion/irritation and severe eye damage/irritation. Lithium hexafluorophosphate is classified as causing severe skin burns (Category 1 (H314)). Diethyl carbonate, ethyl methyl carbonate, and propylene carbonate are classified as causing skin irritation (Category 2 (H315)). No data is available for the electrolyte, and it is presumed to cause skin corrosion/irritation per GHS mixture rules.

### 11.4 Serious eye damage/irritation

- **Electrolyte:** Individual components of the electrolyte cause severe eye damage/irritation. Lithium hexafluorophosphate is classified as causing severe burn damage (Category 1 (H318)). Ethylene carbonate, dimethyl carbonate, ethyl methyl carbonate, propylene carbonate, and 1,3-Propanesultone are classified as causing severe eye irritation (Category 2 (H319)). No data is available for the electrolyte, and it is presumed to cause severe eye damage/irritation per GHS mixture rules.

### 11.5 Respiratory or skin sensitization

- **Electrolyte:** No data is available. No ingredients in the electrolyte are identified as causing respiratory or skin sensitization.

### 11.6 Germ cell mutagenicity

- Electrolyte: No data is available. No ingredients in the electrolyte are identified as causing germ cell mutagenicity.

#### 11.7 Carcinogenicity

- Electrolyte: 1,3-Propanesultone is identified as a substance that may be carcinogenic (Category 1A/2B – H350). No data is available for the electrolyte.

#### 11.8 Reproductive toxicity

- Electrolyte: No data is available. No ingredients in the electrolyte are identified as having reproductive toxicity.

#### 11.9 Specific target organ toxicity – single exposure

- Electrolyte: Diethyl carbonate, ethyl methyl carbonate, and propylene carbonate are identified as causing lung irritation with a single exposure (Category 3 (H335)). No data is available for the electrolyte, and it is presumed to cause specific target organ toxicity damage (respiratory) with repeated exposure per GHS mixture rules.

#### 11.10 Specific target organ toxicity – repeated exposure

- Electrolyte: Individual electrolyte components cause specific target organ toxicity damage with repeated exposure. Lithium hexafluorophosphate is identified as causing damage to bones and teeth (Category 1 (H372)). Ethylene carbonate is classified as causing kidney damage (Category 2 (H373)). No data is available for the electrolyte, and it is presumed to cause specific target organ toxicity damage with repeated exposure per GHS mixture rules.

#### 11.11 Aspiration hazards

- Electrolyte: No data is available.

#### 11.12 Symptoms related to physical, chemical, and toxicological characteristics.

- Available information on the electrolyte's physical, chemical, and toxicological characteristics is presented for each hazard class (points 11.2–11.11).

#### 11.13 Delayed and immediate effects and chronic effects from short- and long-term exposure.

For each hazard class, available information regarding the electrolyte's physical, chemical, and toxicological characteristics is presented (points 11.2–11.11).



## Section 12. Ecological information

### 12.1 Toxicity

- No data is available.

### 12.2 Persistence and degradability

- No data is available.

### 12.3 Bio-accumulative potential

- No data is available.

### 12.4 Mobility in soil

- No data is available.

### 12.5 Results of PBT and VPvB assessments

- Not applicable.

### 12.6 Other adverse effects

Solid battery cells released into the natural environment will slowly degrade and may release harmful or toxic substances. Cells are not intended to be released into water or on land and should be disposed of or recycled according to local regulations.

## Section 13. Disposal considerations

### 13.1 United States/Canada:

- Recycling: Follow all applicable local, state, and federal recycling requirements.
- Disposal: Follow all applicable local, state, and federal disposal requirements.

### 13.2 European Union

- IQ Battery 10C/10CS must be disposed of per the EU Battery and WEEE Directives.

### 13.3 Australia and New Zealand

- Recycling: Follow all applicable local council, state, and national recycling requirements.
- Disposal: Follow all applicable local council, state, and national recycling requirements.

## Section 14. Transport information

14.1 Proper shipping name: Lithium-ion batteries.

14.2 Hazard class: 9 – Miscellaneous dangerous goods.

14.3 Identification number: UN3480

14.4 Packing group: II

14.5 Packing instructions: 965-IA (IATA Dangerous Goods Regulations, 59th Edition),  
International Maritime Dangerous Goods Code: See Packing Instructions P903, LP903, and  
Special Provision 188.

14.6 Not allowed on passenger aircraft.

14.7 Environmental hazards

- Lithium-ion batteries are not classified as marine pollutants.
- Follow all applicable local, state, and federal requirements when identifying additional environmental hazards.

14.8 Australian Dangerous Goods Code, Edition 7.5.

## Section 15. Regulatory information

### 15.1 United States

- TSCA Status: All ingredients in these products are listed on the TSCA inventory.
- OSHA: The ingredients meet the criteria as per 29 CFR 1910.1200.
- EPCRA 302/304: None.
- EPCRA 311/312: Reportable more than 10,000 lb.
- EPCRA 313: None.
- CERCLA RQ: None.

### 15.2 European Union

- Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I: Not listed.
- Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II: Not listed.
- Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I as amended: Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals: Not listed.
- Other EU Regulations:
  - Directive 96/82/EC (Seveso II) on controlling major accident hazards involving dangerous substances: Not listed.
  - Directive 94/33/EC on protecting young people at work: Not listed.
  - This Safety data sheet complies with Regulation (EC) No. 1907/2006 requirements and was amended on May 28, 2015 by (EU) 2015/830.
  - Regulation (EC) No. 1272/2008: These products are not classified as hazardous.

### 15.3 Australia

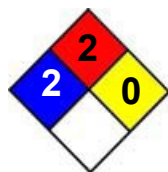
- Australian Dangerous Goods Code Edition 7.5: <https://www.ntc.gov.au/codes-and-guidelines/australian-dangerous-goods-code>.

### 15.4 Additional regulations are not provided elsewhere.

- 59th Edition of the IATA Dangerous Goods Regulations (DGR).
- 2015–2016 Edition of the CAO Technical Instructions for the Safe Transport of Dangerous Goods by Air.
- 2022 Edition of the International Maritime Dangerous Goods (IMDG) code.
- The battery has been tested per Sub-section 38.3 of the UN Manual of Tests and Criteria. The lithium-ion battery test summary is available upon request.

## Section 16. Other information

### NFPA 704 rating:



*IQ Battery 10C/10CS referenced herein is an “article” according to the Globally Harmonized System (GHS) of Classification and Labelling of Chemicals under 29 CFR 1910.1200, the European Classification and Labelling Regulation (EC) No 1272/2008 (CLP), US OSHA 29 CFR 1910.1200 and the Safe Work Australia SDS Code of Practice and is therefore exempt from the Safety data sheet requirements. This document is provided only as a service to our customers and is not based upon any requirement or regulation.*

## Revision history

Revision	Date	Description
MKT-00961-2.0	February 2025	Updated section 1.1.1, section 3 and section 9.
MKT-00961-1.0	January 2025	Initial release.