Castilene Compendium

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Version 0.02

Prologue: What is Castilene? - A basic overview.

Welcome to my Castilene Compendium.

Castilene is a wax-based sculpting material developed as sort of a bridge between two of the most commonly-used sculpture mediums: traditional sculpture wax and plastilcene. Castilene is easily shaped and formed, like plasticine, but it's also lightweight enough that it can support itself without the use of an armature or external supports, like wax. It's become a favorite among sculptors and toymakers for its unique properties. Due to its high learning curve, most sculptors learn to sculpt in other materials before they move on to Castilene, but that doesn't mean it can't be used as a starting material. It comes in two colors and three levels of hardness, to make it even more versatile.

The components used to create Castilene are a trade secret, so its exact formula is unknown, but it's basically a wax base with some additional organic materials added to make it more workable. Being wax-based, the sculptures created in Castilene are not permanent and are generally intended to be molded and cast in other materials for painting and display.

The purpose of this guide is to provide information on working with Castilene, which includes selecting tools, shaping and forming the sculpture, finishing the surface, and casting tips and precautions. The plan is to create a resource for sculptors with all different levels of experience using Castilene, from newbie users to experienced pros.

This guide is only intended to provide information on how to work with the material. It is not intended to provide detailed instructions on the sculpture process itself and it will not give you detailed instructions on the casting process. This is not its purpose and there are plenty of other resources available that cover these parts of the process extremely well, already.

Before we start, I must offer a few words of warning. Although the Castilene itself is a fairly safe material, you will need to use sharp tools and heat to work with it. If you are not careful, you can cut or burn yourself pretty badly. Also, some of the chemicals and solvents used for surfacing, cleaning, and casting the material can be harmful or fatal if misused. Castilene is not food and should not be eaten.

Section 1: Tools and Equipment

The first thing you will need in order to start creating a sculpture in Castilene is the proper tools and equipment. Castilene, like most waxes, is easiest to shape when you heat it, so you will need heat sources to soften the material for creating the basic shapes and tools that can be heated in order to do the actual manipulation. 1-1: Sculpting Tools

The majority of the tools that you will want to use will be metal. Metal can be heated and holds heat for a decent amount of time, making it easier to use them on the material. Most jewelry and sculpture supply places carry metal wax tools, mostly based on modified dental and medical tools, which are made for carving and shaping wax. These should make up the base of your collection of tools. The best advice is to look for tools that you can use comfortably. You don't necessarily need to get every type of tool listed here, but most sculptors prefer to have a wide range of tools to work with.

1-1-1: Wax Carvers

Most jewelry and sculpture supply places carry a selection of tools often referred to as "wax carvers". The tips on the tools consist of various tips and points. If you are just starting out with Castilene and you don't have any metal tools, look for a place that carries these tools in a set. The tips should range from scoop-shaped and hook-shaped points to wide spatula shapes. Look for tools that you are able to use comfortably and make sure you have a decent selection of sizes and shapes to work with.

1-1-2: Probes

Probes are tools that consist of a handle and a long pointed needle on the end. They are also sometimes referred to as "needle tools" due to their shape. A good set of probes will have a straight needle along with several other needles that are bent and shaped in various ways. These can be used for detailing as well as adding, moving, or removing material in areas that would be hard to reach with other tools. They are especially useful for fine detailing and miniature work.

1-1-3: Loop and Ribbon Tools

Loop and Ribbon tools consist of a handle with a rigid metal loop on the end. Loop tools consist of a loop of relatively thin wire whereas ribbon tools consist of a wider ribbon. These tools are useful for carving out grooves and notches from the sculpture. When selecting these tools, make sure you have a range of sizes and shapes. Most of these tools will have loops on both ends of the handle, in two different sizes.

1-1-4: Knives

A good hobby knife can be very useful when you need to cut or carve parts of your sculpture quickly. If you are working in a wide range of scales and sizes with your sculptures, a variety of knives and even some hobby saws and jeweler saws can come in very handy. If nothing else, you will probably want to have at least one good hobby knife and some sharp blades handy at all times.

1-1-5: Burnishing Tools

Burnishing tools can be very useful for smoothing out surfaces and some of them can even be used to create effects while sculpting. Most hobby shops carry these for use with model kits and stamp-making. A good selection will consist of a couple of sizes of ball tips and a large curved tip or two.

1-1-6: Sandpaper and Sanding Pads

Castilene is easily sanded when it's cool. It's best to look for sandpaper and flexible pads designed to be used in "wet-sanding". Nylon stockings work extremely well for polishing the surface afterwards. This will be covered in detail in the section on smoothing and finishing Castilene sculptures.

1-1-7: Other Tools

There are a variety of other tools that can be used for working, detailing, and texturing Castilene. Wood and plastic tools can be used for some surface detailing but are not very effective as general purpose tools. Many sculptors use found objects, from woodworking tools to dried-out ballpoint pens, for certain effects and textures. A few recommended tools to keep handy are a mirror, a small wire brush, and possibly a wooden rolling pin.

1-2: Heating Equipment

There are a variety of ways to heat the Castilene and tools. You will often need a minimum of two heat sources: one for softening the Castilene and one for heating your tools. The material itself can be heated using a heat lamp or light bulb, a heat gun, a microwave oven, a double-boiler or crock-pot, or even using sunlight. The tools can be heated over an open flame, such as a candle or alcohol lamp, or using a heat gun or similar tool. This will be covered in detail in the next section.

Section 2: Working with Castilene

The medium and hard grades of Castilene are most easily manipulated when they are heated. Castilene will become somewhat pliable from the warmth of your hands, if you hold it long enough, but this is not a very effective method of heating the material. You will probably need a couple of decent heat sources.

2-1: Heating the Wax

The more you heat Castilene, the softer it gets but you want to be careful not to overheat it. If the Castilene starts to get too hot it will begin to boil, which will create air bubbles in the mixture and make it harder to work with. The material can even burn and possibly cause a fire if it gets hot enough, so you want to be careful not to use too much heat. Also, if you heat Castilene for too long the wax base will start to separate from the rest of the material. This section will look at the pros and cons of the different heating methods available for softening the material.

2-1-1: Using a Microwave

When microwaving Castilene, you should use short intervals and check the wax constantly to avoid overheating it. Place the wax in a microwave-safe glass or ceramic container and heat it in 15-second intervals, checking the wax after each interval. You will want to knead or mix the wax as much as possible between each interval to ensure even heating. When you microwave Castilene, it heats from the center out. If you heat the Castilene for a long time without kneading or mixing it, you could find that the outside is still hard but the center is a molten core capable of burning your hands pretty badly. You will want to stop heating the Castilene when it has a peanut butter-like consistency. Using a microwave is quick and fairly safe but it's not a good source of constant heat.

2-1-2: Using a Heat Gun

A heat gun is a very versatile tool for the Castilene sculptor. You can direct the heat to a specific spot and soften areas of the actual sculpture in progress during rough stages. You will want to make sure to use a heat gun that has a variable temperature control so that you can avoid overheating the Castilene and burning or scorching it. The advantage to heat guns is that they are very versatile, portable, and safer than using an open flame. The disadvantage is that it can be very slow using heat guns on large amounts of Castilene for armatures or large sculptures since it only heats the surface of the material.

2-1-3: Using a Double Boiler, Crock Pot, or Wax Pot

Double boilers and crock pots are useful for heating the Castilene and keeping it at a sustained temperature for prolonged periods. You can even heat the Castilene to a point where it can be poured into a mold. You can make a double boiler using two pots, one slightly smaller than the other. Boil some water in the larger pot and place the smaller pot, with the Castilene in it, inside the larger pot. Use a wax thermometer to montor the temperature to avoid overheating the material. Keep the temperature of the

Castilene at or below 160 degrees farenheit or tiny bubbles will form, which can cause problems if you are pouring the material into a mold. A double boiler or crock pot can keep the Castilene soft for prolonged periods at a stable temperature but if you leave the material on for too long, the different components in the Castilene may start to separate.

2-1-4: Heat Lamps and Light Bulbs

Castilene can be softened by placing it under a light bulb. A 40-watt incandescent bulb in a desk lamp is sufficient to heat the Castilene to the state of a thick liquid. Simply place the Castilene under the lamp and, once it's softened, you can remove what you need. You can adjust the amount of heat the Castilene gets by moving the bulb closer or further from the material.

The advantage is that this is a very portable and affordable solution to keeping the Castilene soft. The disadvantages are that it takes a little while for the material to heat up enough to be useable and if you leave the bulb too close to the material for too long, the wax may start to separate. Also, the material closest to the bulb softens much faster, so when you take this material away and use it, it may take several minutes for more of the material to become soft enough to be useable.

2-1-5: Sunlight

Castilene will soften if you leave it in a window where the sun is shining on it. This is not a very effective method mainly because the sun is a very unpredictable heat source. On a hot day, the Castilene could become so soft it makes a mess. On a cold day you may not be able to soften the material at all.

2-2: Heating Your Tools

Having tools you can heat and keep heated is very important when using Castilene. Heated tools move more smoothly and leave cleaner results. That being said, there are a number of ways to heat your tools while you are working. You have to be careful not to overheat metal tools, though. Not only do you risk burning your hands but you can damage the sculpture as well. Overheated tools can cause the material they come in contact to melt severely in mild cases or they can actually burn or scorch the material in severe cases. One method that helps to see when the tool is getting hot enough is to place a tiny piece of Castilene on the end of the tool, opposite of the side that the heat source is on. When the Castilene starts to melt into a puddle, the tool should be hot enough to use.

2-2-1: Candles

This is the most readily available item for heating your tools. With any open flame, you can adjust the rate that your tools heat up by adjusting the distance you hold the tool from the flame. The advantage to candles is that they can be found cheap. The disadvantages are that they often burn out quickly and as they burn, the flame sinks lower, making it extremely easy to overheat your tools. Also, an open flame is not the safest thing to have around, especially when working with a flammable material like wax.

2-2-2: Alcohol Lamp

This is a very common open-flame tool used to heat metal wax tools. Alcohol lamps are inexpensive and you can fuel them with denatured alcohol or methyl alcohol. They are often somewhat adjustable and the flame stays in the same place, unlike candles. Unfortunately, they still have most of the safety risks of using candles and other open flames, especially around something flammable, like wax.

2-2-3: Torches and Lighters

Some sculptors prefer to use a butane or alcohol fueled mini torch to heat the tools or, alternatively, a regular cigarette lighter. The flame on these is generally more controllable but some of them can burn so hot that they overheat the tools very quickly, plus you have to keep re-lighting them each time you want to heat the tools. Outside of that, you have the risks already mentioned when using an open flame.

2-2-4: Heat Guns

A heat gun can be very handy for heating tools. A good heat gun will have a temperature adjustment and it does project a flame, only hot air. The advantages are that you have a safer heating method and you get a lot of control over the amount of heat you give your tools. Heat guns are generally more expensive than some of the other options and it can be difficult to keep them in a position where you can hold the tools and heat gun. Though they are safer than open flames, heat guns do put out a lot of heat and can cause burns or, if set too high, possibly start a fire.

A variation on this theme is hold the tools over a household toaster (yes, the kind with a couple of slots on top that you stick slices of bread in). Heat guns and toasters are similar in that they use heated wires. The only difference is that heat guns have a fan that projects the heat, which is not really necessary for heating tools. Just be careful not to stick metal tools INTO the toaster. You only want to hold the tools over the slots to heat them.

2-2-5: Lamps and Bulbs

Tools can be heated by leaving them under a bulb or heat lamp but this is not a very effective method. It takes a long time for the tools to heat up and then they cool off very quickly.

2-3: Hardness and Color of Castilene

Castilene comes in two different colors, pink and green, each in three grades of hardness, hard, medium, and soft. There's not any working difference between the pink and green Castilene. The colors are more for preference. Some sculptors prefer a color more representative of a skin tone for human figures while some prefer a more neutral color to make details more visible. Also, the colors can be used in production work to differentiate different stages or areas of a sculpture.

Some sculptors use one color to indicate hard grade and another for medium or soft grade so that they know which areas are softer and, thus, are more delicate. Also, some sculptors will create a rough version of the sculpture using one of the softer grades and recast this piece in the hard grade for refining, detailing, and cleanup. The two colors can even be mixed to make a dull greyish-tan color, if you want something more neutral. The hard grade tends to be what most sculptors prefer. This grade is least prone to damage by normal handling and can support itself in any shape, eliminating the need for an armature. All levels of detailing can be done in the hard grade, with a little patience, and it can be sanded and polished.

The medium grade is slightly softer than hard grade and is used by some sculptors to create the outer layers of a sculpture. It does not require as much heating to manipulate as the hard grade, which can make it easier to use in some situations. It's not rigid enough to support itself in complex shapes, like a humanoid figure, for example, but block and cone shaped sculptures will still hold their shape. Some sculptors will build the armature out of hard grade and then use medium to sculpt the outer layers.

Medium grade does not transfer fingerprints easily, but it can be distorted if you aren't careful. Also, you cannot sand or polish it.

The soft grade is very soft and does not need heat to manipulate. It's good for quickly creating details as well as test sculptures. It can be used over hard and medium Castilene for creating some detailing, but it distorts easily and fingerprints transfer much more easily. If you try to sand or polish this grade, you will probably regret it.

When using the medium and soft grades, it's best to have some experience in casting, since they won't travel well. Also, if someone else does the casting for you and damages or bruises the medium or soft grade areas, they may not be able to re-sculpt or repair the damage appropriately.

Some companies use all three grades and both colors in production stages. The first sculpture stage is done in one color, using hard for the armature, medium to build up the figure, and then soft for the rough detailing. Once this rough sculpture is approved, a set of molds are made and the entire piece is recast in hard grade, using a different color. The recast is then detailed, re-sculpted, and cleaned-up, and polished as necessary to create the final sculpture that is used for production. The advantage to this is that the rough model can be built much more quickly, saving time in the overall production cycle. This process will be discussed in more detail in a later section.

2-4: Increasing the Hardness

In some cases, you may want to increase the hardness of the Castilene beyond the hard grade. Harder wax is easier to use for carving and cutting. There is a special hardening wax that you can purchase to mix with Castilene to make it more rigid. If you use the hardening wax, you will want to add it in small increments until you get the hardness you want. If you add too much hardening wax, the material will be brittle and won't stick to itself if parts break off. If you add other waxes to the Castilene, they will generally mix well but they tend to separate out very easily when you heat the material.

2-5: Forming and Shaping

When creating any sort of a complex sculpture, you will want to start with the hard grade Castilene in order to create a base or armature to work off of. You will need to heat the Castilene to a point where it is soft and malleable. As you work with it, the material will cool down and become rigid. Once you have the shape, you can use heated tools to push and manipulate the material around and get the shapes you want. The hotter the Castilene is, the softer it gets. Hot Castilene also sticks to itself a lot better than cold Castilene. If you need to add material or pieces to the sculpture, it's best to heat the Castilene you are adding to a near-liquid state and press it on firmly. If an already-sculpted piece needs to be added or has broken off and has to be reattached, use a small amount of hot Castilene as glue to hold the parts together or use a hot tool to heat the wax on the two ends that need to be put together and quickly press the parts together before the wax cools off again.

Castilene cools very quickly, so you will want to be able to keep heating it in the areas you are shaping in order to keep it workable.

2-6: Carving

Hard grade Castilene carves very well. If you prefer to use subtractive methods over additive sculpting, you will probably want to work exclusively in the hard grade. It's best to heat the Castilene and work it

into the basic shape before you start carving. Let the material cool to room temperature before carving on it to ensure clean cuts and avoid handling it more than you have to. If the material starts getting too soft to work with, let it rest for a while and it will become rigid again.

2-7: Freezing

Castilene can be frozen to make it even more rigid and workable. It takes about an hour for the sculpture to reach its maximum chill point. Unlike most other waxes, Castilene does not shrink significantly when frozen or expand significantly when heated. If you have very sharp details you are trying to cut or etch into the sculpture, it helps to freeze the piece first. Freezing also helps to make it easier to sand, polish, and burnish the surface of the sculpture.

Frozen Castilene does not get ice cold, and it does not feel fully frozen so you may want to practice with it to get used to the way it feels before doing any serious sanding or burnishing. Once the piece is frozen, it will often start to "sweat" as it thaws. This is outside condensation that will not harm the sculpture.

Section 3: Finishing and Smoothing

Once you've completed a sculpture, you will want to make sure that it looks clean and polished. This section looks at the various methods that can be used to get a clean, smooth, finished surface to your sculpture.

3-1: Wire Brushing A wire brush, such as those used for cleaning and polishing aluminum, can be very useful for getting surfaces evened out before sanding. The easiest ones to use are the disk and cup shaped brushes made for Dremel tools. If you heat the brush, it will create a coarse texture while blending any lumps together and evening out the surface. When the brush is cool, it can be used to create a much finer texture, which can then be sanded or burnished smooth. The texture created by these brushes also works well when you need an effect similar to hair.

3-2: Sanding and Polishing Castilene can be sanded with sandpaper for a smooth finish. For the best finish, use sandpaper that is designed for wet-sanding. Start with a medium-to coarse grade of sandpaper and work in stages up to a very fine grade. Use cold water to wet the sandpaper before sanding.

For areas that require special shaping and sanding, use sanding pads designed to work with wet sanding. Sanding pads are more durable and flexible than sandpaper, but you will find that they don't work in every situation, so it's best to keep both handy.

For areas that are delicate or have a lot of detail, it sometimes helps to freeze the sculpture first. It will take more work to sand a frozen sculpture smooth, but it can sometimes help to get a more refined finish. For extensive sanding, try freezing the sculpture and then get a bucket of ice water to work with. Dip the sandpaper and sculpture in the ice water periodically to keep the piece cool. You can even sand the sculpture underwater for short periods of time. Just be careful not to get frostbite or cold-related injuries.

Once you have finished sanding, use a pair of nylon stockings to polish the piece. The fine texture of the nylons will give your sculpture a clean, satin shine.

3-3: Burnishing

If you want a smooth surface but you don't want to lose contour, you can burnish areas of the sculpture. It helps to freeze the sculpture first, but some light burnishing can be done without freezing the piece. You

will want to have a decent selection of burnishing tools to get into different areas. Burnishing can also be done after sanding a sculpture prior using the nylons to polish the piece or even in place of the nylons, depending on the effect you are trying to achieve.

3-4: Heat polishing

Heat polishing requires a heat gun, butane torch, or alcohol torch. To heat polish an area, aim the heat source at the area you want to smooth and bob it up and down. This will temporarily melt the material on the surface and as the Castilene cools it will smooth out. You will need to be careful when using torches not to hold them too close to the sculpture or you may burn or scorch the surface and damage the Castilene. Heat guns are good for wide areas and aren't as prone to burning and scorching the sculpture, but they tend to have less of a focus than a butane or alcohol torch.

Butane torches have a more stable flame than alcohol torches, but it's harder to adjust the flame while working. To adjust the flame on a butane torch, you actually have to move an adjustment lever, the way you do on a cigarette lighter. On alcohol torches, the flame is adjusted by simply squeezing or releasing the bottle that holds the alcohol.

Heat polishing is not good for areas with a lot of detail. The heat will cause the fine details to lose definition and often destroy your work entirely. Also, it takes a lot of practice to get used to controlling the heat so that it smoothes the area uniformly.

3-5: Texturing

Proper use of texture can save a lot of time sanding and polishing an area and it can make a sculpture look more detailed and intricate. Textures can be added by scratching or carving the surface, pressing stamps or objects into the surface, or tapping and stippling the surface with a tool or set of tools. Be careful with textures, though. If you go overboard with the wrong textures, it can make a sculpture look cheap or gaudy.

3-6: Solvent Cleaning

There are a number of solvents and chemicals that can be used to smooth out areas on your sculpture in situations where sanding is not desirable or not possible. Solvent cleaning can be a quick way to smooth the surface but it can also make a mess and possibly ruin the material if you're not careful.

The three most common solvents used on Castilene are lighter fluid, di-limonene-based citrus solvents, and wax cleaner. They all work pretty much the same but the precautions are a little different. Lighter fluid is best used only if you don't plan to melt re-use the Castilene, as it can introduce some dangerous chemicals into the material. Some wax cleaners also contain hazardous chemicals that you don't want to reuse, so you may want to check the label before using them.

Citrus solvents are more complicated, as there are a variety of different types. The best ones to use are the concentrated cleaners, but avoid the ones that have chemical additives such as petroleum distillates. Besides introducing possibly harmful chemicals into the Castilene, some of the added chemicals can cause problems when trying to make molds off of the sculpture. If you are going to use a citrus-based solvent, try to get either pure di-limonine or a citrus solvent that is 100% biodegradable.

When using solvents, brush them on with a soft nylon brush and be sparing. It's better to work in stages than to try and do too much at once. Citrus solvents use an oil base, so if you use too much of any of the

solvents or chemicals on the surface it can make the Castilene soft and mushy, leave an oily residue, or possibly even ruin the sculpture.

The citrus solvents can also be used directly with sandpaper and nylon stockings as a lubricant when sanding and polishing the surface. Put a small amount of citrus solvent on the sandpaper or nylons and gently glide it across the surface. Once the sanding is done, buff and polish the surface with nylons, adding more solvent in small amounts if necessary.

Once you are finished with the solvents or chemical, it's a good idea to clean the surface of your sculpture with a mild dish detergent and cold water, to get rid of any excess oils. Pour the detergent on the sculpture and, using a soft nylon brush that has been dampened with cold water, lather the detergent up in small, light circles. Rinse the detergent off and repeat these steps until the surface is clean, then let the sculpture air-dry. If you wish, you can then do a final polishing or burnishing.

3-7: Tooling

Some sculptors prefer to use only their tools for finishing and surfacing their sculptures. This retains more of a "hand-sculpted" look. One method to smooth out an area and make the piece uniform is to use a loop tool to scrape the area smooth. Using a round loop or ribbon, scrape the surface of the sculpture using short, quick strokes. Repeat this until the surface is fairly smooth. This can be followed up with heated spatula tools to smooth the area out further and burnishing tools for polishing and final smoothing. The resulting finish looks less machined and more organic.

Section 4: Casting

This section is not meant as a tutorial for mold making and casting but rather a supplemental guide when making molds and casts from Castilene. There are a lot of detailed guides online that cover mold making and casting in detail. The information in this section assumes that you are already familiar with the casting process.

4-1: Molds

Castilene works with most mold materials without a problem. If you are creating makeup effects, you can pull plaster molds off of Castilene sculptures very easily. In fact, Castilene can be very useful when creating plaster molds since it melts out of the mold cleanly and easily. The Castilene can then be re-used after the mold is done. For temporary waste molds, you can use alginate or latex to cast both to and from Castilene. For more permanent molds, use silicone rubber.

4-2: Resin casts

When making molds for resin casts from a Castilene sculpture, you should use the same processes that you would use to cast from wax. Generally, one-piece split molds are safest, especially if you use a translucent mold rubber so you can see where you are cutting. Two-piece and three-piece molds are possible as well but when using plasticine to bed the sculpture, you should test the plasticine material you are using with the Castilene to make sure it won't react. Do not use any strong chemicals such as turpentine or mineral spirits when removing plasticene from the sculpted pattern as they will damage the sculpture itself. Isopropyl alcohol is relatively safe for cleaning off the Castilene, as long as you use it in small amounts. Water-based molding compounds can be used in place of plasticine as a safer method for creating the bedding but you will need to test them to make sure that the mold rubber will not react with

them.

4-3: Castilene casts

One of the nice things about Castilene is that it can be cast in most molds. This can be used if you want to create a rough basic sculpture in some other material and then recast it in Castilene for the detailing and finishing. Also, if you have parts or accessories that you want to duplicate without having to re-sculpt them over and over, you can create a mold and make Castilene duplicates to use in your sculpture.

Castilene has a higher viscosity than most waxes and resins when it is melted. This means that if you are making a Castilene cast of a complex or detailed sculpture, you will need to have slightly larger gates and vents in the mold. Also, you will probably want to use a pressure chamber when casting to make sure the material fills the entire mold. Castilene casts well out of alginate or silicone molds. For smaller, single-sided parts you can use alginate or silicone putty to make a one-piece mold and then heat and pour the Castilene into the mold to make a duplicate.

4-4: Lost wax casting

Castilene can be used for lost-wax casting but there are certain modifications that have to be done for the procedure to work. The Castilene website and packaging have detailed instructions, so I won't repeat them here, but basically the material has to be burned out of the mold at a higher temperature for a longer period of time. Also, the gates and vents have to be larger to accommodate for these changes in the process. Larger gates and vents mean larger spots that have to be cleaned up from the final cast piece.

The only time you would want to create a lost wax cast directly casting off of a Castilene sculpture is when you want the final bronze or steel cast to be the only one in existence. Otherwise, it's best to do investment casting using more common waxes.

Section 5: Comparing Castilene to other sculpture materials

If you have experience with other sculpture materials, you are probably going to want to know how Castilene compares. This section lists some of the common sculpture mediums and how Castilene compares to them.

5-1: Polymer Clay

One of the most popular types of sculpture material available is the polymer clay. These clays, such as Sculpey and Fimo, stay soft and pliable until they are baked in a home oven. They have gained popularity due to the fact that they do not require a kiln to fire and they hold detail better than standard ceramic clay. The pros and cons of polymer clays, when compared to Castilene, are probably the closest to being equal.

The most notable difference between the two materials is the fact that Castilene does not need an armature if you use the hard grade. This can save a lot of time in the initial model preparation and gives you more room to make adjustments to the pose or design while you are sculpting. Armatures themselves offer advantages and disadvantages. An armature can give a sculpture added stability and structure. A good armature will allow you to keep proportions accurate. On the down side, for very extreme or dynamic poses, it can take a lot of work to get an armature to work the the way you want it to. Also, when a sculpture is anchored down using a metal armature, it's very hard to judge the balance and

stability of the piece should it be cast in resin. If you are creating a very dynamic design or pose that involves using limited support, you may find that the supporting structures are not stable or sturdy enough to hold up the sculpture when you create cast pieces without the wire armature inside it.

Some companies will not accept sculptures created in polymer clays due to the detail loss associated with them. All polymer clays lose detail slightly when they are baked. The amounts vary depending on the type of polymer clay. Generally, the detail loss, though minor, can be seen in fine texture or sharp ridges. It is very minor in most polymer clays, but it does happen with all of them. Castilene does not require any curing or firing processes that would cause this sort of detail loss.

Polymer clays can be hardened, making your sculpture work permanent. This can be very useful if you have sculpted areas that you do not want to risk damaging. The hardest grade Castilene gets hard enough when cool that you can handle it without worrying about damaging the work you have done but it's still not permanent. Of course, this comes in handy if you want to detail and not worry about damaging the detail work but you want to be able to make changes as the sculpture progresses. Also, when using the hard grade Castilene, small or delicate details can be sculpted more easily. Fingers, for example, can be sculpted more delicately as the material will not be damaged if you place your hand behind the area that you are working on to support it.

One advantage to polymer clays is that they sand and polish faster and easier than Castilene. Castilene takes a lot of work in order to get a refined finish on smooth areas and you cannot use some of the tricks that work with polymer clays, such as spraying down the sculpture with a primer to spot uneven areas. If you sculpt and bake in stages using polymer clays, this can effect your ablilty to sand the pieces, since the material may chip or peel where two sculpted stages meet, but this is easily avoided. If you use the softer grades of Castilene for surface details, the sculpture becomes easier to smooth but it's also far more delicate. Medium grade Castilene can bend out of place or bruise easily and the soft grade picks up fingerprints and other marks very easily.

The solvents that can be used to refine the surfaces of Castilene and polymer clay are a different story, though. Most of the solvents that work on Castilene can be cleaned off or will evaporate very well and work even better as a lubricant when sanding or polishing the sculpture. Unfortunately, they don't work very quickly and may require several stages before you get a very noticeable difference. With polymer clays, you have a choice of alcohol or the oil-based thinner made for the polymer clay. The thinner will leave an oily residue that is hard to clean off and can keep the clay from baking properly if it is applied to heavily. Alcohol causes the unbaked clay to crack and fall apart if you aren't very careful. Also, polymer clays are much more prone to picking up brush strokes.

If you plan to do mixed-media sculpture, Castilene works with scratch-built parts made out of plastic, wood, or lightweight metals but you have to be careful not to use anything that is so heavy that the Castilene can't support it. Polymer clay works with heat resistant materials such as wood or metal, but you have to be careful that the materials will not conduct heat and cause the clay to burn or distort due to overheating. When using other sculpting compounds, polymer clays work best if you are applying the alternate materials onto the polymer clay sculpture, whereas Castilene works better if you are applying the Castilene onto the alternate materials.

Since it can be melted and poured, parts can be cast in Castilene to be added to a sculpture or modified. You can achieve a similar effect using push molds with polymer clays, but you can't get nearly as complex with the push molds as you can when molding Castilene. Texture stamps can also be used on

both materials, but they tend to be easiest to use with polymer clays or soft grade Castilene.

Castilene is more economical than polymer clay. A one-pound block of castilene is about the same volume as 3 to 4 one-pound blocks of polymer clay and costs about the same. This is due to the material's lower density, which also gives Castilene it's self-supporting abilities. Unfortunately, it's not as easy to get, since only a couple of places are actually allowed distribute it. Polymer clays are easily accessable since almost any craft or hobby shop will have a selection of them.

Overall, Castilene tends to be better suited to sculptures that you plan to cast in some way, while polymer clays tend to work better for one-of-a-kind sculptures.

5-2: Plasticine

Castilene and plasticine are very similar in workablilty. Castilene was designed to work like plasticene and both come in varying hardnesses. There are only minor working differences between Castilene and plasticine. Castilene's advantage is that, being wax-based, it is light enough to support itself without a metal armature or support, whereas plasticine has to be built on an armature or it will collapse under its own weight. This also means that you get more material per pound of Castilene than you do from plasticine. Plasticine, on the other hand is easier to smooth and finish than Castilene.

5-3: Other Waxes

Plasticine is less brittle than most waxes and can be modeled and shaped in more ways. Most waxes that are suitable for sculpture have to be carved, cut, and sanded to create a sculpture. While Castilene can be used as a carving wax, it has other working methods available as well.

The advantage to sculpting waxes is that they work better with one-off lost wax castings for bronze sculpture. Castilene burns out clean but requires a lot of additional work for lost wax castings to work properly and many foundries are not prepared to make the changes necessary to accommodate the use of Castilene patterns for lost wax casts.

Section 6: Where to buy Castilene

Castilene is available in the US exclusively from The Compleat Sculptor. Visit their website at http://www.sculpt.com/.

Castilene is available in Canada through The Martian Factory. Visit their website at http://www.martianfactory.com/.

Section 7: Acknowledgement and Thanks

Thanks to all the people who have offered input, suggestions, and guidance as I create this guide. The list, in no particular order:
Claudio Setti for setting up the Sculpture Underground/Martian Factory forums and providing a lot of great information on working with Castilene
Dan Perez for his comments and criticizm
The Compleat Sculptor and Castilene.com for making this material available
Palisades Toys for telling me about Castilene
Everyone on the Martian Factory forums for your input and commentary

I'm constantly updating this compendium as new information is available. If you have any comments, criticizms, tips, tricks, or other information that might help this guide, you can email me at [staticmotion at tokyo dot com] or [staticmotion at hotmail dot com] (replace the " at " with "@" and " dot " with "." - you can blame the spammers for this).