

Apple Product Information Sheet ≤ 20 Watt Hours

The products referenced herein are "articles" and "consumer products" and therefore are excepted from the 29 CFR 1910.1200 Hazard Communication requirements. The European Classification and Labelling Regulation (EC) No 1272/2008 (CLP) and the Globally Harmonized System (GHS) of Classification and Labelling of Chemicals exempt articles from the Safety Data Sheet requirements. This Product Information Sheet is provided only as a service to our customers and is not based upon any requirement or regulation.

Product: Lithium ion single cell batteries (Li-ion) ("Product")

Watt Hours: ≤ 20

*(For purpose of transport regulations, a single cell battery
is considered a "cell" for classification purposes)*

Models: See specific products listed in this document under Apple Product Battery Information, manufactured after January 1, 2007.

Edition Date: March 7, 2016

Version: 16.01

GENERAL SAFETY

This product, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. The mixture is encapsulated in the product. Only if released due to use or processing of the product in a manner not in accordance with the product's directions for use may it present potential health and safety hazards.

FIRST AID

Ingestion: Ingestion of a Li-ion battery is highly unlikely in the workplace, as the contents of a Li-ion battery are mostly solid, and any free liquid (ester-based electrolyte) that might drip out of a damaged battery is limited to a few drops. However, care should be taken not to touch fingers to mouth while handling a damaged battery so as to avoid any ingestion of contents. Do not induce vomiting. Wash out mouth with water. Get medical attention following potential exposure or if feeling unwell.

Inhalation: Remove individual to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if individual is feeling unwell.

Skin contact: Flush contaminated skin with plenty of water. Remove contaminated clothing. Continue to rinse for at least 15 minutes. Get medical attention. Wash clothing before reuse.

Eye Contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists.

HANDLING & STORAGE

Handling – Do not expose product to excessive physical shock or vibration. Do not disassemble. Should an individual cell in the product become ruptured, do not allow contact with water.

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Storage – Store in a cool, well ventilated area. Storage above 100 degrees can result in loss of product performance, leakage, or rust. Do not expose product to open flame.

FIRE SAFETY

In case of fire where products are stored, flood the area with water as needed to control the fire on nearby ordinary combustibles. If any products are involved, water may not extinguish them, but will cool the adjacent products and control the spread of fire. Fire fighters should wear self-contained breathing apparatus. To control/stop a thermal battery event where only the product is involved, use plentiful amounts of clean/dry sand to immediately smother the thermal reaction and reducing smoke. This is most effective, if applied to cover the battery, especially in the first few seconds of the event. CO2, dry chemical, and foam extinguishers may also be used for small fires in areas where products are stored, but may not extinguish the involved products themselves. LITH-X (powdered graphite) or copper powder fire extinguishers, dry ground dolomite or soda ash may also be used (these materials also act as smothering agents).

DISPOSAL

Apple products contain recyclable materials and should not be put into the municipal waste stream. Refer to the following websites for battery replacement and recycling options (<http://www.apple.com/batteries/replacements.html>, <http://www.apple.com/recycling/>). Do not dispose of in fire.

TRANSPORTATION

Apple's product cells have been successfully tested and comply with the UN Model Regulations, Manual of Test and Criteria, Part III, subsection 38.3. Product cells have been manufactured under a quality management program as specified in 2.9.4 of the UN Model Regulations.

PERFORMED TESTS		RESULTS
38.3.4.1	T1	Altitude Simulation
38.3.4.2	T2	Thermal Test
38.3.4.3	T3	Vibration
38.3.4.4	T4	Shock
38.3.4.5	T5	External Short Circuit
38.3.4.6	T6	Impact / Crush
38.3.4.7	T7	Overcharge
38.3.4.8	T8	Forced Discharge

Apple Product Information Sheet ≤ 20 Watt Hours

Apple Product's cells are rated at 20 Watt-hours or less and meet the requirements for transportation under:

- UN Model Regulations 18th revised edition Special Provisions 188 and 230
- International Civil Aviation Organization (ICAO) Technical Instructions and the International Air Transport Association (IATA) Dangerous Goods Regulations Packing Instructions:
 - 965 Section IB or Section II (UN3480, Lithium ion batteries)
 - These batteries will be offered for transport at a state of charge (SOC) not exceeding 30% of their rated design capacity.
 - 966 Section II (UN3481, Lithium ion batteries packed with equipment)
 - 967 Section II (UN3481, Lithium ion batteries contained in equipment)
- International Maritime Organization (IMO) Special Provisions 188 and 230
- European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) Special Provisions 188 and 230
- U.S. Department of Transportation (DOT) 49 CFR 173.185 and 173.185(c)
- Canadian Transport of Dangerous Goods Regulations (TDGR) Special Provision 34

The following table provides Apple Product Battery Information

Apple Products	UN Codes UN3481: Lithium ion batteries contained in equipment UN3480: Lithium ion batteries	Number of Batteries per Product	Watt-Hours per Battery	Lithium Ion battery weight only in kg (heaviest per family)
iPad mini 1 st and 4 th generation	UN3481	1	≤ 20	0.094
iPod touch	UN3481	1	≤ 20	0.021
iPod nano	UN3481	1	≤ 20	0.021
iPod classic	UN3481	1	≤ 20	0.031
iPod shuffle	UN3481	1	≤ 20	0.0175
iPhone	UN3481	1	≤ 20	0.06
AppleWatch	UN3481	1	≤ 20	0.0046
Apple TV 4 th generation w/ Siri Remote	UN3481	1	≤ 20	0.009
Apple pencil	UN3481	1	≤ 20	0.004
iMac w/Retina display w/Magic Keyboard and Magic Mouse 2 (Standard Configuration)	UN3481	2	≤ 20	0.0571
Siri Remote	UN3481	1	≤ 20	0.009
Magic Keyboard	UN3481	1	≤ 20	0.0155
Magic Mouse 2	UN3481	1	≤ 20	0.0416
Magic Trackpad 2	UN3481	1	≤ 20	0.037
iPhone Smart Battery Case	UN3481	1	≤ 20	0.0354
Xserve RAID	UN3481	1	≤ 20	0.9
Mac Pro RAID	UN3481	1	≤ 20	0.9
Stand alone single cell battery (iPod nano, classic and shuffle)	UN3480	1	≤ 2.7	See specific product above for battery weight
Stand alone single cell Battery (iPod touch and iPhone)	UN3480	1	> 2.7 but ≤ 20	

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REGULATORY INFORMATION

If hazardous materials are present in the workplace, Material Safety Data Sheets (MSDS)/Safety Data Sheets (SDS) are required by various national and international occupational worker safety regulations. However, MSDS/SDS's are not required for articles (see 29 CFR 1910.1200 (b)(6)(v)). Exceptions also apply for consumer products as defined in 29 CFR 1910.1200 (b)(6)(ix). An article is defined as a manufactured item other than a fluid or particle; (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g. minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees.

GENERAL RECOMMENDATIONS

CAUTION: Under extreme conditions, a risk of fire, explosion and burns exists. Do not short-circuit, crush, puncture, heat, incinerate or disassemble cells.

Apple Product Information Sheet ≤ 100 Watt Hours

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Product: Lithium ion multi-cell batteries (Li-ion) (“Product”)

Watt Hours: ≤ 100

*(For purpose of transport regulations, a multi cell battery
is considered a “battery” for classification purposes)*

Models: See specific products listed in this document under Apple Product Battery Information, manufactured after January 1, 2007.

Edition Date: March 7, 2016

Version: 16.01

GENERAL SAFETY

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FIRST AID

Ingestion: Ingestion of a Li-ion battery is highly unlikely in the workplace, as the contents of a Li-ion battery are mostly solid, and any free liquid (ester-based electrolyte) that might drip out of a damaged battery is limited to a few drops. However, care should be taken not to touch fingers to mouth while handling a damaged battery so as to avoid any ingestion of contents. Do not induce vomiting. Wash out mouth with water. Get medical attention following potential exposure or if feeling unwell.

Inhalation: Remove individual to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if individual is feeling unwell.

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HANDLING & STORAGE

Handling – Do not expose product to excessive physical shock or vibration. Do not disassemble. Should an individual cell in the product become ruptured, do not allow contact with water.

Apple Product Information Sheet ≤ 100 Watt Hours

Storage – Store in a cool, well ventilated area. Storage above 100 degrees can result in loss of product performance, leakage, or rust. Do not expose product to open flame.

FIRE SAFETY

In case of fire where products are stored, flood the area with water as needed to control the fire on nearby ordinary combustibles. If any products are involved, water may not extinguish them, but will cool the adjacent products and control the spread of fire. Fire fighters should wear self-contained breathing apparatus. To control/stop a thermal battery event where only the product is involved, use plentiful amounts of clean/dry sand to immediately smother the thermal reaction and reducing smoke. This is most effective, if applied to cover the battery, especially in the first few seconds of the event. CO2, dry chemical, and foam extinguishers may also be used for small fires in areas where products are stored, but may not extinguish the involved products themselves. LITH-X (powdered graphite) or copper powder fire extinguishers, dry ground dolomite or soda ash may also be used (these materials also act as smothering agents).

DISPOSAL

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TRANSPORTATION

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PERFORMED TESTS		RESULTS
38.3.4.1	T1	Altitude Simulation
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38.3.4.8	T8	Forced Discharge

Apple Product Information Sheet ≤ 100 Watt Hours

Apple Product's batteries are rated at 100 Watt-hours or less and meet the requirements for transportation under:

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 - 967 Section II (UN3481, Lithium ion batteries contained in equipment)
- International Maritime Organization (IMO) Special Provisions 188 and 230
- European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) Special Provisions 188 and 230
- U.S. Department of Transportation (DOT) 49 CFR 173.185 and 173.185(c)
- Canadian Transport of Dangerous Goods Regulations (TDGR) Special Provision 34

The following table provides Apple Product Battery Information

Apple Products	UN Codes UN3481: Lithium ion batteries contained in equipment UN3480: Lithium ion batteries	Number of Batteries per Product	Watt-Hours per Battery	Lithium Ion battery weight only in kg (heaviest per family)
MacBook Pro	UN3481	1	≤ 100	0.9
MacBook Air	UN3481	1	≤ 100	0.47
MacBook	UN3481	1	≤ 100	0.9
iPad Pro	UN3481	1	≤ 100	0.1746
iPad	UN3481	1	≤ 100	0.214
iPad Air 1 & 2	UN3481	1	≤ 100	0.264
iPad mini 2 nd and 3 rd generation	UN3481	1	≤ 100	0.115
MacBook stand-alone battery	UN3480	1	> 2.7 but ≤ 100	See specific product above for battery weight

REGULATORY INFORMATION

If hazardous materials are present in the workplace, Material Safety Data Sheets (MSDS)/Safety Data Sheets (SDS) are required by various national and international occupational worker safety regulations. However, MSDS/SDS's are not required for articles (see 29 CFR 1910.1200 (b)(6)(v)). Exceptions also apply for consumer products as defined in 29 CFR 1910.1200 (b)(6)(ix). An article is defined as a manufactured item other than a fluid or particle; (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g. minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees.

GENERAL RECOMMENDATIONS

CAUTION: Under extreme conditions, a risk of fire, explosion and burns exists. Do not short-circuit, crush, puncture, heat, incinerate or disassemble cells.

Links to External Coin Cell Supplier Documents

Link to Panasonic and Rayovac

Panasonic

<http://industrial.panasonic.com/ww/downloads/product-safety-data-sheet>

742-0048 (CR2032)

742-0062 (BR2032)

742-0064 (BR2330)

RAYOVAC

<http://www.rayovacindustrial.com/Technical-OEM/SDS.aspx>

742-0080 (BR2032)