



Forensics Source  
13386 International Parkway  
Jacksonville, Florida 32218  
Tel. 800-347-1200  
Fax: 800-366-1669  
[www.forensicsource.com](http://www.forensicsource.com)

# AccuTrans<sup>®</sup> Casting Medium

## TECHNICAL NOTES

### Background

AccuTrans is a polyvinyl siloxane casting material that has superior reproductive properties and uses a no mess delivery system that is simple to use. AccuTrans uses a simple two-part component delivery system that delivers accurately mixed materials each and every time.

AccuTrans can be used to cast gun barrels, tool marks, bite marks, and lift fingerprints from textured surfaces and in some cases footwear and tire track marks.

AccuTrans is a fast curing, precision surface impression material with long-term stability for microscopic evaluation and documentation. AccuTrans exhibits less than 0.2% change in linear distortion after setting.

### Safety

AccuTrans has a non-toxic formulation. Care should be taken to prevent contact with the eyes. If contact does take place, treat as foreign body irritant and flush with water.

### Equipment

AccuTrans is delivered with a specially designed dispensing gun. The AccuTrans is contained in a double tube cartridge. Each cartridge contains one tube of base and one tube of catalyst. Attached to the cartridge is a specially designed mixing tip. The mixing tip mixes the components before they are dispensed.

### Components

AccuTrans kits are supplied with all components necessary to cast 3-dimensional marks. The kits include two tubes of AccuTrans, 40 mixing tips and an extrusion gun. The tips are a one-time use item and should be left on the tube after casting to protect the components from mixing and rendering the tube useless. The cured mixture cannot be removed from the mixing tip and new tip is used for each casting.

## **Method**

### ***Casting Fingerprints on Textured Surfaces***

Developing fingerprints on textured surfaces has always presented a problem when trying to retrieve the print for preservation. AccuTrans allows the examiner to easily cast powder developed fingerprints.

Powder process the item. Visually examine results. Always photograph results before attempting to cast.

When ready to cast, apply a dollop of AccuTrans to the print. The amount should be large enough to adequately cover the mark. With a gloved finger, carefully spread the AccuTrans with a swirling motion, taking care not to impact the surface. The swirling action will remove any trapped air at the surface. Let the cast set for about 5 minutes and when cured, remove from the surface.

Grey AccuTrans will effectively lift prints developed with black, white and fluorescent powders. Silver, Silver/Grey and Bi-chromatic powders do not lift well, as the AccuTrans retains the qualities of the silver component and tends to obliterate the characteristics of the print.

When photographing the results of the casting, it must be noted that the print is in reverse orientation. The image must be flipped when printing and examined.

### ***Casting Gun Barrels***

AccuTrans is probably the easiest tool to recover a full-length barrel casting. AccuTrans' flexibility and high elasticity allow easy casting without breakage or barrel deposits.

With the dispenser gun assembled, insert the mixing tip in the breach end of the barrel. Inject the AccuTrans into the barrel until it crests the other end of the barrel. Allow enough material to exit until a small button is formed. Slowly draw the tip from the barrel while continuing to inject the material in the barrel. When the tip comes to the end of the barrel, place enough material over the end of the barrel to form another small button. Either button will be used to extract the cast from the barrel. When the buttons are cured, grasp one button and slowly pull the cast from the barrel. The entire cast should easily snap from the barrel.

In the event that gaps were produced while the AccuTrans was injected into the barrel and the casting breaks off while removing, a second casting can be made while the remainder stays in the barrel. Insert the tip in the open end of the barrel and inject more AccuTrans. The new material will readily adhere to the cured cast and form a new one-piece casting.

Hint: To easily mark the breach end of the casting, cut a small square of Avery label wax backing paper and stick over the button of AccuTrans before it cures. The AccuTrans will make a strong bond with the paper. Identifying information and orientation can be marked on the paper for later reference.

### ***Casting tool marks***

AccuTrans has excellent reproductive properties when casting tool marks. With limited linear distortion, the marks cast will reproduce with the greatest of detail.

Determine the tool mark to be cast. Visually examine the mark. Always photograph the mark before attempting to cast.

When ready to cast, apply a small dollop of AccuTrans to the mark. The amount should be large enough to adequately cover the mark. With a gloved finger, carefully spread the AccuTrans over the tool mark, making sure to completely cover the detail of the mark. This will reduce the chance of air bubbles forming in the fine detail of the mark. After the small amount has been spread, apply a larger amount of AccuTrans over the mark. This second application will readily adhere to the thin layer already on the mark. Spread the second layer around until the first layer has a thicker layer over it. A small piece of plastic or glass slide can be placed over the cast to form a smooth backing to aid in placing the cast under a microscope. The cast should be photographed to record its orientation on the surface. Let the cast set for about 5 minutes and when it is cured, remove from the surface.

Please note: a reverse cast cannot be made of the AccuTrans. AccuTrans' adhesive qualities will bind to itself even if the first cast has cured making it impossible to separate the attempted reverse cast.

### ***Casting Bite Marks***

Casting bite marks is only a means to reproduce the 3-dimensional qualities of the details left impressed in the skin.

The mark should be visually examined for details. Notes should be taken on its location and orientation. Swabs should be taken from the area for DNA collection and examination. Photographs should be taken prior to any casting or swabbing.

When ready to cast, apply a small dollop of AccuTrans to the mark. The amount should be large enough to adequately cover the mark. With a gloved finger, carefully spread the AccuTrans over the tool mark, making sure to completely cover the detail of the mark. This will reduce the chance of air bubbles forming in the fine detail of the mark. After the small amount has been spread, apply a larger amount of AccuTrans over the mark. This second application will readily adhere to the thin layer already on the mark. Spread the second layer around until the first layer has a thicker layer over it. A small piece of plastic or glass slide can be placed over the cast to form a smooth backing to aid in placing the cast under a microscope. The cast should be photographed to record its orientation on the surface. Let the cast set for about 5 minutes and when cured, remove from the surface.

### **Helpful Hints**

AccuTrans works best in an environment with an ambient temperature of approximately 23°C/73°F. Please refer to the chart for working and setting times according to temperature.

Temperature °C/°F	Working Time <i>min</i>	Setting Time <i>min</i>
-30/-22	48	160
-20/-4	24	80
-10/14	12	40
0/32	6	20
10/50	3	10
20/68	1:30	5
30/86	0:45	2:30
40/140	0:23	1:15

In order to control the working time, it may be necessary to warm or cool the surface where the tool mark is located. This can be affected using a heat gun or plastic bags of cool or hot water. Care should be taken not to change the surface or any detail that may be present.

### **Precautions**

Acidic, alkaline and sulfurous compounds (e.g. skin secretions, latex gloves and surfaces contaminated by latex gloves) can influence or prevent curing of polyvinyl siloxane.

### **Ordering Information**

- Catalog No. 4-1041 (1005725) ..... AccuTrans Kit, Brown
- Catalog No. 4-1042 (1005726) ..... AccuTrans Kit, White
- Catalog No. 4-1043 (1005727)..... AccuTrans Kit, Clear
- Catalog No. 4-1044 (1150744)..... AccuTrans Kit, Black
- Catalog No. 4-1031 (1005716)..... AccuTrans Brown Refill
- Catalog No. 4-1032 (1005717)..... AccuTrans White Refill
- Catalog No. 4-1033 (1005718)..... AccuTrans Clear Refill
- Catalog No. 4-1034 (1150743)..... AccuTrans Black Refill
- Catalog No. 4-1035 (1005719)..... Replacement Gun
- Catalog No. 4-1036 (1005720)..... Replacement Tips (40)
- Catalog No. 4-1037 (1005722)..... Replacement Tips and Spreader Tips (40)
- Catalog No. 4-1038 (1005723)..... Replacement Spreader Tips (40)
- Catalog No. 4-1030 (1314594)..... Curved Tip Insert (12)
- Catalog No. 4-1045 (1218664)..... Accutrans Pocket, Brown
- Catalog No. 4-1046 (1314591)..... Accutrans Pocket, White
- Catalog No. 4-1047 (1314592)..... Accutrans Pocket, Transparent
- Catalog No. 4-1039 (1156837)..... Accutrans Ice, Brown