



How To Test Amber

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Forward

Amber fraud is a huge problem. And proper testing of high-value amber is absolutely necessary.

This booklet is an attempt to provide the public with detailed information about the testing of amber in an attempt to reduce the number of people being defrauded.

Rather than the peripheral comments made by people espousing on how to test amber, this booklet gives in-depth discussions of specific amber testing procedures.

In the 20 years that i have been in the amber business, it is safe to say that I have not once had a response from a customer who self-tested amber properly.

In every case they failed to properly follow test procedures, or used incorrect testing procedures and in many cases sent us the results from third-party testers that were totally inaccurate, if not outright fraudulent.

As with anything, a little knowledge is a dangerous thing. And that statement is most appropriately applied to self-testing of amber.

And, as was many things, cheap can be expensive. And that applies in particular to people who do not want to pay for proper testing of an amber product and prefer to use inexpensive services, do it themselves, or rely on expert associates or friends. The results from these cheap services are more than questionable.

If you value your amber, have it tested before you buy it, and if you've already bought it, have it tested by a reliable testing service that uses IRS technology. That will be covered in the book.

Contents

Forward..... 2

Introduction..... 4

Amber Fraud..... 5

“How Can You Tell The Difference Between Baltic Amber And Its Forgeries?” 6

Testing Amber Is A Destructive Process..... 7

Preparation 8

Testing and Control..... 9

How To Test Amber 10

 IRS Testing..... 10

 Visual Examination..... 10

 Visual Examination Of A Picture On The Internet11

 The Smell Test11

 The Rub Test11

 The Hot Pin Test 12

 The Heat Test 12

 The Curl Test..... 13

 The Float Test..... 13

 The Whack Test..... 14

Third Party Testing..... 16

Closing Remarks..... 17

Legal Matters 17

 Copyright 2014. All Rights Reserved. 18

Contact For Comments And Questions..... 19

Introduction

The testing of amber is not to be taken lightly for it is a destructive process. Your product will be marred if you test it properly.

Additionally, proper testing requires knowledge, preparation, testing controls and, in reality, some training.

Testing is more than putting some amber in salt water of unknown salinity to see if it floats and rubbing it to see if it smells.

It is a scientific process. One must properly prepare, assemble the proper controls, and properly conduct the test following written, accurate, test procedures.

I will take you through the proper testing of amber at home.

But I will emphasize now, and throughout this booklet, that self and home testing or testing using any other procedure other than the IRS procedure will not provide you credible results. They are anecdotal. They are at best unverifiable opinion. Only you will believe the results.

Amber Fraud

Amber fraud is a big problem. A big problem.

The demand for amber products and raw amber itself seems to be ever increasing. The price of amber has been escalating rapidly.

And it provides an opportunity for the people who want to make a dollar the fast and easy way.

They offer products made from copal or plastic, and they sell these products with certificates of authenticity.

Why not? If you're going to sell fraudulent amber, why not sell it with a fraudulent certificate of authenticity. If they are going to engage in fraud, they might as well do it the right way.

I have even been contacted by a company from China offering baby teething necklaces made from synthetic. They openly said it was not amber. Their position was that amber would not last forever so we might as well sell the synthetic. It was cheaper and the necklaces look just as good as, if not better than, real amber necklaces.

And they would issue a certificate of authenticity that it was an authentic baby teething necklace. No statement about amber. Just a certification that it was a baby teething necklace.

“How Can You Tell The Difference Between Baltic Amber And Its Forgeries?”

Excerpt Of Interview With Ewa Wagner- Wysiecka PhD from the Technical University of Gdansk (Amber Market News 2008) [See full information at this link](#)

Question – "How can you tell the difference between Baltic amber and its forgeries?"

EW: "There are many methods which enable a seasoned expert to tell Baltic amber from its imitations. Sometimes a keen and experienced eye is enough, but sometimes this can unfortunately be difficult because of the specific working techniques used. Baltic amber, however, has a characteristic scent which is the key to its initial and most simple identification method, for instance by applying the tip of a hot needle and checking the scent that the substance emanates. It is easy to tell between the scent of succinite and the smell of synthetic resins. In order to identify succinite, you can also take advantage of its uncommonly low solubility in organic solvents (this is a comparatively easy way to tell succinite from copal). However, the most reliable results can be obtained using laboratory methods. The simplest and most often used method is Infrared Spectroscopy (IRS). On the basis of the results of such measurements it is possible not only to identify Baltic amber, but also other natural and synthetic resins."

Question – "Are these methods invasive?"

EW: "In the case of the hot needle test or the test using solvents, it is quite easy to imagine the degree to which the sample would be damaged. In the case of modern IR spectrometers, the sample necessary for a single analysis is generally relatively small. However, the number of analysis which we have to make and the method of sampling vary in each case. In every case, however, we are talking about milligrams, so the samples are small."

Testing Amber Is A Destructive Process

To properly test amber, you must damage the specimen.

You may burn a hole in the amber with a pin, you may scrape it to check if it curls or chips, you may take a sample for IRS testing, you may heat it to the point that it changes color, you may fracture it, You may expose it to organic solvents.

If you want a definitive result, you must do one, some or all of the above. **And your amber will be damaged.**

Preparation

Before you attempt to test amber, you should know what amber is.

You should know its characteristics. Much of this information is contained in our [Amber Buyer's Guide](#) that you can get at this link.

And you should know how it is classified. The International Amber Association, Gdansk Poland, has published some definitive classification guidelines. You should read them and know them. Read [Classification Of Amber](#).

You should also read about and understand IRS testing. [Read Here](#).

You should read through the testing procedures in this booklet a few times so that you understand them fully and so that you understand that you should not take any shortcuts.

You must be ready to damage your piece.

For example, if you are going to use a hot pin test, you must have a large enough pin that will hold enough heat to sufficiently melt your amber to give off enough smoke for you to detect the scent. And you must be ready to insert the pin far enough to generate smoke in sufficient quantity to be able to detect the scent.

If you are going to apply solvents, apply solvents! There will be damage.

And so it is for the remainder of your tests. You cannot approach this being afraid. Properly testing amber is a destructive process.

Be prepared for that.

Testing and Control

In any test situation, you need a control. The control gives you test results of a known product. You then compare the test results of your unknown product against the control.

To properly run amber tests, you should have on hand a piece of amber that you know is Baltic Amber. And you should test it in parallel with testing your unknown product.

The product that you will be testing, Baltic Amber, is a fossilized resin. It is a fossil. It is a resin.

Plastic, a resin, should also be used as a control for some of the tests.

You should also have some copal.

But since most people do not have a control, this tutorial will attempt to give you enough information that should get you close.

But even so, if you do not follow these instructions specifically, you are liable to get false results. That is a very common happenstance.

If you do not get positive results, run the test at least two more times. And be sure to read the procedure again before you run the test.

How To Test Amber

This section takes you through the process of the proper testing of a product to determine if it is Baltic Amber.

It is written to ensure that you get proper results by giving you information about how to run a proper test.

IRS Testing

If you are dealing with high-value products, the Amber Laboratory at the University of Gdansk which, under contract with the International Amber Association, will test amber for you. They use IRS testing. This is the ultimate test. And it is recommended that you have any product that is high-value tested by this organization. [Read their test offer.](#)

Please note, that regardless of the experience level of the people at the IAA and the equipment used, they openly state that amber fraud technology is advancing so quickly that even they cannot always determine the exact nature of the sample. And if you send something to them to be tested, if they cannot determine exactly what the product is, they will return it telling you that they cannot give you a valid result.

If you decide to use a local expert to test your amber, if that expert does not use IRS to do the test, you may be doing little more than wasting your money.

Note that there is a definite side benefit to IRS testing. Compared to other tests, the amount of damage to your amber is minimal.

A small sample is needed, but the damage done in taking that small sample doesn't compare to what you will do to your product following these self test procedures properly.

Visual Examination

Many people evaluate amber by looking at it. It is not possible to accurately determine the nature of amber by looking at it with a light or looking at a picture, or looking at it in your hand.

Experienced ambermen who manufacture amber beads every day will tell you that they

cannot distinguish with 100% accuracy a bead carved from one nugget of amber from a bead press formed from one nugget of amber. Even if the beads were made in their own shop!

The International Amber Association will tell you the same thing.

I reference here a video that shows a man buying bead bracelets with beads that were made by combining three amber nuggets. He is examining them with a light and taking those bead bracelets that are so well done that they cannot be distinguished from beads carved from a single nugget. [Watch It Here](#)

Our conclusion is that a visual examination does not provide determinative results. And you should not rely on it.

Visual Examination Of A Picture On The Internet

This is an exercise in futility. In today's world of Photoshop you cannot rely on what you see. Additionally, even if the picture is a fair rendition of the product, a product will display differently on each computer or other display device depending on light, graphics cards, data transmission and other variables.

Read this information [about amber pictures](#).

The Smell Test

Amber in its natural state is scentless. It does not "smell".

If you want to smell something, amber has to be heated.

The Rub Test

If you rub amber in your hand to the point that it is hot, you will get a pleasant smell. **BUT!** The scent is faint and many people do not smell it. You really have to know what you are looking for to be able to detect it.

By all means, try it. But be sure to have a control and rub that also so you have

something to compare. If you do not have a control, and you do not smell anything, your test is not determinative.

As a note, it is interesting to watch amber buyers go through the rub charade. They give a few rubs and a sniff like they know what they are looking for. It takes definite rubbing to warm the amber. Not a couple rubs. A couple rubs are enough to show people you know something should happen, but not enough to test anything.

The Hot Pin Test

Insert a hot pin into your amber. You will get a fleeting scent of amber.

The pin has to be large enough to cause enough smoke to be generated. Likewise you have to insert the pin deep enough to get the smoke you need.

Be sure to do this test along with your control so that you are sure that what you smell is amber scent and not something else.

The Heat Test

If you take a small piece of amber, hold it in tweezers, and heat it slowly over your gas stove or another flame, you will get a faint somewhat pleasant smell. But the smell can be so faint that unless one knows what one is looking for, one is liable to miss it.

But that will be transitory and you will start to get an acrid smell as the amber gets hotter.

I must emphasize here that you must have a control on hand and you must heat it and compare the smell between your control and the product you are testing.

There is some commentary that slowly heated amber smells somewhat like the incense one smells in church. I must place emphasis on the word slowly.

If you take the same piece of amber that you heated slowly and continue to heat it, it will give off an acrid smoke. It smells horrible.

The reason is simple. Amber contains acid – succinic acid. As you get the amber hot you are burning it and it is giving off acid smoke. And it is not pleasant.

Now while you are heating your amber, put some in a metal plate over fire. As it gets hot, it will turn cherry color. (Cherry colored amber is not natural. Amber makers make cherry colored amber by heating common amber.)

As you continue to heat it it will bubble and turn to an ash. The smell will not be pleasant. It's actually overpowering as the acid smoke permeates the room.

As a control put plastic in the plate. Heat it. It will not turn cherry color. Depending on the plastic, its reaction to heat will vary and it is also likely to smell horrible.

Once again, I emphasize that you must have on hand a known piece of amber to have determinative results.

If you do not have the control, then the transition in color to cherry and the slight pleasant smell in the beginning gives you some indication. Without a control you really can't say anything about the acid smell. Both amber and plastic smell horrible.

The Curl Test

It is said that if you scrape amber with a needle it will not come off in curls but will come off in small chips.

This test is often run on baby teething necklaces. But people are very tentative in scraping the amber because they don't want to ruin the teething necklace.

Unfortunately, proper testing of amber is a destructive process. If you do not dig in with the needle it will not come off in small chips.

So if you are afraid of having a scratch in your amber, don't run this test.

The Float Test

Amber floats and salt water. **BUT!** Not just any salt water. You have to have the proper salt density and temperature.

Professionals who gather amber in the Baltic Coast do it in the winter when water temperature is 4 degrees Centigrade or lower. They do not gather in the summer. Very little amber floats then.

The proper salt density is important.

Use 1 part salt to one part room temperature tap water. Some people recommend 7 teaspoons of salt to a small glass of water.

Plastic won't float in any of this. Amber will.

Remember that your necklace or other product may have silver, a plastic clasp, string, or other added items. Depending on the percentage weight of these as compared to the total weight, you may get some false results with the float test.

To properly run the float test, you must be trying to float only amber and not amber with clasps, etc.. That means you should take a piece of amber off your jewelry.

If your sample floats, what does it tell you?

It tells you it is amber or something else that floats. It does not tell you that it is Baltic amber.

A great waste of time this one is.

The Whack Test

Rather than a curl test, take a piece of the amber and a piece of plastic and put them on something hard. And whack each with a hammer. Give them a good solid whack!

The amber will shatter. The hammer will bounce off the plastic.

Why would anyone ever do this?

If you bought a baby teething necklace and you are convinced that it is fake or false amber, then of course it is worthless to you. Take the time to take off at least one bead and give it a whack. Or just hit the necklace and see what happens. No problem, you were convinced anyway and it was worthless. But after you hit it, you may find it was not worthless.

Your best alternative, is to contact your supplier and discuss the problem with the supplier.

We emphasize strongly, than for high value items that you want to verify as being made from Baltic Amber, you should get a test run through the International Amber Association.

If you are going to buy a high-value item, then asked the supplier to have the test run for you and only take delivery with a certified test.

For low value items, you will be highly dependent on the honesty of your supplier.

Testing Help

Now we know that you are likely to want to run these tests for yourself. By all means, go for it. If you have any problems in running a test or get test results that indicate your amber may not be Baltic Amber, you are invited to contact us. Support@natural-baltic-amber.com

All of the tests run at home, are helpful, but not determinative.

Third Party Testing

The information in this section is opinion only. It is based on my many years in the amber business.

It is my intent to pass on my experience rather than giving you hard rules to follow. You can then use your own judgment.

The first step in my testing process is to buy only from suppliers I know personally. Each operates under a certificate from one of the professional amber organizations. I give full faith and credibility to their certification to our company.

I deal only with people whose factories we visited or that we met at amber shows and discussed product lines. We generally purchase samples and have them looked at by the people from the amber laboratory.

And then as far as third-party testing, the only third-party testing or evaluation that I accept is one done by the International Amber Association, Gdansk Poland

We focus on the international amber Association, Gdansk Poland because we are also located in Poland. Other organizations are IRS capable. We have no experience with them so we make no recommendations. We are comfortable with the IAA.

We do not accept any test result for any organization, even a government-sponsored organization unless it is accompanied by IRS test spectral curves and evaluation..

By way of example, we, and others we know, have had customers test hand cut natural Baltic amber bead bracelets and have the results come back with labels such as "false amber".

The products were first rate, hand cut, Natural Baltic amber. Upon return to us, we noted no damage or any evidence of the sample being taken or organic solvents having been applied to the products. It indicated that the testing was, at best, visual only

There is local opinion in Poland that some testing facilities deliberately give negative results. Opinions vary as to why. Because they are speculative, I will not state them.

There are some reputable experts who are right most of the time. For example, our people can generally classify amber by visual examination. But they are quick to shake their heads and express doubts or say that they cannot be sure.

It might be appropriate for you to once again watch this video of a man making a visual examination of amber at a display and an amber show. He was picking out those pieces that could not be identified as having been made from three stones. He took only pieces that looked like they were made from one stone even though he knew full well that they were made from three stones. [Watch It Here](#)

One can be fairly well assured that a local expert would not be able to detect that these bead rings were made from multiple stones.

I emphasize that there are many reliable, honest, technically competent, people on whom you can rely can provide you good information about your amber. It is up to you to choose the right expert.

But please note, the only testing that we accept as determinative is a test based on IRS examination. And we do that because it is the only way to get determinative results. And because the test results can be verified by looking at the spectral curve's.

Closing Remarks

If you have high value amber in hand, send it directly to the International Amber Association to have it tested. [Use this link.](#)

If you want amber tested prior to buying it, purchase through a supplier who will have it tested by the International Amber Association before they ship the product to you. [Information is here.](#)

For low value items such as teething necklaces, buy from a reliable supplier.

Legal Matters

If you test using these procedures your amber will be damaged.

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Contact For Comments And Questions

You are invited to send your comments and questions to support@natural-baltic-amber.com