









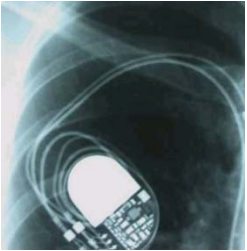







# Hazardous Materials Carried by Airline Passengers and Crewmembers

In general, U.S. Department of Transportation (DOT) regulations prohibit passengers and crewmembers from carrying hazardous materials (dangerous goods) aboard commercial aircraft. The table below lists the exceptions that allow passengers and crewmembers to carry a limited amount of hazardous materials in carry-on and/or checked baggage. Though allowable by DOT regulations (see 49 CFR, section 175.10), some of the items listed here may, at times, be prohibited/limited in the aircraft cabin by Transportation Security Administration (TSA) security rules (see [www.tsa.gov](http://www.tsa.gov)). Individual airlines and other nations may also have more restrictive rules on what passengers can carry aboard the aircraft. See [www.faa.gov/go/packsafe](http://www.faa.gov/go/packsafe) for additional guidance on hazmat in baggage.




Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text 49 CFR 175.10(a)...
<p><b>Toiletry and medicinal articles</b> including flammable and nonflammable aerosols when nozzles are protected</p> <p><b>Additional nonflammable aerosols</b> that are not medicinal or toilet articles</p> <p><i>Note: Nonflammable aerosols are rare.</i></p>	<p>✔ Toiletry or medicinal articles that are hazardous materials such as rubbing alcohol, flammable perfume and colognes, nail polish and remover, and aerosols (hairspray, shaving cream, sunscreen, insect repellent, etc.) —in carry-on* or checked baggage.</p>  <p>✔ Non-toiletry aerosols that contain nonflammable &amp; non-toxic gas—in checked baggage only.</p> 	<p>✘ Flammable aerosols that are not toiletry or medicinal articles or described in the other exceptions, such as aerosol laundry starch, insecticides, spray paint, cooking sprays, etc.</p>  <p>✘ Compressed oxygen, liquid oxygen, oxygen canisters. Medical oxygen may be used in the gate area but passengers may not bring/use their own oxygen onboard and may not carry it in checked baggage. FAA-approved personal oxygen concentrators are allowed.</p> 	<p>(1) (i) Non-radioactive medicinal and toilet articles for personal use (including aerosols) carried in carry-on and checked baggage. Release devices on aerosols must be protected by a cap or other suitable means to prevent inadvertent release;</p> <p>(ii) Other aerosols in Div. 2.2 (nonflammable gas) with no subsidiary risk carried in checked baggage only. Release devices on aerosols must be protected by a cap or other suitable means to prevent inadvertent release; and</p> <p>(iii) The aggregate quantity of these hazardous materials carried by each person may not exceed 2 kg (70 ounces) by mass or 2 L (68 fluid ounces) by volume and the capacity of each container may not exceed 0.5 kg (18 ounces) by mass or 500 ml (17 fluid ounces) by volume.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><i>*Liquids, gels, and aerosols in carry-on baggage are further limited to 100-ml (3.4 ounce) containers by TSA security checkpoint rules.</i></p> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><i>Compressed oxygen used by a passenger onboard the aircraft must be provided by the airline. Most U.S. airlines do not provide oxygen service but allow the use of personal oxygen concentrators.</i></p> </div>



Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text 49 CFR 175.10(a)...
<p><b>Matches and Lighters</b></p>	<p>☑ One packet of safety matches (regular matches) may be carried <u>on one's person</u> (e.g., in your pocket) or in <u>carry-on baggage</u>.*</p>  <p>☑ One lighter (gas/butane or absorbed liquid/Zippo-style) may be carried <u>on one's person</u> or in <u>carry-on baggage</u>.*</p>  <p><i>* When carryon bags are checked at the gate or at planeside, any matches and lighters in the bag being checked must be removed and kept with the passenger in the aircraft cabin.</i></p> <p>☑ Only lighters (including torch lighters) in a DOT-approved container may be in <u>checked baggage</u>.</p> 	<p>☒ Strike anywhere matches.</p>  <p>☒ Lighter refills, lighter fluid.</p>  <p>☒ The TSA forbids torch lighters in the aircraft cabin (carry-on).</p> 	<p>(2) One packet of safety matches or a lighter intended for use by an individual when carried on one's person or in carry-on baggage only. Lighter fuel, lighter refills, and lighters containing unabsorbed liquid fuel (other than liquefied gas) are not permitted on one's person or in carry-on or checked baggage.</p>
<p><b>Implanted medical devices</b></p> <p><b>Radioactive medicines injected or ingested</b></p>	<p>☑ Pacemakers or similar devices and radio-pharmaceuticals contained in the body.</p> 		<p>(3) Implanted medical devices in humans or animals that contain hazardous materials, such as a heart pacemaker containing Class 7 (radioactive) material or lithium batteries; and radio-pharmaceuticals that have been injected or ingested.</p>


Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text 49 CFR 175.10(a)...
<p><b>Alcoholic beverages</b></p>	<p>☑ Up to 5 liters of alcoholic beverages with an alcohol content of more than 24% but not more than 70% in unopened retail packages <u>in carry-on* or checked baggage.</u></p> <div data-bbox="444 474 704 852" data-label="Image"> </div> <p data-bbox="407 932 756 1129"><i>Note: Alcoholic beverages containing 24% or less alcohol by volume (beer, wine, etc..) are not subject to the DOT hazardous materials regulations.*</i></p> <div data-bbox="448 1163 711 1514" data-label="Image"> </div>	<p>☒ Alcoholic beverages with more than 70% alcohol by volume (more than 140 Proof) including 95% grain alcohol and 151-proof rum.</p> <div data-bbox="808 464 1040 848" data-label="Image"> </div>	<p>(4) Alcoholic beverages containing:</p> <ul style="list-style-type: none"> <li>(i) Not more than 24% alcohol by volume; or</li> <li>(ii) More than 24% and not more than 70% alcohol by volume when in unopened retail packagings not exceeding 5 liters (1.3 gallons) carried in carry-on or checked baggage, with a total net quantity per person of 5 liters (1.3) gallons for such beverages.</li> </ul> <div data-bbox="1117 926 1503 1339" data-label="Text" style="border: 1px solid black; padding: 10px;"> <p><i>* Quantities of alcohol placed in <u>carry-on baggage</u> prior to the passenger screening checkpoint are further limited by TSA security rules.</i></p> <p><i>Customs rules may also further restrict the amount of alcohol carried by passengers on international flights.</i></p> </div>
<p><b>Duty free perfume and cologne</b></p>	<p>☑ Flammable perfumes and colognes from the airport / airline duty free shops <u>carried on one's person or in carry-on baggage.</u></p> <div data-bbox="444 1793 748 1913" data-label="Image"> </div>		<p>(5) Perfumes and colognes purchased through duty-free sales and carried on one's person or in carry-on baggage.</p>



Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text 49 CFR 175.10(a)...
<p><b>Curling iron (cordless)</b></p>	<p>☑ A curling iron with a flammable gas cartridge installed and safety cover in place.</p> 	<p>☒ Extra flammable gas cartridges.</p> 	<p>(6) Hair curlers (curling irons) containing a hydrocarbon gas such as butane, no more than one per person, in carry-on or checked baggage. The safety cover must be securely fitted over the heating element. Gas refills for such curlers are not permitted in carry-on or checked baggage.</p>
<p><b>Small mercury medical thermometer</b></p>	<p>☑ Small personal mercury thermometer in a protective case.</p>		<p>(7) A small medical or clinical mercury thermometer for personal use, when carried in a protective case in carry-on or checked baggage.</p>
<p><b>Small arms ammunition</b></p> <p><i>Note: For rules on carrying unloaded firearms in checked baggage, visit the TSA website: <a href="http://www.tsa.gov">http://www.tsa.gov</a></i></p> <p><i>Also check your airline's policy on guns and ammunition.</i></p>	<p>☑ Small arms ammunition (up to 19.1 mm (.75 caliber) for rifle and pistol cartridges, any size shotgun shells) for personal use, when securely boxed and carried <u>in checked baggage only</u>.</p> 	<p>☒ Loose ammunition</p> <p>☒ Loaded firearms</p> <p>☒ Black powder</p> <p>☒ Primers</p> <p>☒ Percussion caps</p>	<p>(8) Small arms ammunition for personal use carried by a crewmember or passenger in checked baggage only, if securely packed in boxes or other packaging specifically designed to carry small amounts of ammunition. Ammunition clips and magazines must also be securely boxed. This paragraph does not apply to persons traveling under the provisions of 49 CFR 1544.219.</p>
<p><b>Self-defense spray</b></p> <p><b>Pepper spray</b></p>	<p>☑ One small (4-ounces or less) self-defense spray, protected from accidental activation, and carried <u>in checked baggage only</u>.*</p> 	<p>☒ Defense sprays containing more than 2% tear gas (CS, CN, etc.).</p> <p>☒ Defense sprays larger than 4 ounces.</p> 	<p>(9) One self-defense spray (see § 171.8 of this subchapter), not exceeding 118 mL (4 fluid ounces) by volume, that incorporates a positive means to prevent accidental discharge may be carried in checked baggage only.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><i>* Self-defense sprays are usually forbidden even in checked baggage outside the U.S. Therefore, airlines in the US with international connections often prohibit these.</i></p> </div>



Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text 49 CFR 175.10(a)...
<p><b>Dry ice</b></p>	<p>☑ Up to 2.5 kg (5.5 lbs.) of dry ice per person in <u>carry-on or checked baggage</u> in a package that allows venting of carbon dioxide gas.</p> 	<p>☒ Dry ice in air-tight packages.</p> <p>☒ Dry ice in checked baggage that is not properly marked.</p>	<p>(10) Dry ice (carbon dioxide, solid), with the approval of the operator:</p> <p>(i) Quantities may not exceed 2.5 kg (5.5 pounds) per person when used to pack perishables not subject to the HMR. The package must permit the release of carbon dioxide gas; and</p> <p>(ii) When carried in checked baggage, each package is marked “DRY ICE” or “CARBON DIOXIDE, SOLID,” and marked with the net weight of dry ice or an indication the net weight is 2.5 kg (5.5 pounds) or less.</p>
<p><b>Self-inflating lifejacket</b></p> <p><b>Self-inflating safety vest</b></p>	<p>☑ A life jacket, motorcycle safety vest, or similar vest containing up to two small nonflammable gas <i>cartridges</i> plus two spare cartridges in <u>carry-on or checked baggage</u>.</p>  	<p>☒ Avalanche backpacks* containing compressed gas cylinders or pyrotechnics.</p>  <div data-bbox="787 1354 1063 1921" style="border: 1px solid black; padding: 5px;"> <p><i>*International regulations allow avalanche backpacks in baggage but the U.S. does not.</i></p> <p><i>Avalanche backpacks with empty cylinders (and no pyrotechnic materials) are allowed in baggage in the U.S.; but the empty cylinders may still be restricted by the TSA if security officers can't see inside the cylinder.</i></p> </div>	<p>(11) A single self-inflating personal safety device such as a life jacket or vest fitted with no more than two small gas cartridges (containing no hazardous material other than a Div. 2.2 gas) for inflation purposes plus no more than two spare cartridges. The personal safety device and spare cartridges may be carried in carry-on or checked baggage, with the approval of the aircraft operator, and must be packed in such a manner that it cannot be accidentally activated.</p>




Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text 49 CFR 175.10(a)...
<p><b>Gas cylinders for mechanical limbs</b></p>	<p>☑ Nonflammable gas cylinders/cartridges in mechanical limbs plus spares in <u>checked or carry-on baggage</u>.</p> 		<p>(12) Small compressed gas cylinders of Division 2.2 (containing no hazardous material other than a Division 2.2 gas) worn by the passenger for the operation of mechanical limbs and, in carry-on and checked baggage, spare cylinders of a similar size for the same purpose in sufficient quantities to ensure an adequate supply for the duration of the journey.</p>
<p><b>Mercury barometer or thermometer</b></p>	<p>☑ Larger mercury thermometers and barometers carried by government weather personnel in <u>carry-on baggage only</u>. Must be in leak-proof, mercury-proof packaging.</p> 		<p>(13) A mercury barometer or thermometer carried as carry-on baggage, by a representative of a government weather bureau or similar official agency, provided that individual advises the operator of the presence of the barometer or thermometer in his baggage. The barometer or thermometer must be packaged in a strong packaging having a sealed inner liner or bag of strong, leak proof and puncture-resistant material impervious to mercury, which will prevent the escape of mercury from the package in any position.</p>





Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text 49 CFR 175.10(a)...
<p><b>Heat-producing equipment (battery operated)</b></p>	<p>☑ Diving lamps and other battery-operated extreme heat producing equipment in <u>carry-on or checked baggage</u>. Energy source or a heat producing component must be disconnected or removed.</p> 	<p>☒ Heat-producing devices containing batteries without protection from accidental activation.</p> <p>☒ Unprotected spare batteries.</p> <div data-bbox="792 890 1047 1346" style="border: 1px solid black; padding: 5px; margin-top: 20px;"> <p><i>Removed or spare batteries must be protected from short circuit—don't allow the battery terminals to touch other metal.</i></p> <p><i>Removed or spare lithium batteries must be carried in carry-on baggage.</i></p> </div>	<p><b>(14)</b> Electrically powered heat-producing articles (e.g., battery-operated equipment such as diving lamps and soldering equipment) as checked* or carry-on baggage only and with the approval of the operator of the aircraft. The heat-producing component, the energy source, or other component (e.g., fuse) must be removed to prevent unintentional functioning during transport. Any battery that is removed must be protected against short circuit by placement in original retail packaging or by otherwise insulating terminals (e.g., by taping over exposed terminals or placing each battery in a separate plastic bag or protective pouch).</p>


Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text 49 CFR 175.10(a)...
<p><b>Wheelchairs and mobility devices with <u>nospillable</u> or <u>dry sealed batteries</u></b></p> <p><i>See separate entry for lithium ion batteries.</i></p> <p><i>"Nospillable" is intended to describe "wet" batteries where the electrolyte won't leak from a cracked battery case. This includes gel-cell and AGM batteries.</i></p>	<p>☑ Wheelchair or other battery powered mobility device equipped with a nospillable battery <u>when carried as checked baggage.</u></p>  		<p><b>(15)</b> A wheelchair or other battery-powered mobility aid equipped with a nospillable battery or a dry sealed battery when carried as checked baggage, provided—</p> <p>(i) The battery conforms to the requirements of § 173.159a(d) of this subchapter for non-spillable batteries;</p> <p>(ii) The battery conforms to the requirements of § 172.102(c)(1), Special provision 130 of this subchapter for dry sealed batteries, as applicable;</p> <p>(iii) Visual inspection including removal of the battery, where necessary, reveals no obvious defects (removal of the battery from the housing should be performed by qualified airline personnel only);</p> <p>(iv) The battery is disconnected and the battery terminals are protected to prevent short circuits, unless the wheelchair or mobility aid design provides an effective means of preventing unintentional activation, and</p> <p>(A) Securely attached to the wheelchair or mobility aid;</p> <p>(B) Is removed and placed in a strong, rigid packaging marked "NONSPILLABLE BATTERY" (unless fully enclosed in a rigid housing that is properly marked);</p> <p>(C) Is removed and placed in a strong, rigid packaging marked with the words "not restricted" in accordance with paragraph (c)(2) of § 172.102(c)(1), Special provision 130, of this subchapter; or</p> <p>(D) Is handled in accordance with paragraph (a)(16)(iv) of this section.</p>





Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text 49 CFR 175.10(a)...
<p><b>Wheelchairs and mobility devices with <u>wet spillable</u> batteries</b></p>	<p>☑ Wheelchair or other battery powered mobility device equipped with a <u>spillable battery when carried as checked baggage</u>. Device must be stowed so the battery is upright or the battery must be disconnected and packaged separately.</p> <div data-bbox="446 577 706 819" data-label="Image"> </div> <div data-bbox="454 871 738 1102" data-label="Image"> </div>		<p><b>(16)</b> A wheelchair or other battery-powered mobility aid equipped with a spillable battery, when carried as checked baggage, provided—</p> <ul style="list-style-type: none"> <li>(i) Visual inspection including removal of the battery, where necessary, reveals no obvious defects (however, removal of the battery from the housing should be performed by qualified airline personnel only);</li> <li>(ii) The battery is disconnected and terminals are insulated to prevent short circuits;</li> <li>(iii) The pilot-in-command is advised, either orally or in writing, prior to departure, as to the location of the battery aboard the aircraft; and</li> <li>(iv) The wheelchair or mobility aid is loaded, stowed, secured and unloaded in an upright position, or the battery is removed, and carried in a strong, rigid packaging under the following conditions: <ul style="list-style-type: none"> <li>(A) The packaging must be leak-tight and impervious to battery fluid. An inner liner may be used to satisfy this requirement if there is absorbent material placed inside of the liner and the liner has a leakproof closure;</li> <li>(B) The battery must be protected against short circuits, secured upright in the packaging, and be packaged with enough compatible absorbent material to completely absorb liquid contents in the event of rupture of the battery; and</li> <li>(C) The packaging must be labeled with a CORROSIVE label, marked to indicate proper orientation, and marked with the words “Battery, wet, with wheelchair.”</li> </ul> </li> </ul>




Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text 49 CFR 175.10(a)...
<p><b>Wheelchairs and mobility devices with <u>lithium ion batteries</u></b></p> <div data-bbox="82 1297 386 1843" style="border: 1px solid black; padding: 5px; margin-top: 20px;"> <p><i>"Watt Hours" Explained</i></p> <p><i>Battery rules sometimes specify Watt Hours (Wh).</i></p> <p><i>Volts x Amp Hours (Ah) = Watt Hours (Wh)</i></p> <p style="text-align: center;"><i>or</i></p> <p><i>Volts x mAh ÷ 1000 = Watt Hours</i></p> <p><i>Example: a battery rated at 12 volts and 3000 mAh (or 3 Ah) = 36 Wh</i></p> </div>	<p>✔ Wheelchair or other battery powered mobility device equipped with a <u>lithium ion battery</u> (rechargeable lithium battery) carried as <u>checked baggage</u>.</p> <div style="text-align: center;">        </div> <p>✔ If a collapsible mobility device has an unprotected removable lithium ion battery, <u>the battery must be removed, terminals protected, and carried in carry-on baggage</u>—with airline approval. The battery (and one spare) cannot exceed 300 watt hours (Wh) each. If two spare batteries are carried they are limited to 160 Wh each.</p>	<p>✘ Lithium ion batteries exceeding a rating of 300 watt hours (Wh).</p>	<p><b>(17)</b> A wheelchair or other mobility aid equipped with a lithium ion battery, when carried as checked baggage, provided—</p> <p>(i) The lithium ion battery must be of a type that successfully passed each test in the UN Manual of Tests and Criteria (IBR; see §171.7 of this subchapter), as specified in §173.185 of this subchapter, unless approved by the Associate Administrator;</p> <p>(ii) The operator must verify that:</p> <p>(A) Visual inspection of the wheelchair or other mobility aid reveals no obvious defects;</p> <p>(B) Battery terminals are protected from short circuits (e.g., enclosed within a battery housing);</p> <p>(C) The battery must be securely attached to the mobility aid; and</p> <p>(D) Electrical circuits are isolated;</p> <p>(iii) The wheelchair or other mobility aid must be loaded and stowed in such a manner to prevent its unintentional activation and its battery must be protected from short circuiting;</p> <p>(iv) The wheelchair or other mobility aid must be protected from damage by the movement of baggage, mail, service items, or other cargo;</p> <p>(v) Where a lithium ion battery-powered wheelchair or other mobility aid is specifically designed to allow its battery to be removed by the user (e.g., collapsible):</p> <p>(A) The battery must be removed from the wheelchair or other mobility aid according to instructions provided by the wheelchair or other mobility aid owner or its manufacturer;</p> <p>(B) The battery must be carried in carry-on baggage only;</p> <p>(C) Battery terminals must be protected from short circuits (by placement in original retail packaging or otherwise insulating the terminal e.g., by taping over exposed terminals or placing each battery in a separate plastic bag or protective pouch);</p> <p>(D) The battery must not exceed 300 Watt-hour (Wh); and</p> <p>(E) A maximum of one spare battery not exceeding 300 Wh or two spares not exceeding 160 Wh each may be carried;</p> <p>(vi) The pilot-in-command is advised either orally or in writing, prior to departure, as to the location of the lithium ion battery or batteries aboard the aircraft.</p>





Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text 49 CFR 175.10(a)...
<p><b>Batteries in portable electronic devices for personal use</b></p> <p><b>Spare batteries for these devices</b></p> <p><i>See next page for electronic cigarettes and vaporizers</i></p> <div data-bbox="87 1360 386 1906" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>"Watt Hours" Explained</b></p> <p>Battery rules sometimes specify Watt Hours (Wh).</p> <p><math>\text{Volts} \times \text{Amp Hours (Ah)} = \text{Watt Hours (Wh)}</math></p> <p>or</p> <p><math>\text{Volts} \times \text{mAh} \div 1000 = \text{Watt Hours}</math></p> <p>Example: a battery rated at 12 volts and 3000 mAh (or 3 Ah) = 36 Wh</p> </div>	<p>✔ Batteries <u>installed</u> in portable electronic devices may be in <u>carry-on*</u> and <u>checked baggage</u>.</p>  <p>✔ All spare batteries must be protected from damage and short circuit (in original packaging or otherwise securely packed with battery terminals protected from contacting other metal).</p> <p>✔ <u>Spare lithium metal and lithium ion</u> batteries must be placed in <u>carry-on baggage only</u>—and removed from carry-on if the bag is checked at the gate or at <u>planeside</u>.</p>  <p>✔ Spare non-lithium dry batteries (alkaline, NiMH, etc.) may be in <u>carry-on or checked baggage</u> if protected from damage and short circuit.</p>  <p>✔ Nonspillable gel-cell batteries for portable electronics are limited to 12 volts and 100 watt hours. There's a limit of two (2) spare gel-cell batteries. Spares may be in <u>carry-on or checked baggage</u> when protected from <u>damage and short circuit</u>.</p> 	<p>✘ Spare lithium metal and lithium ion batteries in checked baggage—<i>including bags checked at the gate or at planeside</i>.</p> <p>✘ Loose batteries not protected from short circuit.</p> <p>✘ Batteries being carried for resale/distribution (not personal use).</p> <p>✘ Wet batteries.</p> <p>✘ Car and motorcycle batteries.</p> <p><i>See separate entry for battery-powered wheelchairs and mobility devices.</i></p> <p>✘ Devices with batteries installed but no protection from accidental activation—if they can cause significant heat when accidentally turned on. This may include toys, wheeled devices, and battery-powered drills without a drill case or other switch protection. Removed batteries must be placed in carry-on and protected from short circuit.</p> <div data-bbox="787 1528 1052 1795" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><i>* TSA security rules prohibit many power tools (drills, saws, etc.) in carry-on baggage.</i></p> </div>	<p><b>(18)</b> Except as provided in §173.21 of this subchapter, portable electronic devices (e.g., watches, calculating machines, cameras, cellular phones, laptop and notebook computers, camcorders, medical devices etc.) containing dry cells or dry batteries (including lithium cells or batteries) and spare dry cells or batteries for these devices, when carried by passengers or crew members for personal use. Portable electronic devices powered by lithium batteries may be carried in either checked or carry-on baggage. <b>Spare lithium batteries must be carried in carry-on baggage only.</b> Each installed or spare lithium battery must be of a type proven to meet the requirements of each test in the UN Manual of Tests and Criteria, Part III, Subsection 38.3 and each spare lithium battery must be individually protected so as to prevent short circuits (e.g., by placement in original retail packaging, by otherwise insulating terminals by taping over exposed terminals, or placing each battery in a separate plastic bag or protective pouch). <b>In addition, each installed or spare lithium battery must not exceed the following:</b></p> <p>(i) For a lithium metal battery, a lithium content of not more than 2 grams per battery; or</p> <p>(ii) <b>For a lithium ion battery, the Watt-hour rating must not exceed 100 Wh.</b> With the approval of the operator, portable electronic devices may contain lithium ion batteries exceeding 100 Wh, but not exceeding 160 Wh and no more than two individually protected lithium ion batteries each exceeding 100 Wh, but not exceeding 160 Wh, may be carried per person as spare batteries in carry-on baggage.</p> <p>(iii) For a non-spillable battery, the battery and equipment must conform to §173.159a(d). Each battery must not exceed a voltage greater than 12 volts and a watt-hour rating of not more than 100 Wh. No more than two individually protected spare batteries may be carried. Such equipment and spare batteries must be carried in checked or carry-on baggage.</p> <p>(iv) Articles containing lithium metal or lithium ion cells or batteries the primary purpose of which is to provide power to another device must be carried as spare batteries in accordance with the provisions of this paragraph.</p>

Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text 49 CFR 175.10(a)...
<p><b>Electronic cigarettes (e-cigarettes)</b></p> <p><b>Vaporizers (vaping devices, vape pens, etc.)</b></p>	<p>✓ E-cigarettes and vaporizer devices carried on one's person (pocket) or in <u>carry-on baggage</u>.</p> <p><i>Devices and spare batteries must be removed from carry-on bags that are checked at the gate or planeside.</i></p>  <p>✓ Spare batteries in <u>carry-on baggage</u> –when batteries are protected from damage and short circuit.</p>	<p>✗ E-cigarettes, vaping devices, and similar devices in <u>checked baggage</u> – <i>including carry-on bags that are checked at the gate or planeside.</i></p> <p>✗ Spare lithium batteries in <u>checked baggage</u> – <i>including carry-on bags that are checked at the gate or planeside.</i></p> <p>✗ Recharging the devices or batteries while on board the aircraft.</p> <p>✗ Devices that are not protected from accidental activation or overheating, including the use of incompatible batteries.</p> <p>✗ Unprotected spare batteries.</p>	<p>(19) Except as provided in §173.21 of this subchapter, battery-powered portable electronic smoking devices (e.g., e-cigarettes, e-cigs, e-cigars, e-pipes, e-hookahs, personal vaporizers, electronic nicotine delivery systems) when carried by passengers or crewmembers for personal use must be carried on one's person or in carry-on baggage only.</p> <p>Spare lithium batteries must be individually protected so as to prevent short circuits (by placement in original retail packaging or by otherwise insulating terminals, e.g., by taping over exposed terminals or placing each battery in a separate plastic bag or protective pouch).</p> <p>Each lithium battery must be of a type which meets the requirements of each test in the UN Manual of Tests and Criteria, Part III, Sub-section 38.3.</p> <p>Recharging of the devices and/or the batteries on board the aircraft is not permitted.</p> <p>Each battery must not exceed the following:</p> <p>(i) For lithium metal batteries, a lithium content of 2 grams; or</p> <p>(ii) For lithium ion batteries, a Watt-hour rating of 100 Wh.</p>

Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text 49 CFR 175.10(a)...
<p><b>Fuel cells for portable electronic devices</b></p>	<p>☑ Fuel cells for portable electronics allowed in <u>carry-on baggage only</u>.</p> <p>☑ Two spare fuel cell cartridges allowed in carry-on baggage only, except that cartridges containing only flammable liquid or corrosives may also be carried in checked baggage.</p> <p>The fuel cells must be marked "Approved for carriage in aircraft cabin."</p> <p>The fuel cell <i>cartridges</i> must be marked with the quantity and type of fuel.</p> 	<p>☒ Refilling a fuel cell (other than installing a cartridge) is not allowed on the aircraft.</p> 	<p><b>(20)</b> Fuel cells used to power portable electronic devices (e.g., cameras, cellular phones, laptop computers and camcorders) and spare fuel cell cartridges when transported personal use under the following conditions:</p> <p>(i) Fuel cells and fuel cell cartridges may contain only Division 2.1 liquefied flammable gas, or hydrogen in a metal hydride, Class 3 flammable liquid (including methanol), Division 4.3 water-reactive material, or Class 8 corrosive material;</p> <p>(ii) The quantity of fuel in any fuel cell or fuel cell cartridge may not exceed:</p> <p>(A) 200 mL (6.76 ounces) for liquids;</p> <p>(B) 120 mL (4 fluid ounces) for liquefied gases in non-metallic fuel cell cartridges, or 200 mL (6.76 ounces) for liquefied gases in metal fuel cell cartridges;</p> <p>(C) 200 g (7 ounces) for solids; or</p> <p>(D) For hydrogen in metal hydride, the fuel cell cartridges must have a water capacity of 120 mL (4 fluid ounces) or less;</p> <p>(iii) No more than two spare fuel cell cartridges may be carried by a passenger or crew member as follows:</p> <p>(A) Fuel cell cartridges containing Class 3 flammable liquid (including methanol) and Class 8 corrosive material in carry-on or checked baggage; and</p> <p>(B) Division 2.1 liquefied flammable gas or hydrogen in a metal hydride and Division 4.3 water-reactive material in carry-on baggage only;</p> <p>(iv) Fuel cells containing fuel are permitted in carry-on baggage only;</p> <p>(v) Fuel cell cartridges containing hydrogen in a metal hydride must meet the requirements in §173.230(d) of this subchapter;</p> <p>(vi) Refueling of a fuel cell aboard an aircraft is not permitted except that the installation of a spare cartridge is allowed;</p> <p>(vii) Each fuel cell and fuel cell cartridge must conform to IEC 62282-6-100 and IEC 62282-6-100 Amend. 1 (IBR; see §171.7 of this subchapter) and must be marked with a manufacturer's certification that it conforms to the specification. In addition, each fuel cell cartridge must be marked with the maximum quantity and type of fuel in the cartridge;</p> <p>(viii) Interaction between fuel cells and integrated batteries in a device must conform to IEC 62282-6-100 and IEC 62282-6-100 Amend. 1 (IBR, see §171.7 of this subchapter). Fuel cells whose sole function is to charge a battery in the device are not permitted; and</p> <p>(ix) Fuel cells must be of a type that will not charge batteries when the consumer electronic device is not in use and must be durably marked by the manufacturer with the wording: "APPROVED FOR CARRIAGE IN AIRCRAFT CABIN ONLY" to indicate that the fuel cell meets this requirement.</p>



Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text 49 CFR 175.10(a)...
<p><b>Permeation devices for calibrating air quality monitoring equipment</b></p>	<p>✔ Small permeation devices containing hazardous materials <u>in checked baggage only</u>. Devices must be in double layers of hermetically sealed inner packaging and then a strong outer packaging.</p> 		<p>(21) Permeation devices for calibrating air quality monitoring equipment when carried in checked baggage provided the devices are constructed and packaged in accordance with § 173.175.</p>
<p><b>Internal combustion or fuel cell engines</b></p>	<p>✔ Engines and engine-powered equipment carried <u>as checked baggage</u> if all fuel (including residue and vapors) is completely removed. Engine must not have a battery or other hazardous materials.</p> 	<p>✘ Equipment that still has fuel in it, including residue or vapors.</p> 	<p>(22) An internal combustion or fuel cell engine or a machine or apparatus containing an internal combustion or fuel cell engine when carried as checked baggage, provided—</p> <ul style="list-style-type: none"> <li>(i) The engine contains no liquid or gaseous fuel. An engine may be considered as not containing fuel when the engine components and any fuel lines have been completely drained, sufficiently cleaned of residue, and purged of vapors to remove any potential hazard and the engine when held in any orientation will not release any liquid fuel;</li> <li>(ii) The fuel tank contains no liquid or gaseous fuel. A fuel tank may be considered as not containing fuel when the fuel tank and the fuel lines have been completely drained, sufficiently cleaned of residue, and purged of vapors to remove any potential hazard;</li> <li>(iii) It is not equipped with a wet battery (including a non-spillable battery), a sodium battery or a lithium battery; and</li> <li>(iv) It contains no other hazardous materials subject to the requirements of this subchapter.</li> </ul>

Passenger Hazmat Exception	Allowed	Not Allowed	Regulatory Text 49 CFR 175.10(a)...
<p><b>Specimens in formaldehyde or alcohol solutions</b></p>	<p>☑ Non-infectious specimens in formaldehyde* or alcohol solutions in <u>carry-on or checked baggage</u>. Inner containers must contain no more than 30 ml of the formaldehyde or alcohol solution. The aggregate quantity of formaldehyde or alcohol solution must not exceed one liter (1 L) for the entire outer packaging.**</p> <p><i>See 49 CFR 173.4b(b) for full packaging requirements.</i></p> 		<p>(23) Non-infectious specimens transported in accordance with § 173.4b(b).</p> <div data-bbox="1122 359 1484 632" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p><i>* Formaldehyde solutions containing less than 10% formaldehyde are not restricted as hazardous materials. Two layers of leakproof packaging are still recommended.</i></p> </div> <div data-bbox="1122 663 1484 814" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p><i>**Liquids in carry-on baggage are further limited by TSA security rules.</i></p> </div>
<p><b>Liquid nitrogen dry shippers</b></p>	<p>☑ Liquid nitrogen in a dry shipper (insulated shipping flask that absorbs liquid nitrogen into an inner liner) carried as <u>checked or carry-on baggage</u>. All liquid must be absorbed. Packaging must allow nitrogen gas to vent.</p> 		<p>(24) Insulated packagings containing refrigerated liquid nitrogen when carried in checked or carry-on baggage in accordance with the ICAO Technical Instructions (IBR, see § 171.7 of this subchapter), Packing Instruction 202, the packaging specifications in part 6, chapter 5, and special provision A152.</p>
<p><b>Small nonflammable gas cartridges</b></p> <p><b>Bicycle tire inflation kits</b></p>	<p>☑ Small gas cartridges (50 ml volume or less) <u>in checked baggage</u>, installed in or with a device. Up to four cartridges total. Spare cartridges should be securely packed. Airline approval required.</p> 	<p>☒ Cartridges and cylinders with a volume larger than 50 ml (larger than a 28-gram carbon dioxide cartridge).</p> 	<p>(25) Small cartridges fitted into devices with no more than four small cartridges of carbon dioxide or other suitable gas in Division 2.2, without subsidiary risk with the approval of the operator. The water capacity of each cartridge must not exceed 50 mL (equivalent to a 28 g cartridge).</p> <div data-bbox="1097 1671 1511 1885" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p><i>TSA security rules prohibit these gas cartridges in carry-on bags. Air guns in checked baggage may not have cartridges installed.</i></p> </div>

**Not a complete list!!!** The preceding chart is not a complete listing of all the hazardous materials that may or may not be carried by airline passengers. There are many more prohibited hazardous materials (car batteries, fuel, fireworks, etc.) and allowed items (nonflammable paints, portable oxygen concentrators, camp stoves purged of fuel, etc.) that the FAA provides guidance on.

**For more in-depth information, please go to:**

**<http://www.faa.gov/Go/PackSafe>**

**Or scan the QR code below with your smart phone:**



You may also contact the U.S. DOT Hazmat Information Center with your hazmat questions at: [phmsa.hm-infocenter@dot.gov](mailto:phmsa.hm-infocenter@dot.gov) or 1-800-467-4922

For questions on weapons, sharp objects, liquids at the screening checkpoint, and other security questions; please go to the Transportation Security Administration's web site at: <http://www.tsa.gov/travel>



**When in doubt...**

**Leave it out!**