

NEATH PORT TALBOT COLLEGE COLEG CASTELL NEDD PORT TALBOT

School of Maths & Science Science Practical

Chemical Fingerprinting

◆ Aim

At the end of this experiment you should be able to:

1. Develop a latent fingerprint to produce a clear, visible fingerprint.
2. Safely use a range of chemicals to develop latent fingerprints.
3. Evaluate the value of the evidence in a court.

◆ Introduction

Today, fingerprints are one of the most commonly used types of physical evidence. The fingerprints of offenders are often found at crime scenes ranging from petty theft to homicide. Fingerprints are also used in the identification of fugitives, identification of bodies, missing persons and mass disaster victims.

The friction ridges covering the tips of our fingers, the palms of our hands as well as our feet and toes are formed during foetal development and are fully formed by the time we are born. These ridge patterns stay with us throughout our lives and it is believed that no two people have identical ridge patterns.

The patterns from the ridge detail are transferred when they contact a surface by secretions given off from our pores.

◆ Safety

Control Measures

- The wearing of safety **glasses** and a **laboratory coat at all times** will be sufficient to take account of most hazards and significant risks
- All waste is to be placed in the labeled container immediately after use
- You are reminded of the need of good laboratory practice in order to maintain a safe working environment.
- Work should be carried out in the fume cabinets
- Gloves should be worn when handling chemicals.

Hazards

Harmful! Irritant

Cyanoacrylate, Iodine, Ninhydrin



◆ Procedure

Develop the prints as follows:

1. Wash hands and dry then rub hands in hair, along neck, near ears or side of nose to ensure that natural oils are on the print.
2. Place the print onto the sample of choice.
3. Use a range of chemicals in order to develop the best print.
4. Select the best and worst sample for each type of chemical and each type of surface and suggest your best method for latent print analysis.

	Paper	Card	B/Plastic	W/Plastic	Newsprint	Tape
Superglue						
Gentian violet						
Silver Nitrate						

Iodine						
Ninhydrin						

◆ Conclusions

Write up a report drawing conclusions as to the type of chemical that produces the best fingerprints on each surface type. Display the fingerprints produced to show your results.