

this is makers

There are a wide range of materials that can be cut, scored and engraved by the laser cutter. However, some simply can't be processed (for example. metals) and some are extremely hazardous to either humans or the machine itself .

Therefore, we have provided a full list of materials that are not laser compatible and/or safe for your reference. If you are unsure if your material is safe, please [contact us](#) before submitting your order.

Material	Danger	Cause / Consequence
<ul style="list-style-type: none"> ● Polyvinyl chloride (PVC) ● Vinyl ● Chromium Tanned Leather ● Pleather ● Artificial / Faux Leather 	<ul style="list-style-type: none"> ● Toxic Fumes (Chlorine Gas) ● Damages Laser Parts 	<p>This material will damage the laser as it causes the metal of the machine to corrode as chlorine gas is released when cutting. Chlorine gas is also extremely toxic to breathe in being a danger to the operator as well as the machine.</p>
<p>Thick (more than 1mm)</p> <ul style="list-style-type: none"> ● Polycarbonate ● Lexan 	<ul style="list-style-type: none"> ● Cuts Very Poorly ● Discolours ● Fire Hazard 	<p>The window of the laser cutter is made of Polycarbonate because <i>polycarbonate strongly absorbs infrared radiation</i>. This is the frequency of light the laser cutter uses to cut materials, so it is very ineffective at cutting polycarbonate.</p> <p>Polycarbonate is a poor choice for laser cutting. It creates long stringy clouds of soot that float up and ruin the optics of the machine.</p>
<ul style="list-style-type: none"> ● ABS (Acrylonitrile Butadiene Styrene) 	<ul style="list-style-type: none"> ● Melts ● Toxic Fumes (Cyanide Gas) ● Fire Hazard 	<p>ABS does not cut well in a laser cutter. It tends to melt rather than vaporise, and has a much higher chance of catching on fire. This will leave behind melted gooey deposits on the cutting bed. It also does not engrave well as it tends to met.</p> <p>Cutting ABS plastic emits hydrogen cyanide, which is extremely unsafe at any concentration.</p>
<ul style="list-style-type: none"> ● HDPE (High Density Poly Ethylene) ● Milk Bottle Plastic 	<ul style="list-style-type: none"> ● Melts ● Fire Hazard 	<p>Much like ABS, HDPE melts and becomes gooey. This makes it much more like to catch fire.</p>
<ul style="list-style-type: none"> ● PolyStyrene Foam 	<ul style="list-style-type: none"> ● Fire Hazard 	<p>An extremely flammable material that catches fire quickly, burns rapidly and melts.</p>

NON LASER COMPATIBLE MATERIALS

Material	Danger	Cause / Consequence
<ul style="list-style-type: none"> ● PolyPropylene Foam 	<ul style="list-style-type: none"> ● Melts ● Fire Hazard 	Like PolyStyrene, it too is very flammable and melts. The melted drops continue to burn and turn into rock-hard drips and pebbles which can cause damage to the machine.
<ul style="list-style-type: none"> ● Epoxy ● Epoxy Resin ● Cast Epoxy 	<ul style="list-style-type: none"> ● Burns ● Smoke ● Toxic Fumes (Cyanide Gas) 	Epoxy is an aliphatic resin, strongly cross-linked carbon chains. A CO ₂ laser can't cut it, and the resulting burned mess creates toxic fumes such as cyanide gas.
<ul style="list-style-type: none"> ● Fiberglass 	<ul style="list-style-type: none"> ● Toxic Fumes 	This is a mix of two materials which cannot be cut. These are: Glass (engrave only) and Epoxy Resin (toxic fumes)
<ul style="list-style-type: none"> ● Coated Carbon Fibre 	<ul style="list-style-type: none"> ● Toxic Fumes 	This is a mix of two materials which are Carbon Fibre and Epoxy Resin coating. However, very thin carbon fibre mat can be cut, with some fraying - but not when coated and we do not recommend this.
<p>ANY food items including (<i>but not limited to</i>):</p> <ul style="list-style-type: none"> ● Meat ● Seaweed 'Nori' Sheets ● Cookie Dough ● Bread ● Tortillas ● Pumpkins 	<ul style="list-style-type: none"> ● Not Food Safe ● Risk of Substances (Wood & Acrylic Residue/Smoke) 	Food cannot be deemed "food safe" if cut in a laser where other materials have been cut that are not food such as wood or acrylic. This has a high risk of contamination of the food from substances from non-food-safe products.
<p>Material with Sticky Glue Backing including (<i>but not limited to</i>):</p> <ul style="list-style-type: none"> ● Cork Tiles ● Thin Wood Laminate ● Acrylic Tiles ● Paper Stickers 	<ul style="list-style-type: none"> ● Damages Laser Parts 	There are many normally laserable items such as thin wood laminates that you can purchase that become un-cuttable when the manufacturer adds a layer of peel-off glue on the bottom to attach them to surfaces. The glue will vaporise forming a coating on the lens that will coat it, cloud it, heat it, and then potentially crack the lens. The glue residue is worse than resin, and can't be removed without risking damage to the lens which will then require a lens replacement.
<ul style="list-style-type: none"> ● Polyvinyl Butyrale (PVB) 		

Material	Danger	Cause / Consequence
<ul style="list-style-type: none"> ● Polytetrafluoroethylenes (PTFE /Teflon) 	<ul style="list-style-type: none"> ● Toxic Fumes 	<p>Polymer fume fever or fluoropolymer fever, also informally called Teflon flu, is an inhalation fever caused by the fumes released when polytetrafluoroethylene (PTFE, known under the trade name Teflon) reaches temperatures of 300 °C (572 °F) to 450 °C (842 °F).^[1] When PTFE is heated above 450 °C the pyrolysis products are different and inhalation may cause acute lung injury.^[2] Symptoms are flu-like (chills, headaches and fevers) with chest tightness and mild cough. Onset occurs about 4 to 8 hours after exposure to the pyrolysis products of PTFE. A high white blood cell count may be seen and chest x-ray findings are usually minimal.</p>
<ul style="list-style-type: none"> ● Phenolic Resins 	<ul style="list-style-type: none"> ● Contains Formaldehyde ● Very Difficult to Cut ● Damages Laser Parts 	<p>This tends to be in exterior glues such as <i>Exterior Grade</i> Plywood which contains exterior grade glues. The laser has a very difficult time cutting through this which can cause damage to the optics of the machine. Normally, you use interior grade or laser grade plywood which do not contain phenolic resins and will not damage the laser.</p>
<ul style="list-style-type: none"> ● Beryllium oxide 	<ul style="list-style-type: none"> ● Toxic Particles/Dust 	<p>The laser operation has the potential to generate airborne particulate by inadvertently removing a very small amount of the beryllium oxide substrate.</p> <p>Most operations require controls, such as dust masks, to protect the product or ventilation to prevent workplace exposures from toxic dust and particles.</p>
<p>Any material that contains Halogens such as:</p> <ul style="list-style-type: none"> ● Fluorine ● Chlorine ● Bromine ● Iodine ● Astatine 	<ul style="list-style-type: none"> ● Toxic Fumes/Particles ● Damage Laser Parts 	