

## **Key to identifying fake amber necklaces and bracelets**

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Various materials have been used to fake amber jewellery for over 100 years. Scientists use sophisticated equipment such as Infra-Red Spectroscopy to identify them, however there are simple observations and tests that can be used to identify most kinds. Some fake materials are easy to spot, others are very realistic and are difficult to identify without scientific methods. As a rule of thumb if every bead is different (colour and shape) then it is likely to be genuine amber, though of course there are amber necklaces where the beads are similar to each other, particularly if they have been heat-treated or pressed. Polyester is the most common material used to fake amber these days, and can look just like the real thing. It can be spangled (contains circular cracks) and the beads can have irregular shapes. The colour itself is not a good indicator as although amber is generally amber-coloured, it can vary widely in colour, from white, through yellow, orange, red, brown to black; even green and blue forms exist. Of course plastics can be dyed any colour, and amber can also be dyed.

There are several tests that have been used to identify amber or fake amber-coloured materials –

- 1) The scratch test: does it scratch with a pin?
- 2) The saturated salt-water test: add seven heaped tea-spoons of salt to half a pint (or 250ml) of cold water stirring occasionally for half an hour. Drop the bead in and see if it floats. It is best to remove a bead from the necklace or bracelet so that no air is trapped down the thread hole. Make sure you thoroughly rinse it in water afterwards (preferably at room temperature, not hot or very cold), particularly down the thread hole. This does not work with beads with metal links or mounts as they will sink anyway.
- 3) The alcohol test: put a drip of alcohol on the surface, let it evaporate and see if it goes sticky. This is good test for copal (hardened tree resin) which is generally too soft for jewellery. Recently forgers have found a way of hardening copal to make it look and feel like amber, but we have not yet been able to get a necklace of this for testing, so this is not yet included in the key below.
- 4) The hot wire test: heat a wire, burn the surface of the bead and sniff the smoke. We do not advocate this test for health and safety reasons, as it could lead to the inhalation of carcinogenic chemicals, so this key has been designed to avoid this.
- 5) The Simichrome test- put a bit of Simichrome polish on a cotton bud, rub the surface of the bead and look at the colour of the residue. This test has been used for identifying Bakelite necklaces however it is not a good test. Red Bakelite produces a red/brown residue, however a similar result was observed from red polyester and a red plastic that we could not identify. Yellow Bakelite and yellow polyester produced a yellow residue. Clearly what you are seeing is the colour of the dye in the beads so this test is not included in the key below.

This key is designed specifically for identifying necklaces and bracelets, however it may also be useful for identifying other jewellery. For each question, if you are uncertain whether the answer is Yes or No, try both answers. Please note that the tests can be slightly damaging so are done at the owners risk. If you do not wish to, or are unable to do a particular test, try both answers.

This key is based on a wide selection of jewellery in the collection of the National Museums Scotland, much of which was purchased on the internet in 2012 and 2013. When we tested them, for some we found that they were made from different materials to what they were being sold as. It is unlikely that we have seen every type, so there may be exceptions, and new materials or methods to fake amber may come onto the market at any time. Also be aware of composite necklaces made from different kinds of beads, so if there are obvious groups of beads of a similar shape and/or colour then try the key for each group.

- 1) Can the beads be scratched with a pin?  
**Yes.** Amber or plastic. Go to 4.  
**No.** They are also heavy and cold to the touch. Glass or semi-precious stones.  
Go to 2.
- 2) Are the beads identical in colour and shape? (They can be different sizes).  
**Yes.** Glass.  
**No.** Go to 3.
- 3) Are the beads striped?  
**Yes.** Agate.  
**No.** Probably chalcedony. An orange/red form of chalcedony is called Carnelian.
- 4) Can you see separate chips of amber?  
**Yes.** Polybern- amber chips embedded in polyester resin. Usually the resin is transparent and amber-coloured, but opaque white or black resin has also been used. Where the maker has been lean with the use of amber chips, the chips are only found on one side.  
**No.** Go to 5.
- 5) Do the beads float in a saturated salt-water solution?  
**Yes.** Amber or polystyrene. Go to 6.  
**No.** Plastic. Go to 11.
- 6) Are the beads transparent/translucent or opaque?  
**Transparent/translucent.** Go to 7.  
**Opaque.** Go to 8.
- 7) Do some of the beads have bulbous centres to the string holes?  
**Yes.** Polystyrene.  
**No.** Amber. The beads may contain inclusions such as small insects, bark fragments and oak hairs (only visible with a hand lens). Oak hairs are a good indicator of Baltic amber. If the beads contain spangles (circular cracks) then they have been heat-treated. Old beads may be crazed (fine surface cracks).

- 8) Is every bead identical in shape? (They can be different sizes).  
**Yes.** Amber or polystyrene. Go to 9.  
**No.** Amber.
- 9) Do the beads contain dark swirls?  
**Yes.** Polystyrene.  
**No.** Amber or polystyrene. Go to 10.
- 10) Are the beads different shades of colour?  
**Yes.** Amber.  
**No.** Polystyrene or amber. It is rare to get every bead of opaque amber the same shape and colour. Old amber can be crazed (fine surface cracks), though polystyrene can be coated with acetate which cracks and can peel off in places.
- 11) Are the beads transparent/translucent or opaque?  
**Transparent/translucent.** Go to 12.  
**Opaque.** Go to 14.
- 12) Do some of the beads have bulbous centres to the string holes and/or mould lines along the beads?  
**Yes.** Acrylic.  
**No.** Go to 13.
- 13) Do the beads contain spangles (circular cracks) or deep surface cracks?  
**Yes.** Polyester.  
**No.** Probably Bakelite, though could be acrylic, celluloid or an unidentified plastic. Bakelite beads, mostly made in the 1920s and 1930s can be either smooth or faceted, and are usually oval, spherical or barrel-shaped. Red is the most common and popular colour, but other colours also exist. Other similar beads of other plastics also exist.
- 14) With a hand lens, can you see machine lines around the beads and fine crazing?  
**Yes.** Galalith. This is a rare early plastic made from casein (milk protein) and formaldehyde). The necklaces we have seen are a dirty greenish/yellow colour.  
**No.** Go to 15.
- 15) Does it contain swirls?  
**No.** Probably Bakelite, or celluloid.  
**Yes.** Go to 16.
- 16) Can you see mould lines around the beads?  
**Yes.** Acrylic.  
**No.** Bakelite, acrylic, polyester or an unidentified plastic.