



Mac mini (M1, 2020)

Apple Recycler Guide

May 2023

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About This Guide

Apple Recycler Guides provide guidance for electronics recyclers on how to disassemble products to maximize recovery of resources. The guides provide step-by-step disassembly instructions and information on the material composition to help recyclers direct fractions to the appropriate material recycler.

To conserve important resources, we work to reduce the materials we use and aim to one day source only recycled or renewable materials in our products. A key path to reaching that goal is resource recovery from end-of-life electronics.

Disassembly procedures are intended to be performed only by trained electronics recycling professionals. The recycler is responsible for independently evaluating and ensuring compliance with all applicable environmental, health, and safety laws related to the work. These include but are not limited to laws relating to the management, handling, shipping, and disposal of the outputs of this work as waste and laws in place to ensure the health and safety of all employees who support this work.

For questions or feedback about this guide, email contactesci@apple.com.

Identification

You can find the model number printed on the underside of the Mac mini.



Model number:
A2348

Directive 2012/19/EU Annex VII Components

Directive 2012/19/EU Annex VII requirements apply to the following substances and components.

Substance/Component	Apple Part Name	Removal Instructions
Printed circuit board if the surface is greater than 10 square centimeters	Main logic board, power supply	Follow steps 1–12
External electric cables	Power cord	Follow step 1
Battery	Coin cell battery	Follow steps 1–5
No further substances or components as listed in Annex VII		

Safety Considerations

The recycler is responsible for independently evaluating all activities undertaken by its employees to perform or support the work and ensuring compliance with all applicable health and safety laws related to the work. These include but are not limited to laws relating to the health and safety of all employees who perform or support this work. The recycler is also responsible for evaluating the workspace and ensuring that the area in which the work is to be undertaken is designed using ergonomic best practices and meets all ergonomic requirements to ensure the protection of its employees.

Personal Protective Equipment

Personal protective equipment should be worn during the entire recycling process.



Wear hand protection



Wear protective clothing



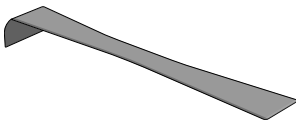
Wear eye protection



Wear foot protection

Recommended Tools

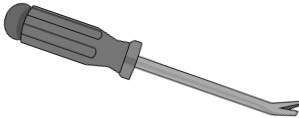
Flat surface scraper



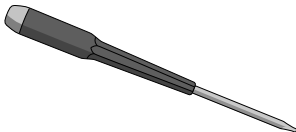
Miniature pry bar



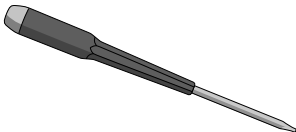
Nail-pulling screwdriver



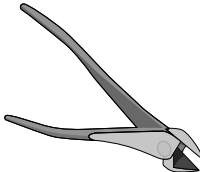
Torx TR6 screwdriver



Torx T10 screwdriver



Wire cutters



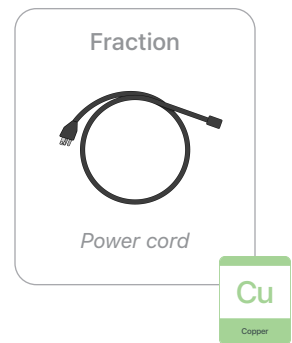
Disassembly Instructions

1. Remove the power cord.

» *Ensure that the Mac mini is turned off.*

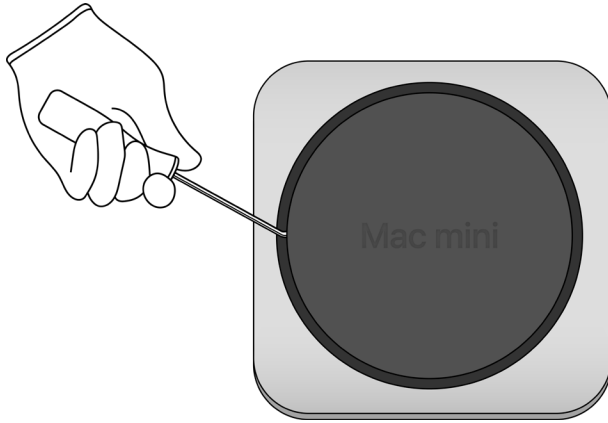


» *Unplug and remove the power cord.*



Warning: Before continuing disassembly, wait 10 minutes after unplugging the device for stored energy to discharge.

2. Pry off the plastic dust cover, exposing the aluminum shield.



Tools Used



Fraction



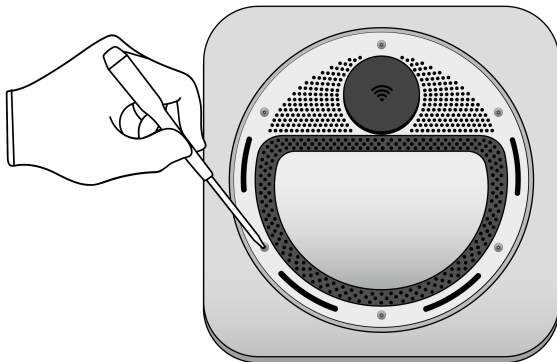
Dust cover

PL

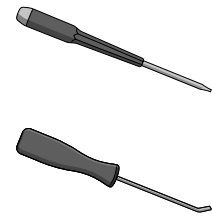
Plastics

3. Remove the fasteners holding the aluminum shield to the enclosure.

» Use a Torx TR6 screwdriver to remove the six fasteners.



Tools Used



Fraction

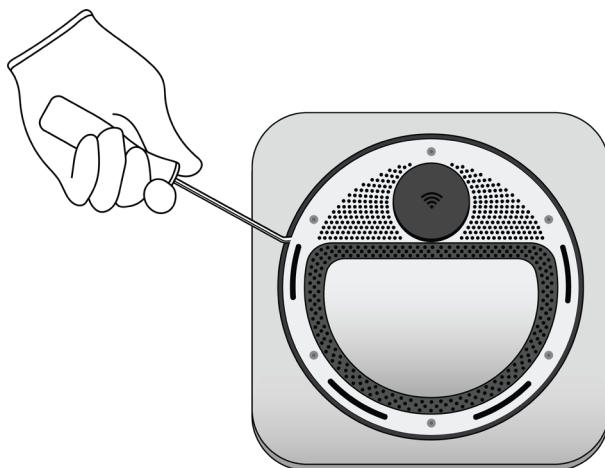


Fasteners (x6)

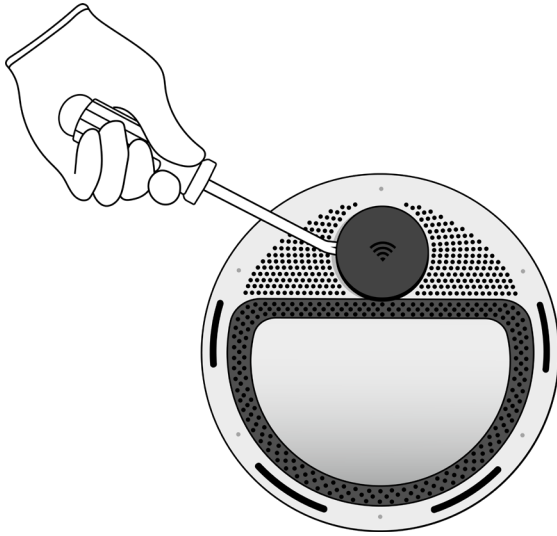
Fe

Ferrous

» Use a miniature pry bar to remove the aluminum shield.
Set the Mac mini aside.



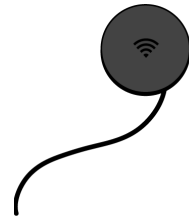
4. Pry the Wi-Fi antenna off the aluminum shield.



Tools Used



Fraction



Wi-Fi antenna

Cu
Copper

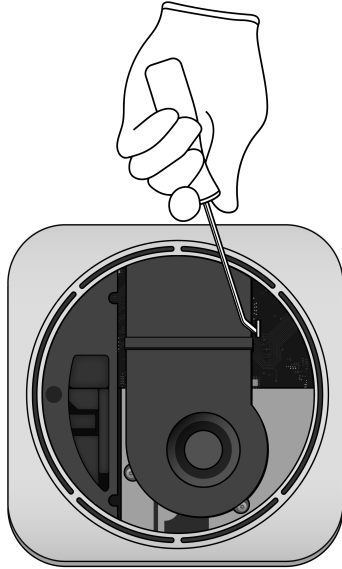
Fraction



Shield

Al
Aluminum

5. On the Mac mini, remove the coin cell battery from the bracket.



Tools Used



Fraction



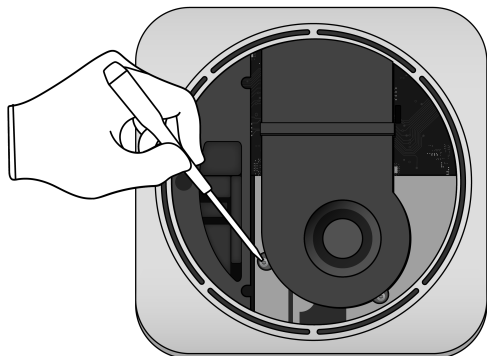
Coin cell battery

BT

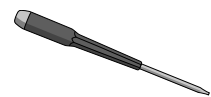
Battery

6. Remove the fan.

» Remove the four Torx TR6 fasteners holding the fan to the main logic board and heat sink.



Tools Used



Fraction

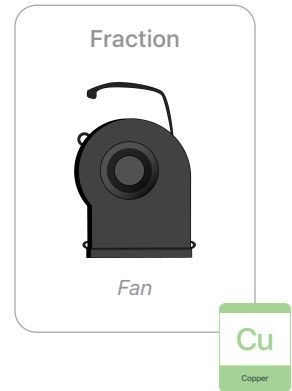
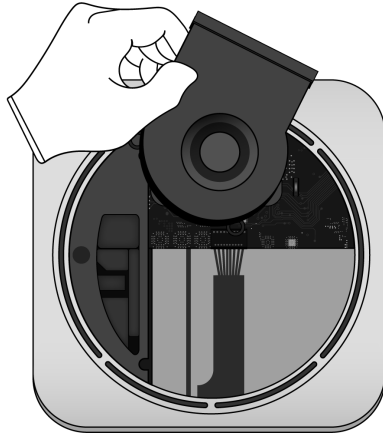


Fasteners (x4)

Fe

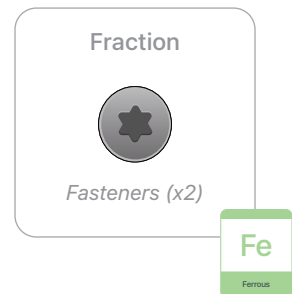
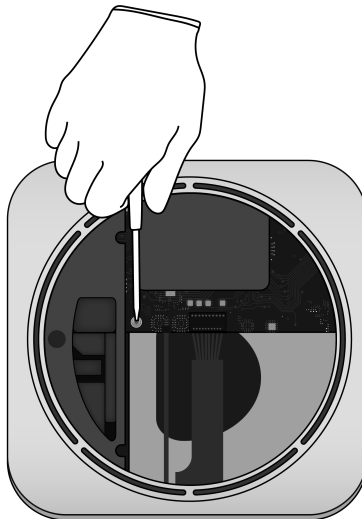
Ferrous

» Lift the fan to remove it.

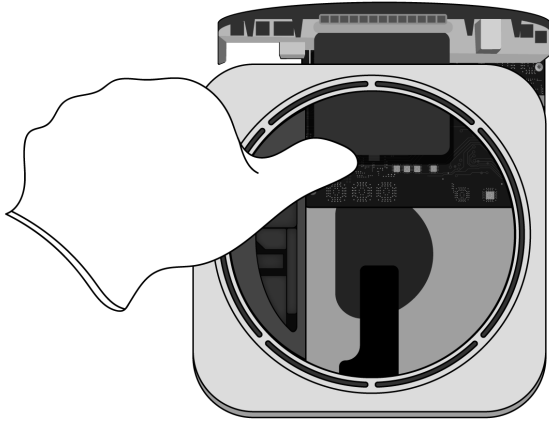


7. Remove the fasteners from the main logic board.

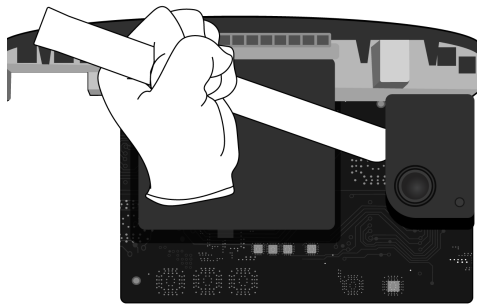
» Remove the two Torx T10 fasteners holding the main logic board to the enclosure.



» Using your thumbs, slide the main logic board out of the enclosure. Set the enclosure aside.



8. Pry the speaker off the main logic board.



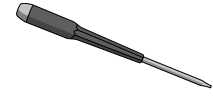
Speaker



9. Remove the mounting straps, front face, and heat sink from the main logic board.

» Remove the five Torx TR6 fasteners from the front face and heat sink.

Tools Used



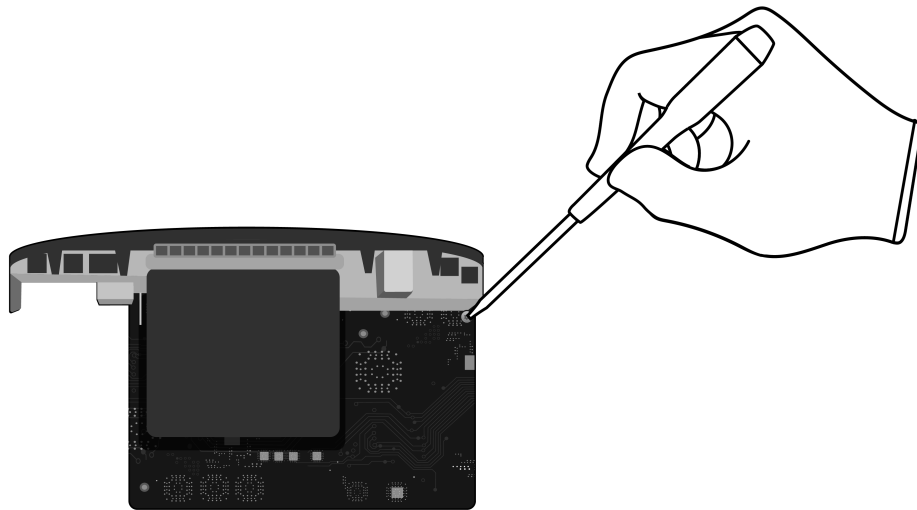
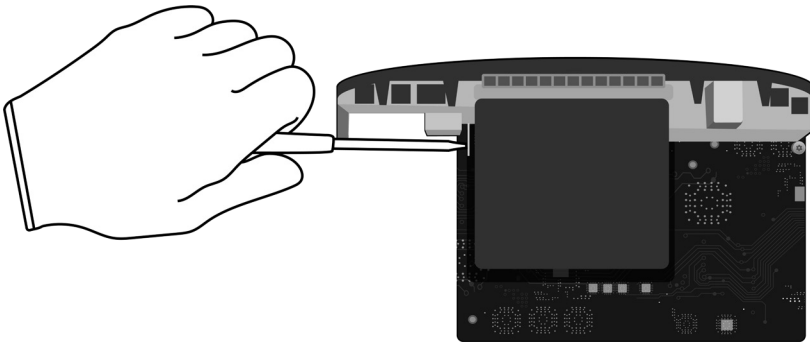
Fraction



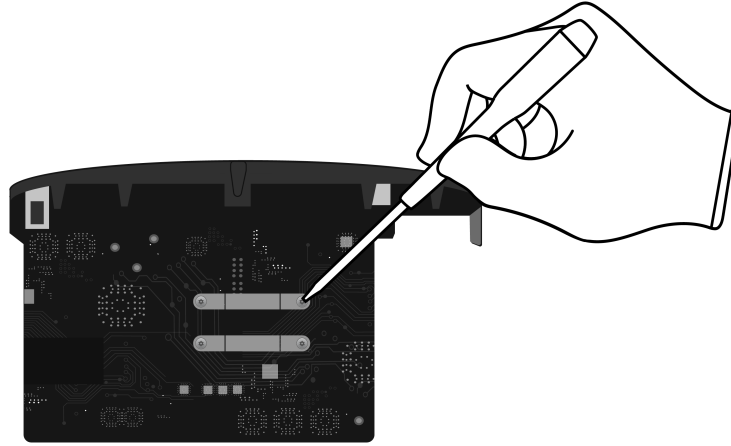
Fasteners (x5)

Fe


Ferrous



» Remove the eight Torx TR6 fasteners and two mounting straps from the bottom of the main logic board.



Fraction




Fasteners (x8)

Fe
Ferrous

A diagram showing a Torx TR6 fastener icon. Below the icon is the text "Fasteners (x8)". To the right of the diagram is a green box containing the chemical symbol "Fe" and the word "Ferrous" below it.

Fraction

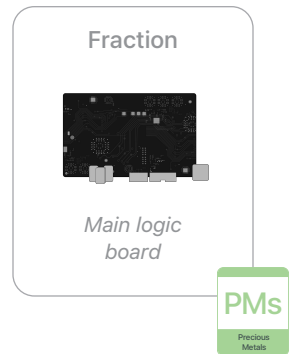
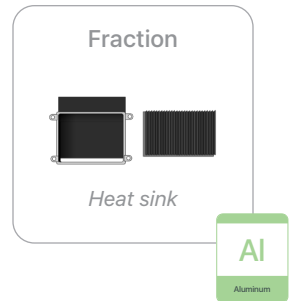
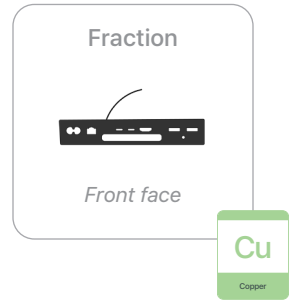
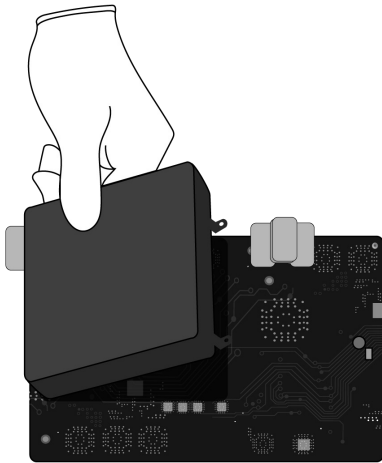
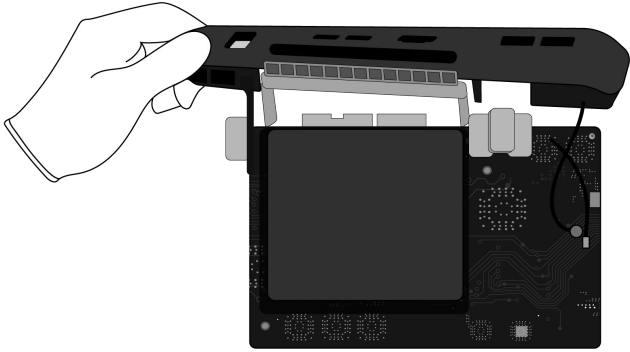


Mounting straps

Fe
Ferrous

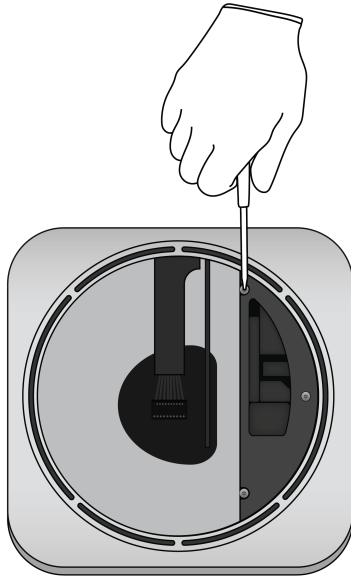
A diagram showing two mounting straps icons. Below the icons is the text "Mounting straps". To the right of the diagram is a green box containing the chemical symbol "Fe" and the word "Ferrous" below it.

» Pull the front face and heat sink off the main logic board.



10. Remove the power adapter ring.

- » *Remove the three Torx TR6 fasteners holding the power supply to the enclosure.*



Tools Used



Fraction

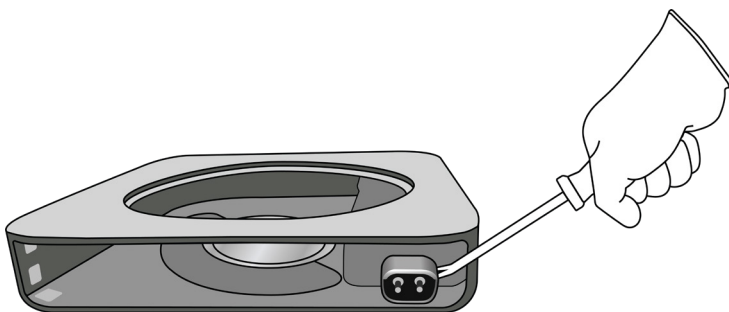


Fasteners (x3)

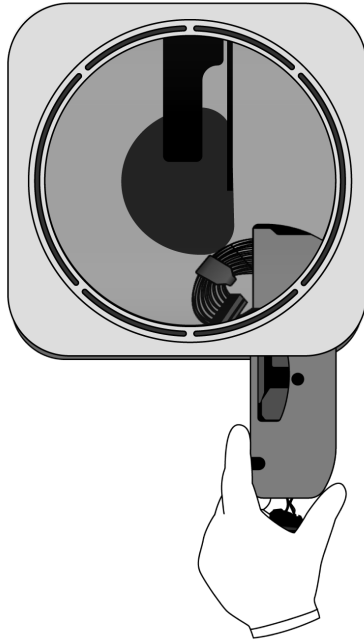
Fe

Ferrous

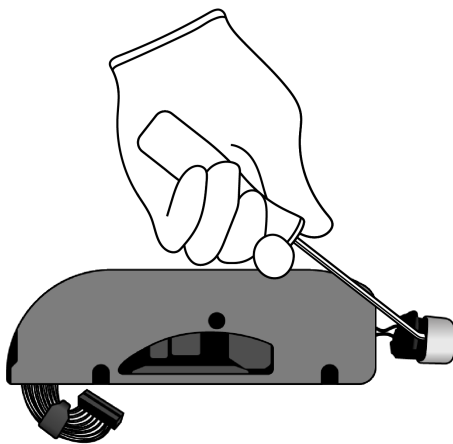
- » *Use the nail-pulling screwdriver to pry the power supply away from the enclosure.*




- » *Slide the power supply out of the enclosure. Set the enclosure aside.*



- » *Use the miniature pry bar to remove the power adapter ring from the power supply.*



Fraction

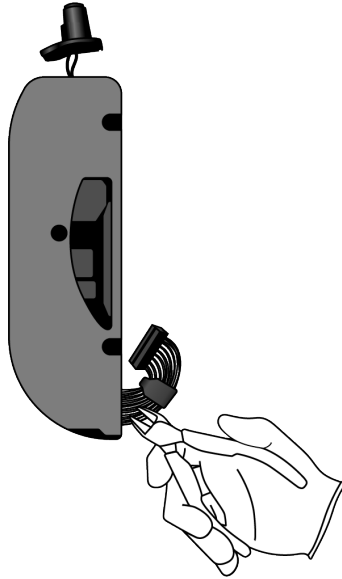


Adapter ring

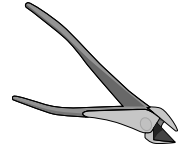
Fe
Ferrous

A diagram showing a small, cylindrical component (the power adapter ring) with a label "Adapter ring" below it. To the right is a green square icon with the chemical symbol "Fe" and the word "Ferrous" below it. The entire diagram is enclosed in a rounded rectangle.

11. Cut off the wires and the adapter.



Tools Used



Fraction



Adapter

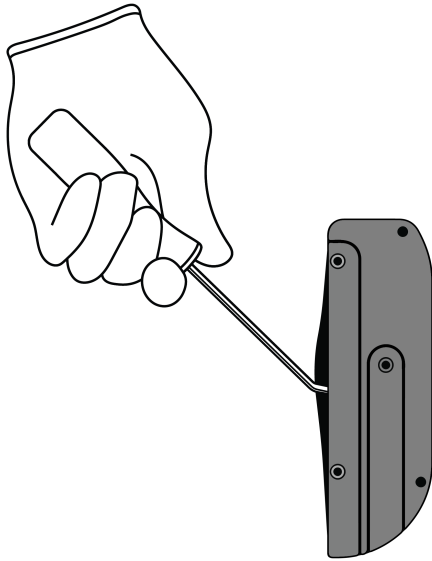


Wires

Cu

Copper

12. Pry off the plastic cover.



Tools Used



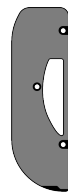
Fraction



Power supply

PMs
Precious Metals

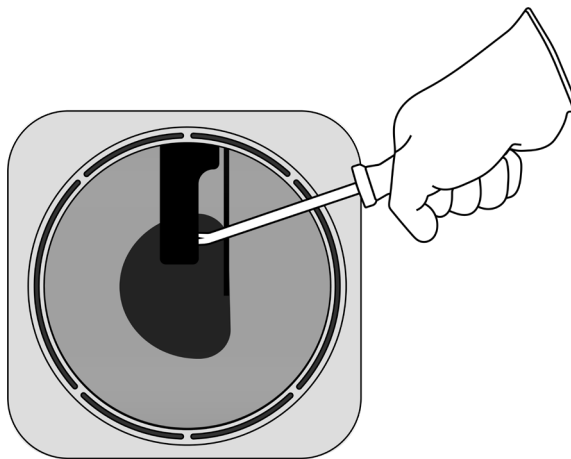
Fraction



Power supply cover

PL
Plastics

13. Remove the wire channel and the Bluetooth antenna from inside the enclosure.



Tools Used



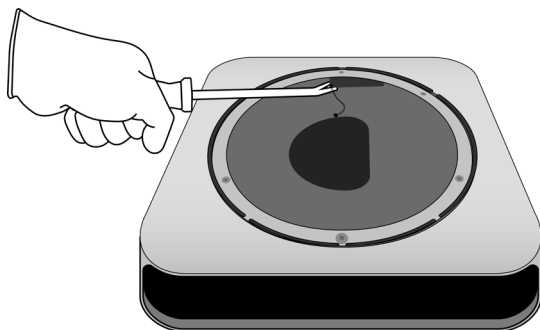
Fraction



Wire channel

PL

Plastics



Fraction

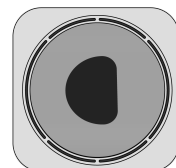


Bluetooth antenna

Cu

Copper

Fraction



Enclosure

Al

Aluminum

Material Categorization of Output Fractions

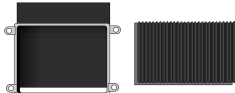
All outputs from this process must be managed, handled, and disposed of in accordance with applicable waste laws and regulations, including but not limited to the Waste Framework Directive and its national enactments in Europe.

Fraction	Downstream Processing
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Aluminum



Shield



Heat sink



Enclosure

Primary Target Material



Potential Additional Materials



Batteries



Coin cell battery

Primary Target Material



Fraction

Downstream Processing

Ferrous



Fasteners (2)



Fasteners (26)



Mounting straps

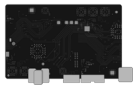


Adapter ring

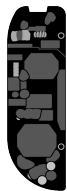
Primary Target Material



Logic Boards



Main logic board



Power supply

Primary Target Material



Potential Additional Materials



Fraction

Downstream Processing

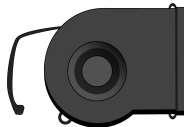
Mixed Electronics



Power cord



Wi-Fi antenna



Fan



Front face



Wires and adapter



Bluetooth antenna

Primary Target Material



Potential Additional Materials



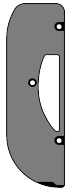
Fraction

Downstream Processing

Mixed Plastics



Dust cover



Power supply cover



Wire channel

Primary Target Material



Rare Earth Magnets



Speaker

Primary Target Material



Potential Additional Materials

