

# **Field guide**

## **for forensic site investigations**



**Advice for first police on the scene**  
**Check lists and instructions**  
**for forensic technicians and other police personnel**

The Swedish National Laboratory of Forensic Science – SKL  
2014

# Foreword

This is the fourth edition of the Field Handbook. The first edition was published in 2005, for the purpose of providing guidance and support for staff working at crime scenes.

Forensic work undergoes constant development and improvement and, consequently, you will find some changes in this edition, for examples in the areas of fire, fibres and DNA.

The section on evidence collection kit – sex attacks on page 35 in part 1 is new, but the largest new section, which deals with DNA tagging, can be found on page 21 in part 1.

As part of updating the handbook, we have tried to make the layout and language more concrete, to make the book easier to use.

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# Forensic site investigations

This Field Guide for Forensic Site Investigations is intended for all categories of police officer. The aim is to give advice on the appropriate way to proceed at crime scenes and fire sites. In forensic investigations, it is essential that everyone involved does the right thing in the right way.

Much of the content of the Field Guide relates to tasks which should be carried out only by forensic technicians.

## Part 1: Crime scenes

For each type of crime scene, the Field Guide starts with a checklist and then gives a more detailed description of the forensic investigation.

The checklists are intended to be an aid to memory, and not to replace the investigator's own thought processes. In each individual case, the investigator must decide which points in the list are relevant and whether anything else must be added.

"First police at the scene" contains advice on the general measures which apply to all types of crime scene.

## Part 2: Traces

This section deals with various types of traces, along with advice on how traces should be handled. It is essential that the greatest care is taken in securing and packing traces.

## Experience and expertise

The Field Guide is no substitute for the investigator's knowledge, experience and expertise. This book is an aid to memory, particularly for tasks which you are trained to carry out, but seldom have a chance to practice.

# Avoid contamination

When two objects come into contact with each other, there is always an exchange of material between them. This can happen even without actual physical contact between the objects. It can happen through fibres floating in the air, for example. Another type of contamination can take place when the people handling the materials contaminate them with their own DNA, or with something which they have handled previously.

After a crime has been committed, all exchanges of material, which would then represent contamination, must be avoided throughout the material-handling process – from securing at the crime scene to the comparison examinations in the laboratory.

In addition to the points in the checklists, the following rules should be followed to avoid contamination:

- Never put a suspect and victim in the same room or in the same vehicle. Not even at different times.
- Use disposable, single-use protective clothing (gloves, overalls, hair restraints, breathing masks and shoe covers) when entering the crime scene and when securing traces (hair, fibres, blood, secretions, small particles etc.) Change gloves often.
- One person carries out the crime scene examination, another examines the suspect's clothes, vehicle etc., a third the suspect, a fourth the victim and so on.
- Vehicles should initially be examined where they are found.
- If a vehicle has to be moved, a recovery truck should be used. Avoid using the seats. If the seats must be used, wear protective clothing. If the vehicle must be driven, only a driver wearing protective clothing is to be allowed in the vehicle. The clothing worn must be noted and the note handed to the examiner.

# Contents Part 1

Site investigations

## **First police at the crime scene**

Initial action at every crime scene and fire site

## **Road accidents**

## **Burglary**

## **Robbery**

Banks, foreign exchange offices etc.

## **Crimes of violence**

Murder, manslaughter, honour crimes, assault

## **Suicide**

## **Sex crimes**

Rape, incest etc

## **Drugs crimes - poisoning**

Illegal production of narcotics and alcohol

## **Fraud**

Forged documents, banknote counterfeiting etc

## **Digital Evidence**

## **Fires**

## **Explosions**

Explosions, bomb threats

## **Environmental crimes**

## **Wildlife-related crime**

## **Contents part 2**

Securing/handling materials and traces



# First police at the crime scene

The checklists are intended to be an aid to memory, and not to replace the investigator's own thought processes.

1. Take any necessary rescue action.
2. Decide whether a crime has been committed.
3. Arrest suspected perpetrator.
4. Make a note of everyone at the crime scene, and where they can be found over the next few hours. Remove them from the crime scene.
5. Do not let anyone enter the crime scene. This applies even to police officers who have no special reason to be there. Exception: rescue action.
6. Inform the nearest senior officer able to appoint an investigator and arrange reinforcements at the scene.
7. If firearms have been discharged, secure any powder residue on hands.
8. If anyone involved has been taken to hospital, ensure that a police officer is sent to the hospital to take any necessary action. Take an "Evidence collection kit - sex attacks" in the event of rape or other sex crime. Also take bags for confiscated clothing.
9. Cordon off the crime scene and a sufficiently large surrounding area.

## While waiting on reinforcements arriving:

10. Make sure the crime scene remains unchanged.
11. Make a note of actions taken and any persons who have entered the crime scene. Also note down the times of important events and observations
12. Take photographs and possibly video footage when changes happen at the crime scene, for example, in the event of a fire or if a rescue is carried out.



## Action in the event of a suspected bomb

**Only bomb disposal specialists are allowed to deal with and render safe bombs. FAP 208-3.**

1. Switch off your radio and mobile phone.
2. Do not switch on lights on the premises.
3. Do not approach closer than is absolutely necessary.

**Before you enter the area, question the person who reported the device in a safe place:**

1. What kind of object is it?
2. How large is the object?
3. Where exactly is it located?
4. When was it discovered?
5. Who made the discovery?
6. Does anyone know why the object is there?
7. Have any threats been received?
8. Has anyone touched the object?
9. Does the object give off any smell or sound?
10. What is the surrounding area like? (Splinters!)

Decide whether the object might be a bomb, or, for bomb threats, whether the threat is serious. If so, all the actions listed below must be taken. If not, they are not necessary.

Contact the **senior officer on duty** as soon as possible, so that he or she can decide, on the basis of the information you have obtained, whether the area should be cordoned off or evacuated, and whether bomb disposal specialists should be called in.

Cordon off a sufficiently large area. Remember that a hand grenade poses a risk within a 300 m radius. For large, metal-cased charges, the risk radius is 500-600 metres.

Safety is the first priority - your own and other people's!

Ask the person who discovered the object to remain available until bomb disposal specialists arrive.

Obtain drawings and sketches of the premises.

**To continue the investigation of the scene, see the chapter for the appropriate crime.**

## General checklist

The general checklist for the initial stage is based on the four main tasks the first police on the scene should perform:

1. Take any necessary rescue action.
2. Arrest suspected perpetrator.
3. Preserve and possibly secure traces.
4. Cordon off the scene.

## Save lives

Life-saving action must be taken immediately if there are any signs of life or if there are no definite signs of death. This must be done even if you suspect a crime has been committed and your action might destroy traces or evidence.

## Arrest suspected perpetrator

If the incident is recent, take action to arrest the perpetrator, if possible. Start by questioning anyone at the scene about any circumstances which might clarify the situation.

If you are given a description, the escape route or similar information, act on this immediately and pass it on so that alerts can be put out. Remember that people on the scene who claim to be witnesses may, in fact, be involved in the incident.

## Preserve life and secure traces

After any necessary life-saving action has been completed, the primary task of the first police at a crime scene is to preserve the scene. Preserving and securing traces involves a large number of different measures, which vary from scene to scene.

The primary duty of the first police at the scene is to preserve traces, and secondly, to secure such traces, to prevent them being destroyed. To secure a trace, please refer to part 2 under the relevant tab for the type of trace involved. To prevent the evidential value of the trace being lost, it is vital to avoid contamination. See pages 2 and 8.

Secure any CCTV recordings, since the data on these can be recorded over almost immediately. See Digital Evidence.

## Avoid contamination

When two objects come into contact with each other, there is always an exchange of material between them. This can happen even without actual physical contact between the objects. It can happen through fibres floating in the air, for example. Another type of contamination can take place when the people handling the materials contaminate them with their own DNA, or something which they have handled previously.

After a crime has been committed, all exchanges of material, which would then represent contamination, must be avoided throughout the material-handling process – from securing at the crime scene to the comparison examinations in the laboratory.

In addition to the points in the checklists, the following rules should be followed to avoid contamination:

- Never put a suspect and victim in the same room or in the same vehicle. Not even at different times.
- Use disposable, single-use protective clothing (gloves, overalls, hair restraints, breathing masks and shoe covers) when entering the crime scene and when securing traces (hair, fibres, blood, secretions, small particles etc.) Change gloves often.
- One person carries out the crime scene investigation, another examines the suspect's clothes, vehicle etc., a third the suspect, a fourth the victim and so on.
- Vehicles should initially be examined where they are found.

- If a vehicle has to be moved, a recovery truck should be used. Avoid using the seats. If the seats must be used, wear protective clothing. If the vehicle must be driven, only a driver wearing protective clothing is to be allowed in the vehicle. The clothing worn must be noted and the note handed to the examiner

## Cordon off the scene


The aim of cordoning off the scene is to prevent unauthorised individuals entering the crime scene. A guarded barrier is always best. Cordon off the area using tape/rope and no-entry signs. Cordon off a sufficiently large area. It is much better to cordon off an area that is too large than one that is too small!

## Witnesses

Do not allow witnesses and suspects to return to or enter the crime scene. People at the scene who are to be interviewed should be taken to nearby premises and held individually, since they may have valuable information, carry traces etc which must not be transferred to other people.

## People in hospital

If anyone involved (suspect or victim) has been taken to hospital, a patrol should go to the hospital and take the following action:

- Confiscate the person's clothing and place the articles individually in paper bags, marking them with date/time, place and contents.
- See part 2 under **Articles of clothing**.
- Find out from the hospital staff who removed the clothing from the person concerned and how the articles have been stored.
- In cases involving murder, manslaughter and assault, ensure that traces are secured from the victim/suspected perpetrator.
- Ensure that the suspect and possibly also the victim are checked for the effects of alcohol and narcotics by taking samples.
- For sex crimes: Make sure that the special instructions are followed. Take an "Evidence collection kit - sex attacks".
- See part 2 under **Blood, bodily fluids, DNA**.
- If firearms have been discharged, secure any powder residue on hands.
- See part 2 under 

## General advice on securing traces

A large number of traces, such as DNA and fingerprints, are secured at the crime scene. For that reason, it is extremely important to make a careful record of where each trace was secured. It is not enough to write "in the apartment", "on the suspect", "in the car" etc. Use the person's name instead of a designation such as "the suspect".

It is better to write, for example, "on a beer can, Carlsberg Guld 5.8%, which was found in car with registration number ABC 123, on the floor in front of the passenger seat, front right", "From the bloodstain on the outside lower panel of the forced terrace door".

It is better to provide too much detail than too little. This reduces the risk of discovering later on that information is missing.

# Road accidents

This chapter deals primarily with road accidents which involve an investigation of criminal conduct, such as leaving the scene of an accident.

**The checklists are intended to be an aid to memory, and not to replace the investigator's own thought processes.**

1. Get as much information as possible about the accident both before you proceed to the scene and when you arrive.
2. Start a daybook. It is possible, for example, to examine fibre/plastic fusion between people's clothing and plastic components inside and outside the vehicle to establish whether the vehicle has collided with a person or find out who was driving the vehicle at the time of the accident. See point 12.
3. Cordon off the area or supplement existing barriers if necessary.
4. Take general photographs of the accident site. Take photographs of the crashed vehicle from straight ahead, from directly behind and from each side. Shoot video footage.
5. Compile and evaluate the material collected, and plan the continuing investigation.
6. Make continuous notes of your observations. Ideally, use a voice recorder.
7. Clarify the direction of travel of the various parties before the collision. Take photographs in the direction of travel of the various parties from the height they were at before the collision.
8. Make a sketch. Take measurements and indicate where traces and comparison samples were collected.
9. Take photographs and, if possible, video footage continuously. Photograph all damage and other traces.
10. Search for and collect traces, objects, comparison samples etc. from both inside and outside the vehicle, which may be significant for the investigation of the accident.
11. Write a list of items seized as you go along.
12. When investigating fibre/plastic fusion:
  - Collect the vehicle/all parts of the wrecked vehicle and any loose articles of clothing.
  - Contact SKL to discuss the matter.

## Securing traces

With road accidents, look for the following types of traces and materials:

**Tyre tracks**



**Blood**



**Hair**



**Fingerprints**



**Glass, paint and plastic**



**Textile fibres, scraps of fabric**



**Related materials/pieces of material which fit together**



**Articles of clothing/textile materials**

(clothing from all individuals involved in the accident)



The symbols in the boxes show which tab in Part 2 of the Field Guide to refer to for more information on securing traces.

# Break-ins

**The checklists are intended to be an aid to memory, and not to replace the investigator's own thought processes.**

## Crime scene investigation for break-ins.

1. Get as much information as possible about the crime before you proceed there and when you arrive at the scene, including whether there are any alarms and CCTV cameras. Start a daybook.
2. Cordon off the area if necessary. Do not step on the floor before you have checked for shoe prints. Use artificial lighting. Think about how to proceed without destroying traces.
3. Make sure that a list is prepared of the people who enter the crime scene.
4. Take general photographs of the crime scene. Shoot video footage.
5. Consider the situation and plan your actions. The crime scene analysis starts now.
6. Make continuous notes of your observations. Ideally, use a voice recorder.
7. Secure outdoor traces.
8. Decide which access route was used and take photographs. Describe doors even if you cannot see any damage. They may have been used without leaving visible traces.
9. Secure break-in traces. Check locks.
10. Make a sketch. Indicate where traces and comparison samples were collected.
11. Take photographs continuously. Photograph all traces before they are secured. Ideally, use a professional photographer for expert photographing of traces.
12. Search for and secure traces, objects, comparison samples etc which have a bearing on the investigation of the crime.
13. Write a list of items seized as you go along.
14. Check the crime scene before removing cordons. Make sure that you have not forgotten anything important, such as interview records. Remember that a suspect can enter the crime scene after the cordon is removed. This must not be allowed to destroy the evidential value of the traces.



15. If the incident was filmed by CCTV cameras, watch the film to see where traces may be found. Collect the recording, as well as the player. Note the reading on the system clock and any deviation from the speaking clock, see Digital Evidence.

## Access route

After a break-in, it is essential to investigate how the perpetrators gained access. It is important to establish the access route, which need not always be a door. Examine the building from the outside, and check for traces of forced entry or other interference with doors and windows. Check that the locks are working and look for signs of tampering.

## Ask the complainant

Ask the complainant for help in determining what has been stolen and where traces may have been left after the perpetrator moved objects. Search for traces in these locations.

## "Invisible" shoe prints

Any papers left on the floor are always worth examining. They may contain "invisible" shoe prints. Collect all paper and examine for shoe prints later on returning to the department. Alternatively, send papers to SKL for examination. There may also be "invisible" shoe prints on items such as desk pads and chair seats.

## DNA tagging

DNA tagging is the collective name for a new type of marking used for crime prevention or investigation purposes. Normally, the marking is invisible in visible white light, but it may be used in combination with colourants. The marking is generally detected using UV light at a frequency of around 365 nanometres (nm). When exposed to fluorescence, the marking shows up as yellow, green, blue or pink/orange colour. DNA tagging may be used in sprinkler systems in banks, safe deposit vaults, armoured vehicles for transporting cash and valuables, shops, warehouses and vehicles. The technology can be activated in response to a specific event or used to mark valuables for crime prevention purposes.

The products consist of a carrier fluid to which a unique combination of elements, synthetic DNA or plant-DNA is added. A very large number of combinations are used in the composition of the DNA tagging, giving each one a unique identity.

Microdot markings can also be added to the marker systems, in the form of a fluid additive consisting of small plastic or metal discs with laser-etched digits and/or letters.

## Known products currently used in Sweden:

- SmartWater (UK) Sticker which indicates the use of SmartWater:



- SmartDNA, Applied DNA Sciences, ADNAS (USA). Stickers which indicate the use of ADNAS products:



- TraceTag International (UK). Sticker which indicate the use of TraceTag International. May also be indicated by the text "CypherMark™":



- Selecta DNA (UK). Sticker which indicate the use of Selecta DNA, as well as the sticker used by the Swedish general agent, Vindico:



- SSF (Svenska Stöldskyddsföreningen):



## Securing DNA tagging

If the presence of DNA tagging is suspected, a forensic specialist **must** be contacted to secure it. Anyone entering a crime scene where DNA tagging may be present must wear protective gear to prevent contamination.

If possible, start by using UV light to photograph the fluorescent contamination suspected of containing DNA tagging. Then secure and package the material in accordance with the instructions in the literature for securing DNA tagging.

In blackout conditions, a standard camera may be used. Secured material should be sent to SKL. When requesting an investigation by SKL, use the order code K00 along with text that clearly explains that the request refers to the identification of DNA tagging.

**NB!** Concentrated UV light can be harmful to the eyes. Use protective goggles at all times – this includes suspects.

# Securing traces

## Securing traces

With break-ins, look for the following types of traces and materials:

### Tool marks

Access route, cabinets which have been forced open



### Fingerprints

Access points etc.



### Blood, saliva, DNA

Bloodstains, cigarette ends and other objects carrying saliva



### Explosives

Where a safe has been blown open, for example



### Hair

At access points, for example



### Shoe prints, glove prints and tyre tracks

Outdoors and indoors



### Glass and paint

Windows, safes, access points



### Safe linings



### Textile fibres

At access points, for example



### Related materials/pieces of material which fit together



### CCTV footage

See Digital evidence



The symbols in the boxes show which tab in Part 2 of the Field Guide to refer to for more information on securing traces.



# Robbery

Banks, post offices, foreign exchange offices etc.

**The checklists are intended to be an aid to memory, and not to replace the investigator's own thought processes.**

1. Get as much information as possible about the crime before you proceed there and when you arrive at the scene. If possible, ask the staff where the perpetrator has walked and what he has touched.
2. Get a general overview of the situation. Familiarise yourself with the crime scene so that you have a rough idea of the area and the incident. Find out about any CCTV cameras and study the footage before investigating.
3. Start a daybook.
4. Cordon off the area or supplement existing barriers if necessary. Consider whether the perpetrator's route to and from the scene should also be cordoned off.
5. Make sure that a list is prepared of the people entering the crime scene.
6. Put together the available information and plan the investigation. The analysis of the crime scene begins now. Use a light source to check the floor for traces before you step on it yourself.
7. Make continuous notes and observations. Ideally, use a voice recorder.
8. Take general photographs of the crime scene. Shoot video footage.
9. Search for and secure traces, objects and comparison material outdoors.
10. Take photographs continuously. Photograph all traces before they are secured. Ideally, use a professional photographer for expert photographing of traces.
11. If the incident was filmed by CCTV cameras, watch the film to see where traces may be found. Collect the recording, as well as the player. Note the reading on the system clock and any deviation from the speaking clock, see Digital Evidence.

12. Make a sketch. Indicate where traces and comparison samples were collected.

13. Write a list of items seized as you go along.

14. Check whether the stolen money included marked banknotes.

15. Check the crime scene before you leave. Ensure that you have not forgotten anything important, such as interview records, memos, your own equipment etc.

### Securing traces

With robberies, look for the following types of traces and materials:

#### Hair

In balaclavas etc.



#### Fingerprints



#### Blood and saliva

Bloodstains, saliva on balaclavas etc.



#### Weapons, bullets and cartridge cases



#### Related materials/pieces of material which fit together



#### CCTV footage

See Digital Evidence



#### Glass

Smashed windows etc.



#### Shoe prints, glove prints and tyre tracks



#### Textile fibres

e.g. in suspect's hair



#### Articles of clothing/textile materials



The symbols in the boxes show which tab in Part 2 of the Field Guide to refer to for more information on securing traces.

# Securing banknote ink stains

## Tips and advice for house searches/crime scene investigations

- During a house search/crime scene investigation, the things to look for include:
- Banknotes discoloured by a substance suspected of being security ink.
- Banknotes which have been altered when discoloured areas have been painted over or clipped off.
- Banknotes with pressure damage and burnt, frayed edges. The banknotes may have been in a securities container or in an ATM which was blown up.
- Any explosives residues, please refer to the chapter “Material from explosions
- Clothing, gloves and shoes with suspected security ink stains.
- Washing equipment (detergent, sponges, vinyl gloves etc.) which may have been used to remove discolouration from stained bank notes.
- Saws and other cutting equipment which may have been used to open a securities container or cassette.
- Sawdust and grinding dust which can be compared against the securities container/cassette concerned.
- Vehicles in which stained material may have been transported.

# Securing banknote security ink

Here is some advice on how banknote security ink can be secured for analysis by SKL.

- At a crime scene investigation where a securities container has been opened, the codes marked on the container should be noted or photographed. The markings may be found on the outside and/or inside of the container. The markings can be used to trace the security company which owns the container. That company will then be able to provide information on whether the bank note security ink in the bag contains any marker substance which would link stained notes to that precise container.
- It may be possible to collect an ink sample from the container. Use a piece of Kleenex or kitchen roll to absorb the ink. Place the paper in a fire-proof bag/Duobag and seal it. All material covered in wet bank note security ink must be sealed in fire-proof bags/Duobags to prevent contamination of other material.
- When there are a number of banknotes covered in similar quantities of the same ink, select 5-10 notes, and send them to SKL. If the staining on the banknotes varies in
- colour or appearance, a selection of notes carrying stains of each colour/appearance should be collected.
- When suspected bank note security ink is found on an object, the whole object or the discoloured part of that object should be sent to SKL.
- If it is not possible to send the object, try cutting off a small, discoloured section or use a scalpel to scrape off the discolouration. Alternatively, moisten a cotton bud with alcohol and use it to rub the stain. Use the same method for securing suspected bank note security ink stains found on skin. Some bank note security ink is, however, insoluble in alcohol and cannot be collected using a cotton bud. Discolouration on a suspect's nails can be scraped off using a scalpel. The nail scrapings are placed on a small piece of paper which is then folded and placed in a plastic box, plastic bag or envelope.



## DNA tagging

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## Securing DNA tagging

If the presence of DNA tagging is suspected, a forensic specialist **must** be contacted to secure it. Anyone entering a crime scene where DNA tagging may be present must wear protective gear to prevent contamination.

If possible, start by using UV light to photograph the fluorescent contamination suspected of containing DNA tagging. Then secure and package the material in accordance with the instructions in the literature for securing DNA tagging.

In blackout conditions, a standard camera may be used. Secured material should be sent to SKL. When requesting an investigation by SKL, use the order code K00 along with text that clearly explains that the request refers to the identification of DNA tagging.

**NB!** Concentrated UV light can be harmful to the eyes. Use protective goggles at all times – this includes suspects.

# Violent crime

## **Murder, manslaughter, assault**

Follow the rules on pages 2 and 8 to prevent contamination.

The following checklists can be found under the heading, "violent crime":

- General checklist for violent crime
- Investigation after discharge of firearms
- Investigation in connection with a death
- Investigation of suspected honour-related crime

**The checklists are intended to be an aid to memory, and not to replace the investigator's own thought processes.**

## General checklist for VIOLENT CRIME

1. Get as much information as possible about the crime before you proceed to the scene and when you arrive from the first police on scene and from other police officers present. Are there any alarms or cameras?
2. Cordon off the area or supplement existing barriers if necessary. It may also be advisable to cordon off the perpetrator's route to and from the scene. Consider whether to use stepping plates.
3. Get a general overview of the situation. Familiarise yourself with the crime scene so that you have a rough idea of the area and the incident.
4. Start a daybook.
5. Make sure that the police officer in charge arranges for the cordoned off area to be guarded as necessary.
6. Make sure that a list is prepared of the people who enter the crime scene.
7. Digital evidence - secure mobile phones, computers and any other IT equipment.
8. If the incident has been videoed by CCTV cameras, watch the film to see where traces may be found. Collect the recording, as well as the player. Note the reading on the system clock and any deviation from the speaking clock, see Digital Evidence.
9. If firearms have been discharged, make sure that any powder residue on hands has been secured. If not, do it immediately. Follow the instructions in "the kit".

10. Take general photographs of the crime scene. Shoot video footage.
11. Put together available information and plan the investigation. The analysis of the crime scene begins now. Use a light source to check the floor for traces before you step on it yourself. Consider whether using stepping plates is advisable. Keep a note of where you yourself have walked.
12. Make continuous notes of your observations. Ideally, use voice recording. Decide whether you need the assistance of an expert, such as a medical examiner, SKL personnel or other specialist.
13. Take photographs continuously. Photograph all traces before they are secured. Ideally, use a professional photographer for expert photographing of traces.
14. Search for and secure traces, objects, comparison samples etc which are relevant to the investigation of the crime. Victims and suspects must also be examined. Secure comparison samples from both parties.
15. Keep a continuous record of items seized.
16. Check the crime scene before removing barriers. Make sure that you have not forgotten anything important, such as interview records. Remember that a suspect can enter the crime scene after the barrier is removed. This must not be allowed to destroy the evidential value of the traces.

## Checklist for investigating DISCHARGE OF FIREARMS

1. Secure any powder residue on the hands of the individuals involved. Follow the instructions in the kit.
2. Look for blood from the victim on the suspect and vice versa. Also look for minute bloodstains (spray) from the entry wound on hands, clothes, weapons etc.
3. Record, secure and interpret the blood pattern.
4. Estimate the shooting distance and the line of fire. Secure clothing to enable the shooting distance to be established and to secure fibres etc. Remember to pack material correctly.
5. Look for and secure weapons, cartridge cases, bullets and ammunition. Document the crime scene, make photographs and draw sketches. Is it reasonable to consider suicide? Use gloves when handling weapons etc. Cartridges and cartridge cases are very easily contaminated by DNA, so ensure that gloves and face masks are used.

# Checklist for investigating a DEATH

Use the "Daybook for investigating deaths", contained in the "Primärrapport dödsfall"[Primary Report, Death] form. The daybook contains a large number of points. Some of the more general and urgent measures are listed below. Check and secure, where appropriate, garbage bins, garbage chutes, moist traces, parked cars, watches, smells, illumination, doors, windows, radios, TVs etc.

## Examination of the body

6. Before the body is moved, photograph the position of the body and details on the body and its surroundings, e.g. traces of blood.
7. Secure loose hair, tufts of fibre etc. throughout the examination of the body. Decide whether fibres on exposed body areas, hair and clothing are to be secured by taping.
8. Note the signs of death, measure body temperature if possible and note times.
9. Check the hair. Are any injuries concealed by the hair? Has hair been pulled out? Are there foreign substances in the hair?
10. Check the ears for bleeding.
11. Check for asphyxiation-related bleeding in the conjunctiva of the eyes.
12. Examine the bridge of the nose and the nostrils.
13. Check for foreign objects in the mouth.
14. Check whether there is blood in the airways.
15. Check the neck/throat for skin abrasions, redness and signs of strangulation.
16. Examine the arms for bruising from gripping and struggling.
17. Check very carefully for marks of injections, particularly in the crook of the arm.
18. Examine the wrists for old or new cuts.
19. Examine the hands and under the nails for signs of defensive injuries, swelling, hair and skin fragments. Cover the hands with paper bags for further examination for skin fragments, hair, fibres etc. during the post-mortem.
20. Examine the full length of the torso, from front and rear.

21. Examine the legs and feet. Is there any blood on the soles of the feet? Are there any marks or injuries which point to the body being moved?

## Examination of clothing

22. Describe and photograph visible clothing carefully. (To be supplemented during the post-mortem). Creasing, damage, bullet holes, bloodstains, dirt, location on the body etc.

23. Examine the pockets and list contents.

24. Describe any blood and other staining on the clothes.

25. If possible, clothing should be collected before transport. If not, it should be collected at the post-mortem.

## Checklist for suspected HONOUR CRIME

Special expertise is required to understand codes of honour and honour-related violence. Suicide and accidents require special attention. Could the incident have been arranged?

1. Initial cordoning off measures are vital. Remember that the crime scene is an environment which relatives, who may well have been involved, have legal access to.

2. It is essential that the residence of the victim and the victim's family is carefully recorded. Indications of planning are particularly significant. Shoot video footage and make full notes.

3. Look carefully for defensive injuries, injuries caused by tools, burns, injuries caused by corrosive substances, tufts of hair, hair that has been cut off, smell of fluids, cleaning agents or inflammable liquids.

4. Is anything missing? For example, objects such as photographs from their frames, the victim's clothing and possessions. Are there any signs that evidence has been removed?

## Avoid contamination

The examination of crime scenes after violent crime can be very labour-intensive and most types of trace may be found. Ensure that the risk of cross-contamination of materials or any contamination of the crime scene by the investigating personnel is avoided. Ensure that the different individuals involved make a photographic record and secure traces and material at different locations. Decide whether tape should be used to search for fibres.

Pack materials well and ensure that material from different locations is kept apart, is stored in different rooms and handled by different individuals. See the "Avoid contamination" rules on pages 2 and 8.

## Powder residue

When firearms have been discharged, it is vital to secure powder residue from the hands of the individuals involved as soon as possible, and no later than three hours after the firearm has been discharged.

See part 2 under



## Photographic record

As with all crime scene examinations, making a photographic record is an important part of the investigation. Still photographs are to be supplemented by video footage.

## Crime scene analysis

With violent crimes, it is perhaps even more important than with other types of crime to make an accurate reconstruction of the course of events. How well the course of events is reconstructed can be crucial to the correct classification of the crime and, in the final analysis, to the verdict of the court.

This means that, in addition to securing traces, it is especially important to "read" the crime scene accurately so that there is a reliable basis for the final crime analysis with a possible and, preferably, substantiated course of events.

Part of the process of reconstructing the course of events may involve interpreting and possibly making calculations based on blood spatter patterns. This requires great care and a large number of calculations, but can throw considerable light on the course of events.

## Weapons

Where a weapon is to be collected, particularly careful handling is required for safety reasons. Lift the weapon using rough surfaces or the strap to avoid destroying any traces. Always check whether there is a cartridge in the chamber/cylinder before handling the weapon further. Always point the weapon in a safe direction so that an accidental discharge cannot injure anyone. Note the weapon's safety catch, indicator, position of the slide and whether the magazine is fully seated in position.

See part 2 under



## Signs of death

When you come across a person who is apparently dead, the signs of death must be recorded, specifying the date and time of the observations. It is up to the doctor to determine that death has occurred.

If it is obvious that death has occurred, for example if there is decomposition or obviously fatal injuries, and the police authority decides to have a post-mortem carried out, the body can be taken straight to the forensic department. A doctor there will certify that death has occurred. The doctor must be informed that a death certificate will be required. The signs of death are divided into immediate and subsequent signs of death. The immediate signs of death shall be certified by the doctor.

<b>Immediate signs of death</b>	<b>Subsequent signs of death</b>
Circulation has ceased	Post-mortem lividity
Breathing has ceased	Rigor mortis
The nervous system is not functioning	Decomposition of the body
Primary muscle relaxation	
Changes to the retina of the eye	



# Securing traces

With violent crime, look for the following types of traces and materials:

**Blood, saliva, semen and DNA**



**Fingerprints**



**Shoe prints and tyre tracks**



**Weapons**



**Tool marks**



**Related materials/pieces of material which fit together**



**Textile fibres**



**Hair**



**Articles of clothing/Textile materials**



**Glass**



**Narcotics**



**Powder residue**



**CCTV footage**



See Digital Evidence

**Digital Evidence**



The symbols in the boxes show which tab in Part 2 of the Field Guide to refer to for more information on securing traces.

**Own notes**

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**Avoid contamination, see pages 2 and 8.**

# Suicide

The checklists are intended to be an aid to memory, and not to replace the investigator's own thought processes.

## Checklist for investigating a DEATH

Use the "Daybook for investigating deaths", contained in the "Primärrapport dödsfall"[Primary Report Death] form (RPS 414-2). The daybook contains a large number of points. Some of the more general and urgent measures are listed below.

1. Get as much information as possible about the crime before you proceed there and when you arrive at the scene from the first police on scene and from other police officers present.
2. Get a general overview of the situation. Familiarise yourself with the crime scene so that you have a rough idea of the area and the incident. Always bear in mind that manslaughter or murder may be involved.
3. Take general photographs of the scene. Shoot video footage.
4. Make continuous notes of your observations. Ideally, use a voice recorder.
5. Decide whether you need the assistance of an expert, such as medical examiner, SKL personnel or other specialist.
6. Note signs of death. If possible, measure the body temperature and note times.
7. If hanging is involved: cut the rope without disturbing the knot and preserve it for further examination.
8. Check the hair. Are any injuries concealed by the hair? Has hair been pulled out? Are there foreign substances in the hair?
9. Check the ears for bleeding.
10. Check for asphyxiation-related bleeding in the conjunctiva in the eyes.
11. Examine the bridge of the nose and the nostrils.
12. Check for foreign objects in the mouth.
13. Check the neck/throat for skin abrasions, redness and signs of strangulation.

14. Examine the arms for bruising from gripping and struggling.
15. Check carefully for marks of injections, particularly in the crook of the arm.
16. Examine the wrists for old or new cuts.
17. Examine the hands and under the nails for signs of defensive injuries, swelling, hair and skin fragments. If firearms have been discharged, secure powder residue on the hands.
18. Cover the hands with paper bags for further examination for skin fragments, hair, fibres etc. during the post-mortem.
19. Examine the full length of the torso, from front and rear.
20. Examine the legs and feet. Is there any blood on the soles of the feet? Are there any marks or injuries which point to the body being moved?
21. Examine and photograph visible clothing carefully. (To be supplemented during the post-mortem). Creasing, damage, bullet holes, dirt, location on the body etc.
22. Examine the pockets and list contents.
23. Describe any blood and other staining on clothing.
24. Ideally, clothing should be collected at the post-mortem. See also page 24.
25. Remember that information may be stored on computers, mobile telephones or cameras, and may also be searched for on social media.

## Photographic record

As with all crime scene investigations, making a photographic record is an important part of the investigation. Still photographs should be supplemented by video footage.


## The course of events

Where suicide is involved, it is important to rule out manslaughter or murder. That is why it is essential to reconstruct the course of events. In addition to securing traces, this means it is especially important to "read" the crime scene accurately so that there is a reliable basis for the final crime analysis with a possible and, preferably, substantiated course of events.

## Weapons

Where a weapon is to be collected, particularly careful handling is required for safety reasons. Lift the weapon using rough surfaces or the strap to avoid destroying any traces. Always check whether there is a cartridge in the chamber/cylinder before handling the weapon further. Always point the weapon in a safe direction so that an accidental discharge cannot injure anyone.

If there is no other way of checking whether the weapon is loaded, push a stick or similar non-metallic object up the barrel all the way to the chamber/cylinder. Note the weapon's safety catch, indicator, position of the slide and whether the magazine is fully seated in position.

See part 2 under 

## Signs of death

When you come across a person who is apparently dead, the signs of death must be recorded, specifying the date and time of the observations. It is up to the doctor to determine that death has occurred. If it is obvious that death has occurred, for example if there is decomposition or obviously fatal injuries, and the police authority decides to have a post-mortem carried out, the body can be taken straight to the forensic department. A doctor there will certify that death has occurred. The doctor must be informed that a death certificate will be required. The signs of death are divided into immediate and subsequent signs of death.

<b>Immediate signs of death</b>	<b>Subsequent signs of death</b>
Circulation has ceased	Post-mortem lividity
Breathing has ceased	Rigor mortis
The nervous system is not functioning	Decomposition of the body
Primary muscle relaxation	
Changes to the retina of the eye	

The immediate signs of death shall be stated by the doctor.

## Securing traces

With suicide, look for the following types of traces and materials:

**Blood, saliva, semen, DNA**



**Fingerprints**



**Weapons**



**Powder residue**



**Articles of clothing/Textile materials**



**Narcotics**



**Related materials/pieces of material which fit together**



**Written messages, computer files, e-mails etc**



The symbols in the boxes show which tab in Part 2 of the Field Guide to refer to for more information on securing traces.

# Sex crimes

With sex crimes, the most important traces are often found on the individuals involved. That is why it is important to process these individuals in the same way as crime scenes for the purpose of securing traces. In this connection, it is particularly important to avoid contamination.

Time is also an important factor, since traces in or on the body deteriorate quickly.

**The checklists are intended to be an aid to memory, and not to replace the investigator's own thought processes.**

## Checklist

1. Get as much information as possible about the crime before you proceed there and when you arrive at the scene from the first police on scene and from other police officers present.
2. Get a general overview of the situation. Familiarise yourself with the crime scene so that you have a rough idea of the area and the incident.
3. Start a daybook.
4. Cordon off the area or supplement the existing barriers if necessary. illuminate the floor and secure walkways.
5. Take general photographs of the crime scene. Shoot video footage.
6. Consider the situation and plan your actions. The crime scene analysis starts now.
7. Make continuous notes of your observations. Ideally, use a voice recorder.
8. Decide whether you need the assistance of an expert, such as a medical examiner, SKL personnel or other specialist.
9. Take photographs continuously. Photograph all traces before they are secured. Ideally, use a professional photographer for expert photographing of traces.
10. Search for and secure traces, objects, comparison samples etc which are relevant to the investigation of the crime. Remember the risk of contamination, see also pages 2 and 8.
11. Write a list of items seized as you go along.

12. Check the crime scene before removing barriers. Make sure that you have not forgotten anything important, such as interview records.

Remember that a suspect can enter the crime scene after the barrier is removed. This must not be allowed to destroy the evidential value of the traces.

13. The incident may have been photographed or filmed, for example with a mobile phone, see Digital Evidence.

14. Digital Evidence - secure any IT equipment.

See under 

## Avoid contamination

The examination of crime scenes after sex crimes can be very labour-intensive and most types of trace may be found. Take great care to prevent cross-contamination of materials.

Ensure that different personnel secure traces and materials in different locations.

Pack materials well and ensure that material from different locations is kept apart, stored in different rooms and handled by different individuals.

## Photographic records

As with all crime scene examinations, making a photographic record is an important part of the investigation. Still photographs should be supplemented by video footage.

## Medical examination of the persons involved

Ensure that both victim and suspect are examined by a doctor as soon as possible, including securing forensic traces.

Provide the doctor with an "Evidence collection kit - sex attacks" which contains instructions and equipment for securing traces. Assist the doctor in collecting clothing and collect the secured traces after the examination. Bring bags for seized clothing.

Provide the doctor with any information which is important in evaluating which traces should be secured. Ensure that injuries are recorded and contamination avoided.



## Securing traces

With sex crimes, look for the following types of traces and materials:

**Blood, saliva, semen**



**Fingerprints**



**Shoe prints and tyre tracks**



**Narcotics**



**Textile fibres**



**Hair**



**Articles of clothing**



**Digital Evidence**



The symbols in the boxes show which tab in Part 2 of the Field Guide to refer to for more information on securing traces.



# Narcotics offences, poisoning, illegal manufacture of narcotics and alcohol

## General crime scene

It is not unusual for narcotics to be discovered by chance during other incidents, such as domestic disturbances or assaults.

Check whether narcotics have been handled at the scene by looking for powder, cannabis, tablets, ampoules etc. Also be on the lookout for indirect signs of involvement in narcotics, such as:

- Ziploc bags and other small plastic packaging (similar to finger stalls)
- Colourless capsules and possibly small pieces of wrinkled foil
- "Mirror, tube and razor blade kit" - used for snorting cocaine
- Pipes, filter papers
- Syringes, needles
- Spirits glasses and egg cups with residue from injected amphetamines or heroin
- Bent, burnt spoons, along with citric acid or ascorbic acid for injecting heroin
- Scales
- Plastic bottles containing colourless liquid

For instructions on securing a handling material, see part 2 under



Instant tests are available for testing suspected narcotics such as amphetamines, heroin, cocaine and cannabis. The test can be carried out on site and provides preliminary results within a few minutes. Remember **not** to use instant test kits in the following cases:

- If the powder is not water-soluble. The material may be an explosive, which can detonate on contact with the liquid in the instant test kit.
- If there is only a small amount of material, trace quantities.
- If the suspected narcotics are in liquid form.

## Narcotics laboratories

During raids on illegal narcotics laboratories, particular care must be taken due to the risk of

- booby traps
- armed individuals
- attack using chemicals as weapons
- corrosive, inflammable, hazardous (toxic) and explosive substances
- air contaminated with solvents and chemicals
- hydrogen gas in an explosive mixture with air - do not switch on lights on the premises

The chemicals handled in illegal narcotics laboratories may be found in various mixtures, in various stages of processing, in open vessels or not in their original sealed packaging. Consequently, there is a risk that the substances/chemicals may be explosive, inflammable, corrosive or dangerous to health. If there is even the smallest doubt, you must contact SKL. Explosives are also produced in illegal narcotics laboratories.

## Illegal spirits production

During raids on illegal stills, crude alcohol and vapour from the distillation apparatus pose a very high fire risk. Large-scale production in small premises may generate hazardous quantities of carbon dioxide, with a serious risk of suffocation. If anyone shows symptoms of carbon dioxide poisoning, such as difficulty in breathing and headache, the premises must be evacuated. Do not return until the carbon dioxide has dispersed.

There are also illegal spirits production facilities where the raw materials for ethanol production are ethanol acetate and sodium hydroxide. Concentrated ethanol acetate is highly inflammable. If a sealed container of ethyl acetate is exposed to heat, it may explode. Sodium hydroxide is highly alkaline and corrosive.

**The checklists are intended to be an aid to memory, and not to replace the investigator's own thought processes.**

# Checklist for investigations of illegal production of alcohol and narcotics

1. Get as much information as possible about the accident both before you proceed to the scene and when you arrive.
2. Decide whether to call for help from experts such as SKL personnel or bomb disposal specialists. Always contact SKL before carrying out a raid on a narcotics laboratory.
3. Start a daybook.
4. Cordon off the area or supplement existing barriers if necessary.
5. Carry out a safety inspection. Forensic technicians wearing the appropriate protective equipment will first check for any traps. A chemist will then assess the risks posed by activities involving chemicals.
6. Shut off the heat source to the distillation apparatus, hot plate etc. NB! Do not shut down water or cooling and ventilation fans.
7. Make sure that a list is prepared of the people who enter the crime scene.
8. Take general photographs of the crime scene. Shoot video footage.
9. Get a general overview of the situation.
10. Make continuous notes and observations. Take photographs continuously. Photograph all traces before they are secured, and every site which has laboratory equipment. Ideally, use a professional photographer for expert photographing of traces.
11. Make a sketch. Indicate where traces and comparison samples were collected.
12. Search for and secure traces, objects, comparison samples etc which have a bearing on the investigation of the accident.
13. Write a list of items seized as you go along.
14. Check the crime scene before removing barriers. Make sure that you have not forgotten anything important, such as interview records. Remember that a suspect can enter the crime scene after the barrier is removed. This must not be allowed to destroy the evidential value of the traces.
15. The incident may have been photographed or filmed, for example with a mobile phone, see Digital Evidence.
16. Digital Evidence - secure any IT equipment.

## Search and secure

Collect any documents which may show the extent of production or identify the perpetrators or the purchasers. Look for receipts, invoices, delivery notes etc.

Take samples from the various stages of the suspected narcotics production process. Samples from ventilation ducts, fans and sink u-bends may be useful. Mop up any chemical/narcotics spills using cotton pads soaked, for example, in an 80-percent alcohol solution.

If any tablet presses are found, collect the punches for comparison of tool marks in the embossing on any pills seized.

In addition to spirits and mash, materials which can be found at the scene of illegal alcohol distillation include sugar, activated charcoal, yeast powder and essences. Other chemicals such as ammonium carbonate, citric acid, ethyl acetate and sodium hydroxide may also be found. Look for signs that fruit or other plant matter has been used.

Collect packaging material, such as bags, rolls of plastic bags and rolls of tape. A comparison may allow these to be linked to equivalent material from other seizures and enable an estimate to be made of quantities produced.

# Poisonings

## Chemicals used in narcotics production

The following list shows a number of common chemicals used in narcotics production in Sweden:

<b>Amphetamine base</b>	From colourless to rust-coloured liquid similar to cooking oil and with a strong fishy smell.
<b>Phenylacetone</b>	Oily, pale yellow liquid with a "flowery" smell.
<b>Formamide</b>	Clear, watery odourless liquid.
<b>Formic acid</b>	Clear, watery liquid with a sharp, irritating smell similar to vinegar.
<b>Methylamine</b>	Inflammable gas with a strong fishy smell. Gives off highly inflammable vapour.
<b>Phenylnitropropene</b>	Yellow, needle-shaped crystals. Pleasant odour.
<b>Phenylacetic acid</b>	White to greyish crystals similar to granulated sugar or white powder with a characteristic smell of cat urine.
<b>Acetic anhydride</b>	Clear, watery, inflammable liquid with a smell like vinegar.
<b>Benzaldehyde</b>	Oily, almost colourless liquid with characteristic smell of bitter almonds.
<b>Nitroethane</b>	Colourless, volatile liquid which smells and looks like chemical solvents.
<b>Lithium aluminium hydride</b>	Grey, fine powder. NB! Explodes on contact with water.
<b>Mercury</b>	Silver-coloured heavy liquid

<b>Sodium</b>	Soft, silvery metal. Reacts with the oxygen in the air, and is normally stored as rods in paraffin. Risk of explosion on contact with water!
<b>Solvents:</b> ether, acetone, methanol, alcohol, petroleum ether, isopropanol	Inflammable liquids, injurious to health. Explosive vapour.
<b>Acids:</b> sulphuric acid, hydrochloric acid	Highly corrosive liquids.
<b>Hydrogen gas</b>	Highly explosive gas. Generated during electrolysis and during syntheses involving lithium aluminium hydride. May also be used as a raw material in the production of narcotics.
<b>Gamma-butyralactone (GBL)</b>	Clear, watery liquid with glue-like smell.
<b>1, 4-Butanediol</b>	Colourless liquid. Rather oily. Odourless.
<b>Sodium hydroxide</b>	White pellets.

## Search and secure

During the investigation of a site in connection with suspected poisoning, the site should be searched for residues of the agent which may have been used in the poisoning or any information (receipts, medical prescriptions or similar) which may provide information on the particular poison which was used.

When a substance (such as wine, beer etc) is to be sent to SKL for examination for poison, it is extremely useful if equivalent reference material (such as an unopened bottle of the same brand is also sent in a separate package. An accurate description of the incident should be enclosed so that, if possible, the laboratory can be informed of the type of poison which may be involved.



Blood and urine samples from the victim are to be sent for analysis to RMV [The Swedish National Board of Forensic Medicine], Department of Forensic Genetics and Forensic Toxicology, Linköping.

## Securing traces

When investigating illegal laboratories and in cases of poisoning, look for the following types of traces and materials:

### Fingerprints



### Narcotics, alcohol and poisons



### Related materials



### Hair



### Saliva, DNA

e.g. cigarette ends, bottles, cans and gas/face masks



### Tool marks



### Shoe prints and tyre tracks



### Textile fibres



### Digital Evidence



The symbols in the boxes show which tab in Part 2 of the Field Guide to refer to for more information on securing traces.



# Fraud

Forged documents, counterfeit banknotes

Raids in fraud cases usually take place as planned house searches. This makes planning easier than with an emergency crime scene investigation. But even so, many of the points in the checklists are still relevant.

**The checklists are intended to be an aid to memory, and not to replace the investigator's own thought processes.**

## Checklist

1. Get as much information as possible about the crime before you proceed to the scene. Contact SKL before the raid if a forger's workshop is involved.
2. Start a daybook.
3. Take general photographs of the crime scene. Shoot video footage.
4. Make continuous notes of your observations. Ideally, use a voice recorder.
5. Make a sketch. Indicate where traces and comparison samples were collected.
6. Take photographs continuously. Photograph all traces before they are secured. Ideally, use a professional photographer for expert photographing of traces.
7. Search for and secure traces, objects, comparison samples etc which have a bearing on the investigation of the offence.
8. Write a list of items seized as you go along.
9. Digital evidence - secure any IT equipment.

### **Service phone lines**

Handwriting: 010-562 84 01, weekdays 09.00-11.00, 12.30-14.30

Documents: 010-562 84 00, weekdays 08.00-16.30

## Search and secure

With this type of offence, it is important to collect all material which may have been utilised in connection with the forgery/printing.

### Examples of such material include:

Typewritten text  
Samples of handwriting  
Ink and printing ink  
Traces from stapling equipment (staples)  
Printed material  
Films and printing plates  
Wastepaper and cutting waste  
Printed-out material from printer  
Computer material  
Embossed print  
Paper  
Personal documents (passport, ID cards etc)  
Banknotes and other securities  
Copies for decoding  
Photographs for facial identification



## Securing traces

With fraud, look for the following types of traces and materials:

### Saliva



### Fingerprints



### Related materials/pieces of material which fit together



### IT equipment

and associated storage media



# Digital Evidence

## Collecting IT equipment

The vast majority of offences involve IT equipment with data storage capacity. Equipment of this nature requires special processing to avoid altering or destroying stored data.

The most commonly-occurring items of IT equipment are consumer and home electronics such as computers, portable storage media, network equipment, camera equipment, mobile phones, dictaphones, MP3 players, GPS equipment, TV-connected media equipment, games consoles, tablet computers and e-book readers.

In corporate environments, in addition, office equipment such as printers, copiers and faxes may be important to the investigation.

With respect to video surveillance equipment, it may be necessary to collect equipment to gain access to unmodified data.

Please contact your local IT crime investigator, the National Bureau of Investigation's IT crime section or SKL's computer group (010-562 84 02) if you are uncertain as to what ought to be secured or how to go about it.

**The checklists are intended to be an aid to memory, and not to replace the investigator's own thought processes.**

## Checklist

1. Make sure that no suspect or unauthorised person has access to the equipment.
2. Use protective equipment in securing biological traces to avoid the risk of contamination. See also pages 2 and 8.
3. Handle confiscated equipment carefully.
4. Do not start any equipment which is shut down.
5. Contact the IT investigator for advice if the equipment is switched on, if you are not absolutely certain how to proceed.

6. If possible, collect manuals and handbooks for the confiscated equipment, valuable documents, subscription and ownership information, pin codes, camera location maps, contact information for operators and any information on suppliers.

7. Mark the confiscated equipment in a non-destructive way, and mark any cables, batteries etc to make it clear how the associated equipment was connected.

8. Photograph/video the equipment on site. It is strongly recommended that you make diagrams of how the various pieces of equipment were connected together.

9. Note all the actions taken. Make records, for example by photographing or videoing, of anything displayed on the screens when the equipment is seized.

10. Do not carry out any analyses unless you are trained to do so. Contact a specialist if you are in the least bit uncertain.

11. Search for notes with passwords, log-in identities etc.

12. In respect of video surveillance:

- Compare the system time of the equipment and note any deviation from the speaking clock.
- Check with the person in charge of security whether the system should be shut down/stopped to avoid the risk of data being recorded over.
- Films and pictures should be exported from the system without recoding the original recording, since the conversion process may affect the content of the film or image. If this cannot be done, check whether it is possible to make a full backup of data - if not, consider confiscating the equipment, or decide whether a poorer copy of the content is acceptable, given the risk that valuable information may be lost.
- Ensure that the necessary software for playing the secured data is included, if the exported material requires it (propriety format)

Note that certain types of development methods used for examining fingerprints can destroy digitally-stored information.

See also part 2 under 

# Fires

**The checklists are intended to be an aid to memory, and not to replace the investigator's own thought processes.**

## Checklist for investigating the cause of a fire

1. Get as much information as possible about the fire both before you proceed to the scene and when you arrive. Obtain information from the Fire Brigade, from the owner and people living in the property, as well as from neighbours and witnesses.
2. If the fire is still in progress or has recently been extinguished: note down any observations on the way to the fire site. It is worth noting, for example, any vehicles travelling in the opposite direction and persons in the vicinity of the fire site.
3. If the fire is still burning when you arrive: take photographs, video footage and note down the times of all events.
4. Cordon off the area or supplement existing barriers if necessary.
5. Make sure that a list is prepared of the people who enter the fire site.
6. Start familiarising yourself with the site in general as soon as possible after the fire is extinguished. Study the fire damage and the pattern of the fire. Decide whether to call in personnel from SKL or other experts.
7. Preliminary determination of the seat of the fire. Ask the fire officer in charge and the firefighters who were first on scene to assist with this.
8. Rough clear-up. Before beginning the rough clear-up process, the whole property is to be photographed and preferably videoed both externally and internally.
9. Detailed clear-up. Work from the outside towards the centre of the seat of the fire. Photograph all objects found before they are moved. Also photograph and record rooms which have sustained less fire damage and undamaged rooms.
10. Carry out a reconstruction. Replace objects in their original place. Photographs and video the exposed area both with and without the objects.

11. Establish the location of the seat of the fire.
12. Check possible ignition sources.
13. Establish possible causes of the fire.

## Information

It is important to note down as soon as possible what has been said during interviews. A large amount of extremely important information has often to be obtained before a clear-up of the fire site begins. Information on the location of the seat of the fire can sometimes be conflicting, and this is one reason why particular care should be taken when clearing certain areas.

## General familiarisation

Study the fire damage and fire pattern without disturbing the debris from the fire. Try to get a first impression of where the fire may have started. If someone has died in the fire, check whether the deceased was alive when the fire started. Remember that the fire may have been started deliberately to conceal another crime. Discuss the situation with the salvage chief to ensure that he can perform his tasks without interfering with the investigation.

## Preliminary determination of the seat of the fire

The primary space is determined on the basis of information obtained during the extinguishing phase and during the general familiarisation with the site. It is important to remember that this is only a preliminary determination of the seat of the fire, which will be used to decide where a rough clear-up operation can be carried out. Compare your own theory with information obtained.

Main rule: which area has sustained the most fire damage, and which is the lowest point of the fire-damaged area? This is the area where it may be worth looking for the seat of the fire. If the conclusion of the assessment is that there may be more than one seat of the fire, you will have to be particularly observant during the rough and detailed clear-up processes.


## Rough clear-up

Start by taking photographs and video footage inside and out. Then roughly clear the room(s) which you believe to be the primary spaces. Other rooms with peculiar fire patterns should also be investigated. During the rough clean-up operation, larger pieces of material which have fallen down into the area should be removed.



## Detailed clear-up

Work your way from the outside towards the centre of the assumed seat of the fire, and work layer by layer from the top to the bottom. Make notes and take photographs as the excavation progresses. Save any objects found for subsequent reconstruction. Make notes of any electrical apparatus and associated electrical cables found in the seat of the fire. Other objects of interest include the remains of candles, candle wicks, matches etc. Pay attention to any smells. If you suspect arson where a flammable liquid has been used to start the fire, collect any relevant material and pack in fire bags.

See part 2 under 

The detailed clear-up should involve clearing the floor at the seat of the fire and sweeping it clean. This area should then be examined with reference to fire damage and fire patterns.

## Reconstruction

Replace any objects found in their original position. Examine how the objects correspond to the fire pattern on the floor and walls. Photograph and video the cleared area, both with and without the objects. Make a sketch of the room, including any furniture and relevant objects found there.

## Establish the location of the seat of the fire

Guided by whatever has been discovered, establish the seat of the fire. This will include examining the electrical installation.

## Check for possible incendiaries

Record and note any possible incendiaries found at the seat of the fire. Collect the possible incendiaries, to allow an expert to examine them, if necessary. Check any fireplaces, chimneys, chemical products found etc.

## Securing traces

When investigating the cause of a fire, look for the following types of traces:

**Material from the scene of the fire**



**Fingerprints**



**Glass and paint**



**Shoe prints, glove prints and tyre tracks**



**Tool marks**



Access route

**Blood, saliva, DNA**



Blood stains, cigarette ends, bottles etc. with traces of saliva

**Textile fibre, fabric remains**



**Articles of clothing/textile material**



**Related materials/pieces of material which fit together**



The symbols in the boxes show which tab in Part 2 of the Field Guide to refer to for more information on securing traces.

# Explosions

## **Bomb threats, explosions**

The following checklists can be found here:

- For a suspected bomb
- Investigations following explosions
- House search relating to suspected illegal manufacture of bombs and/or explosive substances.

**The checklists are intended to be an aid to memory, and not to replace the investigator's own thought processes.**

## Checklist for a SUSPECTED BOMB

**Only bomb disposal specialists are allowed to deal with and render safe bombs. FAP 208-3.**

- Switch off your radio and mobile phone!
- Do not switch on any lights at the premises!
- Do not approach any closer to the device than absolutely necessary!

1. Before approaching the area, interview the person who has reported the device at a safe location:

- What type of device is involved?
- Where precisely is it located?
- When was it discovered?
- Who made the discovery?
- Does anyone know why the device is there?
- Have any threats been received?
- Has anyone touched the device?
- Does the device give off any smell or sound?
- What is the surrounding area like? (splinters!)

2. Contact the on-duty decision-maker as soon as possible for instructions on setting up any cordons, evacuation and calling in bomb disposal specialists, based on the information you have obtained.

3. Evacuate and cordon off a generous area.

4. Guard the cordoned-off area and wait for the arrival of bomb disposal specialists who will render the bomb safe.

# Checklist for INVESTIGATION AFTER AN EXPLOSION

1. Get as much information as possible about the blast, both before you proceed to the scene and after you arrive. Find out what the area looked like before the destruction occurred. Obtain drawings, photographs etc.
2. Assess the risk of further explosions.
3. Start a daybook.
4. Consider the situation and plan your actions. .
5. Cordon off the area or supplement existing barriers if necessary.
6. Make sure that a list is prepared of the people who enter the crime scene.
7. General familiarisation. Study the damage caused by the explosion. Decide whether or not to call in personnel from SKL or other experts.
8. Preliminary assessment. Determine the type of explosives used, the centre of the explosion, the effects of the blast etc.
9. Photograph and video the area before the start of clear-up operations.
10. Clear the primary detonation site sufficiently to ensure safety.
11. Carry out a detailed clear-up of the detonation site. Biological traces may be important – collect them using methods which prevent contamination. Photograph all objects found before they are moved. Secure all material found in the area. Examine it again at the laboratory. Search for bomb parts. For the purpose of reconstructing the location of objects, a grid pattern may be created and any material found in individual squares packed separately.
12. Also photograph and record any minor damage caused by the explosion, as well as undamaged rooms.
13. Record any craters. Measure and make a note of the slope gradient, diameter, depth, type of soil/substrate.
14. Make a sketch. Indicate where each trace and comparison sample has been collected.
15. Search for and secure traces, objects, comparison samples etc. Search thoroughly for residue of explosive substances and bomb parts.

16. Take photographs continuously. Photograph all traces before they are secured. Ideally, use a professional photographer for expert photographing of traces.

17. Keep a continuous record of seizures.

## Checklist for HOUSE SEARCH RELATING TO SUSPECTED ILLEGAL MANUFACTURE OF BOMBS AND/OR EXPLOSIVE SUBSTANCES

Warning! Take great care during this type of house search. Call in experts to minimise the risk of accidents.

1. Get as much information as possible, both before you proceed to the scene and after you arrive.
2. Decide whether you need the help of bomb disposal specialists, SKL personnel or other specialist experts.
3. Start a daybook.
4. Take general photographs of the site. Shoot video footage.
5. Consider the situation and plan your actions. Biological traces may be important – collect them using methods which prevent contamination.
6. Note down your observations continuously. Photograph continuously. Photograph all traces before they are secured.
7. Make a sketch. Indicate where each object, trace and comparison sample has been collected.
8. Search for and secure traces, objects, comparison samples etc. which may be relevant to the investigation of the crime.
9. Keep a continuous record of seizures.

## Information

It is important to note down as soon as possible what has been said during interviews. A large amount of extremely important information has often to be obtained before a clear-up of the explosion site begins.

## Assess the risk of further explosions

Are there any other explosive charges? Is there a risk of gas leaks? Do not take risks. Ensure that a sufficiently large area has been cordoned off and is under guard. Wait until a more reliable assessment can be made. If necessary, call in experts for a final assessment.

## General familiarisation

Examine the damage caused by the explosion without moving the debris from the explosion. Try to gain a first impression of where the explosion was centred. In the event of deaths, examine the bodies as described in the chapter on violent crime. The victims may be covered in debris from the explosion, which must be collected.

## Preliminary assessment

The preliminary assessment of the type of explosion, the centre of the explosion etc. will form the basis for decisions on where and how a rough clear-up should be carried out.

## Rough clear-up

Start by photographing and videoing the area of damage and the immediate surroundings. The rough clear-up should initially focus on the room(s) which is/are believed to be at the centre of the explosion. During the rough clean-up operation, larger pieces of material which have fallen down into the area should be removed.

## Detailed clear-up

Work your way from the outside towards the centre of the explosion. Make notes and take photographs as the excavation progresses. Save any objects found for subsequent reconstruction. Search for and secure any residue of explosive substances and bombs (pieces of tape, parts of timers etc.). If a bomb sniffer or explosive substance spray is available, you can use these to decide where material should be collected.

The detailed clear-up should uncover the centre of the explosion, so that the crater, if any, can be examined. Record any craters. Measure and make a note of the slope gradient, diameter, depth, type of soil etc. Take photographs.

## Securing traces

When investigating explosions, look for the following types of traces:

### **Material left by the explosion**



### **Fingerprints**



### **Glass and paint**



### **Related materials/pieces of material which fit together**



### **Shoe prints, glove prints and tyre tracks**

Indoors and outdoors



### **Tool marks**

Access route



### **Blood, saliva, DNA**

Blood stains, cigarette ends, bottles etc. with traces of saliva



The symbols in the boxes show which tab in Part 2 of the Field Guide to refer to for more information on securing traces.

**Own notes**

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**Avoid contamination, see pages 2 and 8.**



# Environmental crimes

The area of environmental crime is extremely extensive, and incorporates many different offences. The Field Guide has been limited to the type of environmental crimes where the first police on site can collect samples. On many occasions, such as when major discharges are involved, trained police staff (from technical units and/or environmental investigators working for the Regional Criminal Investigation Department or similar), or sometimes specialists from other authorities and organisations, must be called in. The types of environmental crimes referred to in this section primarily involve documenting events, carrying out preliminary interviews and collecting basic water, soil and comparison samples.

**The checklists are intended to be an aid to memory, and not to replace the investigator's own thought processes.**

## Checklist

1. When you arrive at the scene, get as much information as possible from any persons present. If time allows, carry out a thorough review with forensic technicians or environmental investigators regarding, for example, the scope and purpose of any samples collected and what should be recorded in photographic format. Plan any preliminary interviews at the scene.
2. If necessary, cordon off a sufficiently large area. Consider whether the area needs to be guarded.
3. Get a general idea of the situation. Familiarise yourself with the site, to ensure that you have a rough idea of the area and where you may expect to find contamination.
4. Carry out preliminary interviews at the scene. Find out what has happened, and obtain any relevant information on suspects, vehicles and machinery movements etc.
5. Take general photographs of the site, as well as detailed photographs where necessary. Do not forget to record any vehicle tracks, marks left by rear hoists etc. Shoot video footage.
6. Start making one or more sketches at different scales of the site and/or the area.
7. Make notes, take photographs and add to the sketch on an ongoing basis.
8. Collect samples of the suspected contaminant from areas with the highest suspected concentration. Remember to use the correct sample collection material and packaging. Immediately secure samples from contamination which are about to disperse or disappear.

## Collection of samples

The purpose of this, often preliminary, collection of samples is to establish the existence of a pollutant and find out what type of pollutant is involved. How has the pollutant ended up at the site, who is responsible for the pollution and when did it occur.

Remember that:

- Samples collected in the early stages provide the best opportunity for ascertaining which pollutant is involved
- When collecting samples, ensure that the sample jars and bottles are filled to the brim.
- Additional samples often have to be collected by specially-trained staff. Ensure that they are notified as soon as possible.

## Health and safety issues

Before collecting samples, you should consider what hazardous substances may be present, the risk of exposure to such substances, and what protective measures should be adopted and protective equipment used.

“Acute exposure” means a high dose within a short time. This often happens in cases involving major accidental discharge, explosions etc. These cases normally require special protective equipment, so outside experts must be called in.

“Chronic exposure” means lower concentrations over a longer period of time. The time required for the collection of samples is so short that chronic exposure should not be a problem.

The type of sample collection normally referred to here is not expected to involve any contact with hazardous substances through inhalation or contact with the skin. This means that the only protective gear needed should be appropriate gloves and protective goggles or visors. Depending on the circumstances, it may also be appropriate to wear disposable overalls, helmets and ear protectors.

See also “Collection of samples from environmental crimes” in section 2 under



**Own notes**

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**Avoid contamination, see pages 2 and 8.**

# Wildlife-related crime

**The checklists are intended to be an aid to memory, and not to replace the investigator's own thought processes.**

## Checklist

1. Get as much information as possible, both before you proceed to the scene and after you arrive from any persons present. Also assess what equipment may be needed.
2. If necessary, cordon off a sufficiently large area. Consider whether the area needs to be guarded.
3. Get a general idea of the situation. Familiarise yourself with the site, to ensure that you have a rough idea of the area and what has happened there. NB! Take care not to destroy traces or alter the setting.
4. Start a daybook.
5. Take general photographs of the site. Shoot video footage.
6. Start making one or more sketches at different scales of the site and/or the area.
7. Determine the location of the site, using a GPS or map and compass.
8. Make notes, take photographs and add to the sketch on an ongoing basis.
9. Secure traces. Take photographs of all traces before they are secured.
10. Mark any points of interest, e.g. where a shooter may have stood or a vehicle may have been parked.
11. Keep a continuous record of seizures.
12. Check the crime scene before removing barriers. Make sure that you have not forgotten anything important, such as interview records. Remember that a suspect can enter the crime scene after the barrier is removed. This must not be allowed to destroy the evidential value of the traces.

## Gunshot injuries

If no exit wound is found, the bullet could still be lodged in the animal's body. If the animal is being sent for post-mortem examination, the task of searching for the bullet is left to the veterinary surgeon. Inform the veterinary surgeon of the importance of not damaging the bullet.

## The shooter's position

Try to find the place from where the animal was shot. It may provide the opportunity to assess the direction and distance of the shot. Shoe prints, cartridge cases, cigarette ends and used snuff may also be found there.

## Bullets, cartridge cases, shot and wads

Record where these have been found, and indicate the location of each bullet/cartridge case. Do not pick up bullets and cartridge cases using tools which may leave marks. For example, bullets which have to be extracted from tree trunks etc. must be removed in such a way that no marks are left on the bullet. Leave wet or damp bullets to dry at room temperature. Wrap bullets or cartridge cases individually in kitchen paper and pack in plastic boxes.

## Dog tracks

Record using the same method as for shoe prints. Dog tracks may indicate what breed/type of dog has been used by the perpetrator. Also look out for dog hair.

## Cut trees and branches

Paint from the axe may have been deposited in the cut. Axe or knife marks in wood can sometimes be used to identify a specific tool.

## Transport routes

The transport route may provide answers to certain questions. Ascertain the direction/distance of travel and map coordinates, and draw a sketch. **If a snowmobile** has been used to follow an animal, it is important to record the appearance of the drive track – the drive track pattern and width. Measure the distance between the skis, and the width of the marks left by the skis. The width of the marks is equal to the distance between the outer edge and the inner edge of the ski. Note any traces left by damage or wear to the track.

If the perpetrator has used skis, the ski tracks may provide some clue as to the type of ski involved. Measure the width of the ski track in areas where the snow is packed solid. Measure the diameter of the snow rings on the ski poles and record the shape and pattern. If possible, establish the direction of travel and the number of skiers.

## Vehicle tracks

Sometimes, a perpetrator may park a vehicle at the end of a road or along a forestry road. Try to locate such places by tracking or “backtracking”. Things to look for include shoe prints, cigarette ends and used snuff.

## Poisoning

Predatory mammals and birds of prey may sometimes be poisoned using baited carrion. If carrion is found in the vicinity of a bird-of-prey nest, for example, it may be appropriate to collect samples from the dead animal and from the carrion. It may contain glycol, strychnine, pesticides or other toxic substances.

## Animal DNA

In principal, it is possible to determine the species of all Swedish mammals and birds. Individual wolves, wolverines, lynx, bears and birds-of-prey can be identified. If comparison samples are available, individual identification can be carried out in most cases.

## Suspected individuals and house searches

When a suspect is arrested and a house search carried out, it important to search for material which may prove significant when compared with traces and material collected at the scene of the crime.

Look for the following:

- Clothes and shoes: blood, hair and tissue
- Axes and knives: blood, hair, tissue, compare with any tool marks
- Backpacks: blood, hair, knives, axes and ammunition.
- Weapons and ammunition.
- Vehicles: blood, hair, down, feathers, tyre tracks, track width and damage/wear to the drive tracks of snowmobiles.
- Packaging materials: plastic sacks for comparison purposes, fingerprints and biological traces.
- Chest-freezers: meat samples
- Washing machine: animal fur, blood, remains of tissue in filters and sink u-bends.

## Securing traces

When investigating wildlife-related crimes, look for the following types of traces:

### Weapons and ammunition



### Fingerprints



### Animal fur



### Related materials/pieces of material which fit together

E.g. plastic sacks



### Shoe prints and tyre tracks



### Tool marks

E.g. from knives or axes



### Blood

E.g. from butchered animals and from the slaughter site.  
Blood stains, cigarette ends, bottles etc. which may contain traces of saliva.



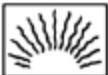
















The symbols in the boxes show which tab in Part 2 of the Field Guide to refer to for more information on securing traces.





# CONTENTS PART 2

<b>Blood, bodily fluids, DNA</b>	
<b>Fibres</b>	
<b>Hair and animal fur</b>	
<b>Finger prints</b>	
<b>Articles of clothing</b> Clothing, bedclothes, shoes	
<b>Shoe prints, glove prints and tyre tracks</b>	
<b>Soil, plants, building materials</b>	
<b>Tool marks</b>	
<b>Glass and paint</b>	
<b>Material from scenes of fires</b> Inflammable liquids, electrical equipment	
<b>Material from explosions</b>	
<b>Weapons</b> Firearms, knives etc.	
<b>Powder residue</b>	
<b>Documents and IT material</b>	
<b>Narcotics, alcohol, foodstuff</b>	
<b>Related materials/pieces of material which fit together</b>	
<b>Collecting samples from environmental crimes</b>	

# General rules for securing biological material

**Follow the rules under "Avoid contamination" on pages 2 and 8.**

When two objects come into contact with each other, there is always an exchange of material between them. This can happen even without actual physical contact between the objects. It can, for example, happen through fibres floating in the air. Another type of contamination can take place when the people handling the materials contaminate them with their own DNA, or with something which they have handled previously.

After a crime has been committed, all exchanges of material, which would then represent contamination, must be avoided throughout the material-handling process – from securing at the crime scene to the comparison examinations in the laboratory.

Use disposable gloves. If possible, avoid touching individual stains/traces. Remember that gloves may cause contamination. Change gloves after touching each individual piece of material, and as necessary. Use disposable materials during preliminary examination and while securing traces. Spread protective paper over surfaces where the equipment will be placed. Separate the garments worn by the victim and the suspect.

Avoid talking, coughing or sneezing in the direction of traces/material. Use a facemask.

## Packaging biological material

Use paper packaging for all biological material or objects carrying traces of biological material. If possible, do not use plastic bags, since any moisture left in these may cause the biological material to rot. Separate outer packaging must be used for collected traces and for clothing obtained from the individuals involved. Do not mix material collected from different individuals, e.g. articles of clothing, in the same consignment.

There are several methods of sealing bags. One of the best methods is to fold over the open end of the bag twice, and seal it with tape. Envelopes should also be sealed with tape. Do not use staples.

## Special safety measures

- Make a clear note if a person from whom the material has been collected is suspected of carrying an infectious disease.
- Prevent contamination by avoiding all contact between traces secured and articles of clothing seized from individuals.
- Packaging containing material secured must not be opened until the examination at the laboratory begins. The only exception to this rule is where damp or wet material has to be dried out.

# Blood, bodily fluids and DNA

## PLEASE NOTE!

Handling any bodily fluid involves health risks. The established procedures must be followed strictly when processing biological material.

Some samples and comparison material must be collected by a doctor or nurse.

All material/packaging must be labelled with the material designation and record book number/K number.

If in doubt about how to secure blood and other bodily fluids, please contact SKL, Biology Unit, on tel. 010-562 81 02.

<b>Type of trace/sample</b>	<b>Processing</b>	<b>Packaging/storage</b>
<b>Blood from removable material</b>	Collect the whole piece of material.	Each piece of material is to be packed in its own paper packaging, which is then sealed with tape. Staples must not be used.  If the material is wet or damp, each piece of material must be placed in an individual plastic bag. The plastic bag is then placed in paper packaging, which is sealed using tape. Remove from all packaging and leave to dry on arrival at the police station. Dispatch to SKL wrapped in paper or inserted into a paper bag or envelope.

<b>Type of trace/sample</b>	<b>Processing</b>	<b>Packaging/storage</b>
<b>Pool of blood</b> <b>Blood, wet (see semen)</b>	Collect blood using cotton buds. If there are large quantities of blood, collect several samples from different areas. If the pool has dried, collect samples from the dry outer edges.	Place the cotton buds in a Biopack bag. Store in a dry, cool place.
<b>Blood in snow/water</b>	Collect samples using several cotton buds	Place the cotton buds in a Biopack bag. Store in a dry, cool place.
<b>Dried blood</b>	Collect blood with cotton buds moistened with a NaCl (salt) solution from a pipette. If there are large quantities of blood, collect several samples from different areas, particularly from the outer edges of the accumulation.	Place the cotton buds in a Biopack bag. Store in a dry, cool place.
<b>Blood samples to be analysed for the presence of narcotics/alcohol</b>	Two 10 ml blood samples in vacutainer tubes with grey tops. (RMV's red test set)	Store the tubes in a refrigerator. Send to: RMV, Avdelningen för Rätts-genetik och Rättskemi, Linköping.

## Semen, saliva and urine

Type of trace/sample	Processing	Packaging/storage
<b>Semen, saliva or urine on removable object</b>	Collect the whole object.	Each material to be placed in its own paper bag. If the material is damp or wet, remove it from the packaging and leave to dry at room temperature on arrival at the police station. Dispatch to SKL in paper bag.
<b>Wet semen, saliva or urine</b>	Collect samples using cotton buds.	Place the buds in a Biopack bag. Store in a dry, cool place
<b>Used condom, semen and secretions</b>	Seal the condom with a clean clamp.	Dispatch to SKL as soon as possible. Place a dry condom in a BioPack bag. Place a wet condom in a plastic container. May be stored in a refrigerator for a short period of time. For longer storage, the items should be frozen.
<b>Dried semen or saliva</b>	Collect using cotton buds moistened with NaCl solution from a pipette. Porous material (e.g. wallpaper): ideally, remove a piece by cutting.	Place the cotton buds in a Biopack bag. Store in a dry, cool place.
<b>Urine sample to be analysed for the presence of narcotics/alcohol</b>		2 x 10 ml tubes, RMV's yellow test kit. Store the tubes in a refrigerator. Send to: RMV, Avdelningen för Rättsgenetik och Rättskemi, Linköping.

## Material without visible traces/stains for DNA analysis

Many types of material used for DNA analysis do not show distinct stains. Traces can be collected from objects which have been used by one and the same person over a long period of time (traces of use) or from objects which someone has handled for a brief period of time (contact traces).

## Securing bodily fluids in connection with sex crimes

Must be secured by a doctor/nurse. Ensure that the medical staff has access to an "Evidence collection kit – sex attacks" or the guide available from SKL's Internet website, [www.skl.polisen.se](http://www.skl.polisen.se)

Ensure that bags are available for collecting clothing. The trace collection kit contains only one bag for the collection/preservation of male/female underpants.

## Processing a suspect

A person suspected of involvement in a sex crime must undergo controlled processing, to ensure that the person cannot destroy evidence before a physical examination has been carried out.

Access to water and visits to the toilet may allow a person to dispose of any biological traces.

A body examination should be carried out as soon as possible. Underpants (male and female) must generally be seized. The "Evidence collection kit – sex attacks" contains a pair of replacement underpants.

Type of trace/sample	Processing	Packaging/storage
Removable objects, such as articles of clothing or weapons	Collect the whole object. Wear a facemask and disposable gloves when handling such objects.	Pack in unused paper bag.

## Material without visible traces/stains for DNA analysis

Many types of material used for DNA analysis do not show distinct stains. Traces can be collected from objects which have been used by one and the same person over a long period of time (traces of use) or from objects which someone has handled for a brief period of time (contact traces).

## Comparison samples DNA profiling

**NB! It is extremely important that the identity of the person providing the sample is confirmed, and that the sample is labelled with that person's name and Swedish civil registration number.**

Type of trace/sample	Processing	Packaging/storage
<p><b>Living persons</b></p> <p><b>Saliva/FTA or blood.</b>  <b>Do not use cotton buds when sex crimes are involved.</b></p>	<p>Use the "Saliva DNA sample" kit. The kit contains detailed instructions.</p> <p>With sex crimes, blood is taken from the complainant for DNA typing (EDTA tube).</p>	<p>Once a digital request for examination has been made, the sample is sent to SKL, using the pre-addressed envelope.</p> <p>The tubes must be stored in a refrigerator and packed in a refrigerated carrier for transport to SKL.</p>
<p><b>Deceased persons</b></p>	<p>Blood in tube.</p> <p>1 cm<sup>3</sup> muscle tissue sample. In the event of decomposition, extract a 1 cm<sup>3</sup> bone marrow sample.</p> <p>Other samples may be required, depending on the degree of decomposition.</p>	<p>The tubes must be stored in a refrigerator and packed in a refrigerated carrier for transport to SKL.</p> <p>Insert tissue samples in to plastic containers. These are to be frozen if they are not transported to SKL on the day of collection.</p>



# Textile fibres

**NB! The risk of contamination is particularly high when securing fibres.**

For example, clothes belonging to the complainant and the suspect must be processed separately, and, using the tape method, fibres must be secured from each set of clothes in separate rooms and by different investigators. Keep a careful record of how the material has been processed and secured, including details of who/where/when.

All material/package must be labelled with material designations and record book numbers. Damp material must be dried before processing.

**Follow the rules on pages 2 and 8 to avoid contamination.**

Type of trace/sample	Processing	Packaging/storage
<b>Fibres on removable objects</b>	Collect the whole object.	In wrapping paper/ carefully sealed paper bags.
<b>Visible threads and fibre pieces</b>	Collect using tweezers.	Place in a folded paper and put in an envelope.  Small samples should be taped to OH film, which is placed in the envelope.
<b>Fibres not visible to the naked eye on large objects (e.g. car seats, sofas)</b>	Cut strips of tape about 150 mm long, and systematically touch these to the whole surface, applying light pressure. Change tape strips frequently. Afterwards, attach the tape strips to OH film, making a note of what part of the object the tape has been applied to, e.g. the front, seat neckrest. Collect a transfer sample from the fabric by pressing a tape strip firmly once against the fabric and mounting it on OH film. Collect a comparison sample as described on the next page.	Pack the OH film to which the tape strips have been fixed in an envelope, using one envelope for each object.

Type of trace/sample	Processing	Packaging/storage
<p><b>Invisible fibres on victim, e.g. on body at the crime scene or during post-mortem examination. NB! There is a risk that disturbing fibres may interfere with other investigations, e.g. shooting distance, DNA. If you are uncertain, contact SKL.</b></p>	<p>Systematically secure areas which may have been in contact with the perpetrator. Use plenty of tape strips and avoid applying each tape strip several times. Leave the tape strips on the surface, mark/number them and make a careful photographic record before removing them.</p>	<p>Fix the tape strips to OH film and place in envelopes.</p>
<p><b>Hair fibre, e.g. head hair to search for fibres left by a balaclava</b></p>	<p>Systematically apply fibre tape throughout the hair</p>	<p>Fix the tape strips to OH film and place in envelopes.</p>
<p><b>Comparison samples (from material which may possibly be a source of fibre transfer, e.g. clothing carpets, furniture fabric)</b></p>	<p>Unless the whole material can be brought in, the preferred method is to clip out a piece of the fabric. If this is not possible, cut or pull out threads. Ensure that samples of all colours are collected.</p>	<p>Tape the material to OH film, and place in an envelope.  If no tape/OH film is available, wrap each piece of material separately, and seal the packaging carefully. Self-sealing packaging should also be sealed with tape.</p>

## Hair and animal fur

**NB! The risk of contamination is particularly great when securing hair samples. Follow the rules on page 4 to avoid contamination.**

All material/packaging must be labelled with material designations and record book numbers.

Type of trace/sample	Processing	Packaging/storage
<b>Hair attached to removable objects</b>	Collect the whole object.	In wrapping paper, paper bag or envelope.
<b>Visible, loose strands of hair</b>	Secure the strands of hair using tape, which is then fixed to OH film.  Single long strands of hair may be collected with tweezers.	Place OH film in envelopes.  Place in a folded piece of paper and place in an envelope.
<b>Comparison samples for morphological investigation</b>	Secure 30 strands of hair pulled from the head (10 from the brow/top of the skull, 10 from the back of the head and 5+5 from the temples), as well as 10 clipped pubic hairs. These should be selected in such a way that they reflect the variation in the individual's hair. Comparison samples must be secured as soon as possible after a crime has been committed.  Around 100 strands of hair should be collected from the back, side, abdomen and possible other areas, depending on colouration and the incident.	Place each sample in a folded piece of paper and insert it into its own envelope.  Place each sample in a folded piece of paper and insert it into its own envelope.

# Fingerprints

There are several methods of securing and developing fingerprints. The methods described below are purely those usable in the field. Remember that fingerprints are perishable. For that reason, it is worthwhile looking for fingerprints even on removable objects directly at the crime scene. Wear two pairs vinyl gloves when securing fingerprints, to avoid leaving your own prints on the material. Take care when handling material, and do not touch “natural gripping” areas. Prints on porous materials are sensitive to processing/handling.

## Visible fingerprints

Type of trace/sample	Processing	Packaging/storage
<b>Fingerprints on removable objects</b>	Photograph the fingerprints on site. Bring the object to the police station. Do not cover the print with tape etc. Remember that there may also be latent/invisible prints on the object.	Pack in such a way that visible and any latent/invisible prints are not damaged.  Place in paper bags, wrapping paper or envelopes.
<b>Plastic prints, e.g. in putty, wax, solidified fat</b>	Take photographs. If the substrate allows, use Mikrosil to take a cast of the print.	
<b>Coloured and etched prints</b>	Take photographs.	
<b>Prints in dust</b>	Take photographs. Lift prints using tape and fix to a black or transparent background.	

Type of trace/sample	Processing	Packaging/storage
<b>Prints in blood</b>	Try to achieve contrast by applying a light source. Take photographs. Non-porous substrates may then be treated with amido black/Acid Yellow 7. Treat porous substrates with ninhydrin.	

### Searching for invisible/latent fingerprints

Type of trace/sample	Processing	Packaging/storage
<b>On removable objects</b>	Bring the object to the police station. In some situations, removable objects may also be processed at the scene.	Pack in such a way that any "invisible" prints are not damaged. Place in paper bags, wrapping paper or envelopes.
<b>Prints on tapes</b>	Bring the objects to the police station.	Fix tapes on soft plastic/plastic sheeting or baking paper. NB! Do not use OH film.
<b>On dry, non-porous surfaces (e.g. glass, metal, plastic, painted wood)</b>	Try brushing fresh prints with magnetic powder. When prints appear, take photographs and lift them with tape, Mikrosil or gelatine film. Brush prints on computer/IT equipment with fluorescent powder. When prints appear, take photographs and lift them with Mikrosil or permadyne. Other materials must be treated at the police station, using alternative methods. If the whole material cannot be collected, cut out relevant areas.	Pack the material in such a way that any "invisible" prints are not damaged. Place in paper bags, wrapping paper or envelopes.

Type of trace/sample	Processing	Packaging/storage
<b>On dry, porous material (e.g. paper, cardboard, unpainted wood)</b>	Bring the objects to the police station. The material should be treated using chemicals.	
<b>On wet surfaces</b>	The material should be treated in a laboratory, using chemicals or alternative methods. If this is impossible, one of the following methods may be used.	
<b>On wet, non-porous surfaces, e.g. glass, metal, plastic, painted wood</b>	As soon as the surface has been dried, use a brush to apply magnetic powder or another powder intended for surfaces which have been wet. When prints appear, take photographs and lift using tape or Mikrosil.	
<b>On wet, porous surfaces, e.g. unpainted wood</b>	Dry the surface under controlled conditions and, using a brush, immediately try to apply magnetic powder or another powder intended for surfaces which have been wet. Photograph any prints which appear.	



# Articles of clothing

## Clothing, bedclothes, shoes

NB! For rules on "Processing of biological material", see page 68. For rules on avoiding contamination, see pages 2 and 8.

Type of trace/sample	Processing	Packaging/storage
<b>Clothing, bedclothes etc.</b>	If possible, collect the whole material. Mark bedclothes to indicate which area was at the top and bottom of the bed respectively.	Pack each object in its own, sealed packaging in accordance with the instructions below.
<b>Totally dry clothes, bedclothes etc.</b>	General, e.g. for the purpose of examining bodily fluids or damage.  For the purpose of investigating gunshot residue.	Pack in paper bags or sacks, fold over twice and seal with tape.  Spread the garment on a clean piece of wrapping paper. Spread a clean piece of wrapping paper on top of the garment and roll up the garment/sheets of paper. Seal both ends of the roll with tape and carefully make a note of the contents on the package.
<b>Wet or damp clothing, bedclothes etc.</b>	General, e.g. for the purpose of examining bodily fluids or damage.	Pack every piece of material in a plastic bag. Place it in paper packaging, and seal with tape. On arrival at police station, remove the material from the packaging and leave to dry at room temperature. NB! Avoid contamination. Follow the above instruction for packing dry material when dispatching to SKL.



Type of trace/sample	Processing	Packaging/storage
<b>Wet or damp clothing, bedclothes etc.</b>	<p>For the purpose of searching for inflammable fluids or teargas.</p> <p>For the purpose of examining gunshot residue.</p>	<p>Immediately pack every piece of material in a fire bag and seal in accordance with the instructions.</p> <p>First air-dry, then process in the same way as dry clothing. See above.</p>
<b>Articles of clothing which are to be examined for fibre-plastic fusion</b>	<p>Collect all articles of clothing, including socks and shoes, from <b>all</b> individuals involved in the crash, even those who have died.</p> <p>Leave damp articles to dry at room temperature.</p>	<p>Pack every piece of dry material in individual paper packaging and seal with tape.</p>
<b>Material shed from clothing</b>	<p>Every individual whose clothing is to be seized should remove their shoes and stand on a piece of clean wrapping paper.</p>	<p>Once an individual has undressed, the paper should be folded up and placed in a paper bag, which is folded up and sealed with tape.</p>
<b>Shoes and boots</b>		<p>In individual bags/sacks, which are folded up and sealed with tape.</p>

# Shoe prints, glove prints, footprints and tyre tracks

## Visible shoe prints

Type of trace/sample	Processing	Packaging/storage
<b>On removable objects</b>	Take photographs of the print, with a graduated scale alongside. Bring the object to the police station.	Pack every object in appropriate paper packaging, to ensure that the print is not destroyed.
<b>Prints on areas such as indoor floors</b>	<p>Take photographs of the shoe print with a graduated scale added, ensuring that the camera is held at right angles to the print. Use a tripod. The print should fill the picture, <b>do not</b> use a wide-angle lens/setting. It is often easier to see prints if low-angle lighting is used.</p> <p>Lift the shoe print using the electrostatic method or gelatine film. Leave wet prints to dry before lifting. Label the film.</p> <p>If the site is extremely dirty/dusty, a better result may be achieved if the same print is lifted several times.</p> <p>If the prints cannot be lifted using the electrostatic method, the shoe may have been wet. If this is the case, lift the print using gelatine film.</p>	Fix the film to the bottom of a cardboard box, with the side carrying the print facing upwards.

Type of trace/sample	Processing	Packaging/storage
<p><b>Prints on areas such as indoor floors, cont</b></p>	<p>Prints left by soles which have been in contact with oil or fat can be brushed with carbon or magnetic powder and then lifted using adhesive film, white gelatine film or white Mikrosil. Fix the film/cast to a piece of paper.</p>	
<p><b>Prints in soil, sand, snow, mud etc.</b></p>	<p>Photograph the shoe print with a graduated scale added at the same height as the print and with the camera at right angles to the print. Use a tripod. The print should fill the picture, <b>do not</b> use a wide-angle lens/setting. The print should be lit from four different directions. Shoe prints in sand should be sprayed with a wax print fixative or regular hair spray before a plaster cast is made. Shoe prints in snow should be sprayed with a special shoe print wax fixative or brushed with reddish snow print powder. Take more photographs. Make a cast using fast-acting plaster. The plaster must be at least 10 mm thick.</p>	<p>Pack so as to prevent the plaster cast cracking.</p>

Type of trace/sample	Processing	Packaging/storage
<b>Prints in blood</b>	<p>Take photographs at right angles to the shoe print, with a graduated scale added. Use a tripod. The print should fill the picture, <b>do not</b> use a wide-angle lens/setting. The print may also be lit by UV lighting to provide better contrast – take more photographs. Prints on non-porous material should then be treated/improved with amido black/Hungarian Red or similar. Porous materials should be treated with DAB. Please take care – DAB is a suspected carcinogenic. Take more photographs.</p>	

Type of trace/sample	Processing	Packaging/storage
<b>On removable material</b>	Search for shoe prints using a strong low-angle lighting. On some material, e.g. newsprint, it may be difficult to see shoe prints even with low-angle lighting. If you know or suspect that an object may contain shoe prints, bring it to the police station for further examination or send it to SKL.	Pack each object in suitable paper packaging to prevent any prints being destroyed.

<b>On non-removable material, e.g. floors, bank counters</b>	<p>Search with strong low-angle lighting. Photograph any prints. Lift the print in accordance with the instructions on the previous page, using either electrostatic powder or gelatine film.</p> <p>Even if no shoe prints have been seen when using low-angle lighting, you should, to ensure that no evidence is lost, roll out film for electrostatic lifting of prints from the relevant surface. Use the same approach as for normal electrostatic lifting. Once any prints have been lifted, the film can be rolled up again.</p>	
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## Visible glove prints

Type of trace/sample	Processing	Packaging/storage
<b>On removable material</b>	Photograph the print on site, with a graduated scale added. Bring the object to the police station.	Pack every object in suitable paper packaging, to ensure that the print is not destroyed.
<b>On non-removable material</b>	<p>Photograph the print with a graduated scale added. Lift the print in accordance with the instructions for visible shoe prints. Label the film before lifting the print.</p> <p>If this method does not work, try brushing the print with carbon or magnetic powder and lifting the print using, for example, fingerprint tape or white Mikrosil.</p>	<p>Pack in accordance with the instructions for visible shoe prints.</p> <p>Fix the tape or cast to a fingerprint card, for example.</p>
<b>Print in blood</b>	Follow the instructions for processing shoe prints in blood.	

## Searching for “invisible” glove print

Type of trace/sample	Processing	Packaging/storage
<b>On removable material</b>	Bring the object to the police station for further examination. See also “Invisible shoe print” on page 86.	Pack every object in suitable paper packaging, to ensure that the print is not destroyed.
<b>On non-removable material, e.g. window frames</b>	Search with strong low-angle lighting. Photograph any prints. Brush with carbon or magnetic powder. When the print appears, take photographs and lift using tape or white Mikrosil.	

## Visible footprints

Type of trace/sample	Processing	Packaging/storage
<p><b>On removable material</b></p>	<p>Photograph the print on site, with a graduated scale added. Bring the object to the police station.</p> <p>If prints are found on the inside of shoes, bring the shoes.</p>	<p>Pack every object in suitable paper packaging, to ensure that the prints are not destroyed.</p>
<p><b>Prints on areas such as indoor floors</b></p> <p><b>Prints may be left by both bare feet and stockinged feet.</b></p>	<p>Photograph the footprint with a graduated scale added and at right angles to the print. Use a tripod. The print should fill the picture, <b>do not</b> use a wide-angle lens/setting. The print can be illuminated using low-angle lighting. Lift the print using the electrostatic method or appropriate gelatine film. <b>NB!</b> Prints lifted using the electrostatic method are sensitive to touch.</p> <p>Prints left by soles of feet after stepping in oil or fat can be brushed with carbon or magnetic powder, and then lifted using adhesive film, white gelatine film or white Mikrosil.</p>	<p>Fix the film to the bottom of a cardboard box, with the side carrying the print facing upwards.</p> <p>Fix the foil/cast to a piece of paper.</p>



Type of trace/sample	Processing	Packaging/storage
<p><b>Prints left in soil, sand, mud, on a bathroom mat etc.</b></p>	<p>Photograph the shoe print with a graduated scale added and with the camera at right angles to the print. Use a tripod. The print should fill the picture, <b>do not</b> use a wide-angle lens/setting. If possible, make a cast using plaster, Dental Stone or some kind of fast-acting plaster. The plaster must be at least 10 mm thick.</p>	<p>Pack so as to prevent the plaster cast cracking.</p>
<p><b>Prints in blood</b></p>	<p>Take photographs at right angles to the shoe print, with a graduated scale added. Use a tripod. The print should fill the picture, <b>do not</b> use a wide-angle lens/setting. The print may also be lit by UV lighting to provide better contrast – take more photographs. Prints on non-porous material should then be treated/improved with amido black/Hungarian Red or similar. Porous materials should be treated with DAB. Please take care – DAB is a suspected carcinogenic. Take more photographs.</p>	

## “Invisible” footprints

Type of trace/sample	Processing	Packaging/storage
<p><b>On removable material</b></p>	<p>Bring the object to the police station for further examination. See also “Invisible shoe prints” on page 86.</p>	<p>Pack every object in suitable paper packaging, to ensure that the prints are not destroyed.</p>
<p><b>On non-removable material, e.g. floors</b></p>	<p>Search with strong low-angle lighting. Photograph any prints. Lift the print using the same method as for visible footprints.</p> <p>If the print is fresh, try brushing it with magnetic powder. Otherwise, the material should be treated using other chemical methods, e.g. with ninhydrin. Add a graduated scale and take photographs of the print.</p> <p>To secure any prints dusty prints or prints left on dusty surfaces, roll out film for electrostatic lifting of prints on the relevant surface. Use the same approach as for normal electrostatic lifting. Once the print has been lifted, the film can be carefully rolled up again.</p>	

## Tyre tracks

Tyre tracks can be secured in the same way as shoe prints. If possible, a track equivalent to at least one revolution of the tyre should be recorded.

For comparison purposes, tyre imprints can be obtained by applying paint or oil to tyres and rolling them across lengths of paper while the tyres are still fitted to the vehicle. Once track prints have been obtained, the prints should be brushed with magnetic powder, for example. The comparison track prints should cover just over one revolution of the tyre. Ideally, the tyre should then be collected and sent in for further comparison.

To measure the track and axle width of a vehicle, measurements should ideally be taken in a place where the vehicle has been stopped and reversed in a different direction.

## Soil, plants and building materials

Type of trace/sample	Processing	Packaging/storage
<b>Soil from a crime scene</b>	Collect about 10 samples. At least 2 samples from the immediate location and 8 samples from a surrounding area, up to a radius of around 3-4 metres. If appropriate, collect samples from different soil depths. Each sample should consist of around 50 ml of soil. Ideally, photographs should be taken of the site.	Pack each sample in a plastic or glass container with a close-fitting lid. Dry out samples which are not being sent to SKL immediately.
<b>Soil from/around shoe prints</b>	Once the shoe print has been secured, leave any soil stuck to the cast in place.  Collect a further 8 soil samples from the surrounding area, as described above.	
<b>Shoes, clothing etc. from a suspect and/or complainant</b>	If possible, collect the whole object. Do not touch any deposits on the objects.	Pack in paper bags or sacks, fold over twice and seal with tape.
<b>Plant material from a crime scene</b>	If possible, collect the whole plant. If the plant has flowering parts or parts which attach themselves easily, make particularly sure that these are included. Ideally, take photographs on site.	Place the plant between folded sheets of newspaper and insert in a paper sack. Dispatch to SKL as soon as possible. If not possible, leave the plant material to air dry. Once dry, it can be placed in a fire bag.

Type of trace/sample	Processing	Packaging/storage
<b>Building materials</b>	Collect representative samples of bricks, breezeblocks etc. Many of these materials give off a lot of dust when samples are collected. Remember the risk of contamination.	Pack in suitable containers. Powder material should be packed in plastic tubes or plastic boxes.
<b>Safe linings</b>	In the event of safe breaking, a sample of the safe lining material should be collected. A couple of cubic centimetres of material are sufficient.	Pack in a container with a close-fitting lid.

# Tool marks

Type of trace/sample	Processing	Packaging/storage
<b>In removable material</b>	Collect the material.	Pack in packaging suitable to the size of the material.
<b>Non-removable material</b>	<p>Preferably, the part of the material where marks have been left should be cut out.</p> <p>If this is not possible, make a cast of the mark using brown Mikrosil.</p> <p>Take a general picture with and without Mikrosil, and enclose with the material.</p> <p>Alternatively, make a drawing showing the location of each mark and how it was orientated.</p> <p>Also collect samples of paint, wood etc. from the substrate. Use a scalpel to remove flakes of paint. NB! Flakes of paint must not be collected using tape.</p>	<p>Pack in packaging suitable for the size of the material.</p> <p>Casts can be attached to fingerprint cards, with drawings made directly on the card.</p> <p>Pack in pergamyn bags or in folded paper inserted into an envelope.</p>
<b>Cutting marks</b>	Cut off (do not use the seized tool) the ends of wires or metal threads which carry marks of cutting. Indicate clearly which end has been cut by the police.	

Type of trace/sample	Processing	Packaging/storage
<b>Tools</b>	Under no circumstances compare the tool with the suspected mark by touching the tool to the mark.	The seized tool should be packed in such a way that the cutting edge or the equivalent is protected against damage. Also consider any colour transfer.

# Glass, paint and plastic

## Glass

Type of trace/sample	Processing	Packaging/storage
<p><b>Glass from crime scene for comparison purposes</b></p>	<p>For use in comparison analysis, remove a shard of glass at least 1 cm<sup>2</sup> in size from each windowpane in the window frame, and pack separately. Where double/triple glazing is involved, collect shards of glass which feature both external surfaces if possible.</p> <p>For the purpose of comparing how shards of glass fit together, all broken glass must be collected. Protect the edges if the shards are to be fitted together.</p>	<p>Pack shards of glass in plastic tubes or plastic boxes.</p> <p>Ensure that the container is tightly sealed!</p>
<p><b>Glass from the crime scene to determine from which side the glass was broken</b></p>	<p>If possible, remove the whole window frame. First, attach any loose shards of glass to the frame using strips of tape.</p> <p>Collect all shards of glass from the floor/ground.</p> <p>If the frame cannot be collected, remove as much glass as possible from the frame. Where double/triple glazing is involved, label each shard to show whether it comes from an inside or outside pane, and preferably which side faced outwards and which side inwards.</p>	<p>Pack in boxes, in such a way that the shards of glass are not damaged.</p>



Type of trace/sample	Processing	Packaging/storage
<p><b>Glass from clothes and shoes</b></p>	<p>Clothes and shoes must be sent to SKL for examination and collection of glass.</p> <p>Collect shards/fragments of glass using tweezers, or by shaking or possibly vacuum cleaning the objects.</p>	<p>Pack clothes and shoes in paper bags and seal the bags with tape.</p> <p>Ideally, small fragments should be collected using black gelatine film, which is then placed in a plastic box.</p> <p>Alternatively, wrap smaller fragments in folded paper and place in plastic boxes or plastic tube.</p> <p>Place larger shards of glass straight into plastic boxes. Ensure that the container is tightly sealed.</p> <p><b>NB!</b> Do not attach glass fragments to tape.</p>

## Paint and plastic

Type of trace/sample	Processing	Packaging/storage
<p><b>Paint from crime scenes and scenes of accidents</b></p>	<p>Use a scalpel to collect flakes of paint from the substrate. If possible, make sure that some of the substrate adheres to the paint. NB! Flakes of paint must not be collected using tape.</p> <p>Comparison paint samples from all layers of paint should be collected from objects involved. Samples which are to be used for comparison purposes must be collected close to areas of damage.</p> <p>Check whether colour transfer both ways has taken place. If so, comparison paint samples must be collected from both objects.</p> <p>Ideally, the whole object should be sent to SKL for search and collection of paint transfers.</p>	<p>Pack in pergamyn bag or in folded paper which is then inserted into an envelope or place in a plastic box.</p>
<p><b>Entire, broken-off paint and plastic flakes/pieces</b></p>	<p>Collect so that they can be fitted together with any remaining paint or plastic in the damaged area of the object. Protect the fracture edges of these flakes.</p>	<p>Pack in plastic box.</p>

Type of trace/sample	Processing	Packaging/storage
<b>Plastic parts</b>	<p>Small plastic parts/fragments</p> <p>Plastic parts which are to be examined for fibre plastic fusion: Take photographs of the position of the plastic part in/on the vehicle/material. If the object is movable, collect the whole plastic part, otherwise divide it as appropriate.</p> <p>Ideally, contact SKL to discuss the matter</p>	<p>Pack in pergamyn bag or in folded paper and insert into an envelope.</p> <p>Place in individual paper bags and seal with tape. Keep the vehicle/all parts of wrecks for any additional vehicle examination by SKL staff.</p>
<b>Graffiti</b>	<p>Seize any spray paint cans, nozzles, gloves, clothes etc. from suspects. Collect paint from the graffiti including, if possible, some of the substrate. Do not use cotton buds!</p> <p>Take photographs of the graffiti and indicate on the picture the areas from which different scrapings were taken.</p> <p>Use a cotton bud dampened in water or ethanol to collect samples from graffiti created using a felt-tip or marker pen.</p>	<p>Place in paper bags. Place scrapings in pergamyn bags or in folded paper and place in envelopes.</p>
<b>Paint and plastic fragments from clothes</b>	<p>Clothes can also be sent to SKL, where they will be examined for paint flakes, which will be secured.</p> <p>Collect paint and plastic fragments using tweezers or by shaking the garment over a large sheet of paper.</p>	<p>Place in pergamyn bags or in folded paper and insert into envelopes.</p> <p>Place the articles of clothing in individual paper bags, and seal with tape.</p>

# Material from fire sites

## Inflammable liquids

Type of trace/sample	Processing	Packaging/storage
	<p>Samples of liquids from a can or bottle can be transferred to a Kimax tube (8 mm glass tube with screw-on lid and Teflon seal). Collect or take photographs of any labels on the bottle and submit with the sample.</p> <p>If a larger volume of liquid has to be sent to the laboratory, a glass bottle with a special lid, a "Noax bottle", can be used.</p> <p>Use cellulose tissue or non-coloured paper without printed patterns (e.g. kitchen/wiping paper) to collect samples of liquids which have spilled onto work surfaces, floors etc. Also collect a clean sample of the paper</p>	<p>The test tube should be placed in a small plastic bag which, in turn, should be placed in a transport container made from impact-resistant plastic with vermiculite. Place the transport container in a cardboard box lined with shock-absorbent material.</p> <p>The bottle should be packed in the same way as the Kimax tube.</p> <p>The paper holding the liquid should be packed in a fire bag which is heat-sealed or sealed temporarily with aluminium tape developed specifically for the purpose. Pack the clean sample in a separate fire bag.</p>

Type of trace/sample	Processing	Packaging/storage
<p><b>Solid material from fire site</b></p>	<p>Collect samples from areas where you suspect that inflammable liquids may be present. Please remember the risk of contamination when collecting samples. If you are not using disposable tools, the tools must be cleaned before the next sample is collected. The sample volume should be about 1 litre. For the purpose of analysis, the Duobag must contain at least half a litre of air.</p> <p>If possible, collect a clean sample from an area you believe is free from volatile fluid, e.g. unburned areas of carpet, sofas, mattresses etc. The purpose is of this is to exclude the possibility that the substance found comes from the material itself. Ideally, the clean sample should be collected before any other samples.</p> <p>If the sample contains objects with sharp edges, e.g. glass fragments, nails etc., the fire bag may be damaged in transport. Wrap this kind of material in cellulose tissue or uncoloured paper without printed patterns (e.g. kitchen paper) before placing it in the fire bag.</p> <p>A clean sample of the paper must be packed in a separate fire bag.</p>	<p>Place the bags in a cardboard box lined with shock-absorbent material and send to the SKL as soon as possible. If the box cannot be sent to the laboratory immediately, it should be placed in refrigerated storage.</p> <p>Pack the clean sample in the same way as the other samples.</p>

Type of trace/sample	Processing	Packaging/storage
<p><b>Clothes etc. suspected of containing inflammable liquids</b></p>	<p>Articles of clothing etc. must be placed in fire bags as soon as possible. Ensure that there is at least half a litre of air left in the bag.</p> <p>Material used for wiping hands and other body parts are not examined.</p>	<p>Pack the material in the same way as solid material from fire sites, see previous page.</p>

## Electrical equipment etc.

When investigating fires where the suspected source is electrical equipment, the investigation of the scene of the fire is extremely important. This also applies in cases of suspected arson, where an investigation is required to exclude electrical goods as a possible cause of the fire. Contact SKL for advice on the best way to proceed.

Type of trace/sample	Processing	Packaging/storage
<b>Electrical cables</b>	Where a short-circuit, loose contact etc. is suspected, cut off the damaged section of electrical cable, including some of the undamaged cable	Pack in a cardboard box with filling material.
<b>Electrical installation - fittings</b> <b>Wall sockets, switches, connection boxes etc.</b>	Remove the fitting, as well as part of the surface to which it has been fitted (wall panel etc.). Do not take the fitting apart.	Pack in a cardboard box with filling material.
<b>Electrical goods, e.g. cookers, washing machines, heating units, distribution boxes</b>	Remove the whole appliance without touching the controls. Ideally, bring the connection box to which the equipment is connected. If the cable has to be cut, this is best done at the connection box or some distance away from the appliance. If larger pieces of equipment are involved, please contact SKL for advice.	Pack in a cardboard box with filling material.

**Own notes**

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**Avoid contamination, see pages 2 and 8.**



# Material from explosions

NB! Safety is always more important than collecting evidence. Always call in specially-trained personnel to deal with explosions.

Type of trace/sample	Processing	Packaging/storage
<b>Explosive substances, e.g. dynamite and plastic explosives</b>	Keep calm and do not get stressed. Safety is paramount! If large quantities of explosive material are available, only pea-sized pieces need to be sent to SKL for examination.	Pack in plastic boxes with close-fitting lids.
<b>Explosive substances, e.g. TATP or HMTD</b>	Seek advice from specially-trained personnel. If possible, collect individual crystals using a plastic spoon, cotton bud or wooden stick.	Pack in plastic boxes with close-fitting lids and head-sealed fire bag. NB! Only a few crystals.
<b>Explosive substances, e.g. powder and pyrotechnic charges</b>	Seek advice from specially-trained personnel. If possible, collect small amounts.	Pack in plastic boxes with close-fitting lids and head-sealed fire bag.
<b>Chemicals and liquids</b>	Seek advice from specially-trained personnel.	
<b>Explosives residue</b>	Start by collecting a clean sample using a cotton glove/pad moistened in acetone and on the sampler.  Dampen a cotton glove or pad with acetone. Wipe over surfaces which you suspect may be contaminated with the explosive substance. You can, in addition, wipe over the area with a dry cotton glove.  NB! If you suspect that the substance may be TATP, use water instead of acetone.	Pack in heat-sealed fire bags.

Type of trace/sample	Processing	Packaging/storage
<b>Detonators</b>	<p>Unexploded and/or home-made detonators must be dealt with by specially-trained personnel.</p> <p>Collect all fragments from exploded detonators, fuses, wire etc. found at the crime scene.</p>	Pack in heat-sealed fire bags or plastic boxes.
<b>Hand grenades</b>	<p>Unexploded hand grenades must be dealt with specially-trained personnel.</p> <p>Collect all fragments from detonated hand grenades, safety handles and pins etc. found at the crime scene.</p>	Pack in heat-sealed fire bags or plastic boxes.
<b>Explosives wrappers</b>	Collect all intact explosives wrappers and wrapper fragments found at the crime scene.	Pack in heat-sealed fire bags or plastic boxes.
<b>Other material to be investigated for the presence of explosive substances</b>	If possible, bring/dispatch whole pieces of material to SKL.	Pack in heat-sealed fire bags or plastic boxes.

## Processing a suspect

Individuals and material suspected of having been in contact with explosive substances must be processed under extremely clean conditions. The following rules must be obeyed:

1. The police officer dealing with a suspect or material from a suspect must not have been in contact with any type of explosive substance, detonators, firearms, ammunition or scenes of explosions.
2. The police officer must not work operationally with weapons.
3. Suspects must not be transported in vehicles which have been used to transport explosive substances, firearms or individuals who handle such objects.
4. Gloves must be used during the processing of individual pieces of material which are to be sent to SKL for examination for the presence of explosive substances. Contamination risk!

Type of trace/sample	Processing	Packaging/storage
<b>Clothing</b>		If possible, pack in heat-sealed fire bags.
<b>Explosives residue on hands</b>	Wipe the person's hands with a glove or pad moistened with acetone.  Collect residue from under the nails, using a toothpick.	Pack in heat-sealed fire bags.

**Own notes**

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**Avoid contamination, see pages 2 and 8.**

# Weapons

Firearms, knives etc.

NB! In accordance with FAP 446-1, all firearms, bullets and cartridges collected in connection with a crime must be sent to SKL for comparison with the weapons trace register. This also includes shotguns and cartridges for this type of weapon.

**Firearms, bullets and cartridge cases should ideally be collected by or under the supervision of a forensics expert. Firearms should always be handled as if they are loaded.**

The following measures are primarily intended to facilitate transport to a technical unit.

Type of trace/sample	Processing	Packaging/storage
<p><b>Firearms found or received</b></p>	<p>Keep calm and do not get stressed. Safety is paramount!</p> <p>Take photographs of the weapon at the location where it was found: where and how was it positioned?</p> <p>Do not touch the weapon unless you are wearing gloves. Remember fingerprint evidence!</p> <p>Always handle the weapon with the barrel facing in a safe direction.</p>	<p>Wet or bloody weapons must be dried at room temperature before they are packed in a suitable cardboard box.</p> <p>Provided that no other examinations such as DNA, finger prints etc. are to be carried out, weapons found immersed in water should be drenched in plenty of thin lubricating oil as soon as possible, and then dispatched to SKL. The barrel, chamber/cylinder and bolt, in particular, should be treated with oil. The purpose of this is to prevent the oxygen in the air from coming into contact with the metal, since this will cause the metal to oxidise (rust). This can damage trace details.</p>

Type of trace/sample	Processing	Packaging/storage
<b>Semi-automatic pistol</b>	<p>Point the weapon in a safe direction.</p> <p>Remove the magazine, leave the cartridges in the magazine.</p> <p>Pull back the slide and engage the safety catch, if possible.</p> <p>Remove any cartridges from the chamber.</p> <p>Check that the chamber is empty.</p>	
<b>Revolvers</b>	<p>Point the weapon in a safe direction.</p> <p>Mark the position of the cylinder, using a felt-tip pen (on both sides of the frame).</p> <p>Hold the hammer in the cocked position and pull the trigger.</p> <p>Keeping control of the hammer, allow it to move forward slowly about 10 mm.</p> <p>Release the trigger.</p> <p>Slowly bring the hammer forward into its resting position.</p>	
<b>Rifles</b>	<p>Point the weapon in a safe direction.</p> <p>Move the handle of the bolt upwards and pull the bolt back, releasing the safety if necessary.</p> <p>Remove the cartridge case and cartridge.</p>	<p>Check that the chamber is empty.</p> <p>Remove and empty the magazine.</p>

Type of trace/sample	Processing	Packaging/storage
<b>Double-barrelled gun</b>	<p>Point the weapon in a safe direction.</p> <p>Break open the weapon.</p> <p>Some weapons have ejectors which eject the cartridge cases. Make sure you know where they land!</p> <p>Note down the markings and location of cartridges/cartridge cases and remove them from the weapon.</p>	
<b>Other types of firearm</b>	<p>Consult a weapons expert, in the first instance a forensics expert or SKL. Alternatively, consult a weapons instructor, weapons dealer, military personnel etc.</p>	
<b>Bullets and cartridge cases</b>	<p>Bullets and cases must not be touched by tools which leave marks (such as pliers and metal tweezers).</p> <p>Damp or bloody material should be air dried at room temperature. Rust or oxidation may destroy traces.</p> <p>Remember that there is a risk of infectious diseases being transmitted by material covered in blood.</p>	<p>Wrap individual bullets in kitchen paper, for example, and pack in plastic boxes.</p> <p>Any notes should be made on the box, never on the bullet/case.</p>

Type of trace/sample	Processing	Packaging/storage
<p><b>Bullets embedded in objects</b></p>	<p>Take photographs of the object containing the bullet at the scene, along with a graduated scale or other object which can be used as a reference for size. Take both general and detailed pictures.</p> <p>If possible, collect the whole object.</p> <p>If this is not possible, detach the area holding the bullet.</p> <p>Leave plenty of material around the area where the bullet is located.</p> <p>If the bullet must be removed on site, carefully remove the material around the bullet, so that the bullet can be removed without touching it.</p> <p>If possible, avoid damaging the entry hole.</p>	
<p><b>Knives , axes, hammers etc.</b></p>	<p>Tie down the object inside a cardboard box to ensure that it does not move during transport. Do not use tape.</p>	



# Powder residue

NB! Powder residue on hands must be secured as soon as possible, and no later than 3 hours after the shooting. On a dead person, particles can be secured after more than 3 hours.

<b>Type of trace/sample</b>	<b>Processing</b>	<b>Packaging/storage</b>
<b>Powder residue on hands</b>	Use the appropriate kit containing instructions, incident report sheet and sampling material. Follow the instructions carefully and use one kit for each person to be investigated.  Kits are available from Nordkrim.	Place the containers with the samples, as well as the incident report sheet, in the plastic bag included in the kit.
<b>Powder residue on clothes</b>	Handle the garment as little as possible before sending it to SKL.	Spread the garment on a piece of clean wrapping paper. Place a piece of clean wrapping paper on top of the garment and roll up the garment/paper sheets. Seal both ends of the roll with tape and make a detailed note of the content on the roll.



# Documents, typewriters and printing equipment

Type of trace/sample	Processing	Packaging/storage
<p><b>Handwritten documents</b></p>	<p>Collect original documents and any available comparison handwriting. Try to locate as much comparison handwriting as possible.</p> <p>Good-quality photo copies are useful, both with respect to the handwriting at issue and the comparison handwriting, although original documents are always preferable.</p> <p>Signatures at issue must, however, always be originals.</p>	<p>Pack documents flat in individual plastic pockets/envelopes and label them.</p> <p>Do not mark or fold the document. Do not attach staples, labels or tape to the document.</p> <p>Remember not to write on the envelope after you have inserted the material into it. Doing so would create relief patterns on the document.</p> <p>Remember that the document may also contain relief patterns which may be relevant as evidence. See instructions under “paper containing relief writing”.</p>
<p><b>Personal documents, such as passports, driving licenses, ID documents</b></p>	<p>Collect any personal documents you suspect may be falsified. Dispatch these to SKL for examination for authenticity and comparison with other forgeries.</p>	<p>Pack in accordance with the instruction for handwritten documents.</p>

<b>Bank notes</b>	Collect any banknotes you suspect may be counterfeit. Dispatch these to SKL for examination for authenticity, comparison with other counterfeits and registration.	Pack in accordance with the instructions for handwritten documents.
<b>Altered documents, where the text has, for example, been erased or overwritten</b>	Collect the original document. Photocopies are not normally acceptable.	Pack in accordance with the instructions for handwritten documents.  Remember not to write on the envelope after you have inserted the material into it. Doing so would create relief patterns on the document.  Remember that the document may also contain relief patterns which may be relevant as evidence. See instructions under "paper containing relief writing".
<b>Forged documents, printing equipment, cut waste, printed waste, ink etc.</b>	First contact SKL for advice. Collect any documents you suspect of being forged, as well as all material which you suspect may have been used in the printing process.	Pack all documents in accordance with the instructions for handwritten documents.  Protect printing plates and film from scratches or any other type of damage.
<b>Documents produced using a printer, photocopier or typewriter</b>	Collect any documents which may be relevant to the investigation.	Pack in accordance with the instruction for handwritten documents.

<p><b>Copied/printed documents for comparison with copies from the photocopier/printer at issue</b></p>	<p>Take a series of copies, alternatively print a number of pages on the printer.</p> <p>In some cases, it may be appropriate to examine the photocopier/printer. Contact SKL for advice.</p>	<p>Pack in accordance with the instructions for handwritten documents.</p>
<p><b>Older typewriters. Examination of typed text for comparison purposes</b></p>	<p>Contact SKL.</p>	<p>Contact SKL.</p>
<p><b>Paper with relief print, text through-printed from an overlying sheet</b></p>	<p>Collect all sheets of paper which you suspect may contain relief print. When examining the sheets, use low-angle lighting only. Please note that tracing the text with a pencil, for example, may render further examination impossible.</p>	<p>Pack pads and sheets of paper in such a way that they are protected from further pressure. Place the material at issue between two sheets of cardboard, for example.</p>
<p><b>Fitting together a torn document</b></p>	<p>Collect all pieces which you suspect may have come from the document in question.</p>	<p>Pack in accordance with the instructions for handwritten documents.</p>

# IT, audio, video and photographic equipment – general instructions for equipment and stored data

For assistance or advice, please contact the IT crime investigators, the IT Crime section at the National Bureau of Investigation or SKL.

Please contact SKL for further instructions before dispatching seized and original documents to SKL.

## For sound and picture material

1. Make back-up copies/examination copies if the nature of the material is such that this is possible.
2. Examine the material (using the copies). If possible, define and specify the scope of the material which is to be analysed.
3. If possible, note down file names, file type and start/end times for sections which are to be analysed or processed. For analogue audio recordings or picture material, please note the start/end times as indicated by your own timing equipment. Alternatively, make a note of the time code on the video image.
4. For certain types of examination, the recording equipment, comparison material etc. must also be sent in.
5. Under normal circumstances, please dispatch the original material to SKL.

IT /data material

## Processing, packing, transport and storage of IT equipment

### Processing

Please take all the necessary care and precautions with respect to temperature, atmospheric humidity, exposure to light, dust, strong magnetic fields etc.

### Packing, transport and storage

**The following applies specifically to uncovered electronic equipment:**

Approved\* screening, anti-static packaging must always be used nearest to the material, e.g. hard disks, circuit cards, components etc.

**The following applies to all IT-related equipment and material:** shock-absorbent layers should consist primarily of conductive or low-charge material. If that is not possible, use untreated single-faced corrugated cardboard, kraft paper etc.

Do not use packaging such as Styrofoam, plastic beans or bubble wrap.

Outer packaging must be made from corrugated cardboard or paper.

There is a wide choice of anti-static packaging. Please check that the packaging is approved and has the desired properties, i.e. is screening, conductive or low-charge.

Thin media, such as CDs and DVDs, memory cards etc. should be placed in packaging which protects them against breakage and knocks.

\*Approved products have been tested by SP – the Technical Research Institute of Sweden.

## **Audio / Video / Picture material**

# Processing, packing and storage of video and audio tapes

## Processing

Ensure that the tapes cannot be recorded over unintentionally (break off the plastic tab) and make a note that this has been done. The tape must not be played unnecessarily. Do not play it at all if it appears to be dirty, damaged or worn.

## Packing, storage

Tapes must be stored at normal room temperature, and must be protected from high atmospheric humidity and magnetic fields.

Tapes are sensitive to knocks and blows and must, as with IT material, be packed with dust-proof packaging nearest the product.



## **Audio / Video / Picture material**

Processing messages left with telephone answering service providers, the iq-svar answering service etc.

### **Processing**

Find out the telephone number and code for the telephone answering service, not the PIN code for the phone or the SIM card. Contact SKL as soon as possible, since messages are erased after a certain amount of time.

### **Packing, storage**

Tapes must be stored at normal room temperature, and must be protected from high atmospheric humidity and magnetic fields.

Tapes are sensitive to knocks and blows and must, as with IT material, be packed with dust-proof packaging nearest the product.

**For telephone answering machines with built-in digital memory, please contact SKL.**

## Processing, packing and storage of other audio, video and picture-related material

### Processing

See page 118.

### Packing, storage

See page 118.



## Narcotics

### Narcotics, alcohol and foodstuffs

Type of trace/sample	Processing	Packaging/storage
<p><b>Traces of narcotics, swabbing surfaces</b></p>	<p>Cotton buds should be the first choice for swabbing surfaces. Alternatively, cotton or sterile pads may be used. Dampen with chemically pure alcohol diluted to around 80 percent ethanol by volume. Swab the surface.</p>	<p>Pack in tightly-sealed plastic bags or containers. Mark clearly on the packaging and the analysis order that the material is being submitted for identification of traces. Pack separately from all other material to avoid contamination.</p> <p>Collect any unused swabbing material and alcohol solution, and submit to SKL as “blank samples” for background analysis. Label this “blankprov” and pack separately.</p>
<p><b>Powder</b></p>		<p>Pack in tightly-sealed packaging, e.g. Ziploc bags.</p>
<p><b>Plant material/mushrooms</b></p>	<p>Plant material should be air-dried before packing and dispatched for examination. Remove roots and soil.</p> <p>Suspected khat should not be dried out.</p>	<p>Khat should be packed fresh in cardboard boxes or paper bags. Other plants should be air-dried and then packed in cardboard boxes or paper bags. Contact SKL if you are submitting mushrooms and cacti, or if a major cannabis plantation has been discovered.</p>

Type of trace/sample	Processing	Packaging/storage
<b>Liquids</b>	Ensure that the bottle/can is tightly sealed.	Pack in welded plastic bags. Place the sample in a cardboard box and fill any empty space with vermiculite (absorbent material).
<b>Pipes</b>	Cover the bowl of the pipe with aluminium foil (not tape) if it contains burned material.	Pack each pipe in individual plastic bags, and seal carefully.
<b>Hazardous materials</b> <b>Syringes and needles</b> <b>Unidentified liquids</b> <b>Wads</b> <b>Material which has been held in the mouth, swallowed or inserted into a body cavity.</b>	<p>NB! Please remember the risk of contracting HIV and hepatitis. Wear protective gloves.</p> <p>If a syringe contains a liquid, pull the plunger backwards to prevent the syringe leaking during transport.</p> <p>Alternatively, transfer the liquid into a test tube (e.g. a Kimax tube) with a tightly-fitting screw lid.</p> <p>Syringes and needles should not be sent to SKL for examination if the case involves other narcotics.</p>	<p>Pack in tightly-sealed packaging, e.g. Ziploc bags or containers. Please see instructions for fluids above. Pack syringes and needles in hard, tightly-sealed packaging, e.g. test tube transport tubes. Ideally, detach needles from syringes before packing. Mark the pack with a yellow label to indicate risk of infection, HIV/hepatitis.</p> <p>Always indicate clearly on the packaging and the analysis order that risk material is involved, even if the material has been repackaged.</p>

Type of trace/sample	Processing	Packaging/storage
<b>Faeces</b>	If the material has been found in faeces, ensure that it is washed in a special washing machine intended for the purpose.	<p>Always indicate clearly on the packaging and the analysis order that risk material is involved, even if the material has been repackaged.</p> <p>Pack risk material separately from other material sent for examination, to avoid contamination.</p>
<b>Clothing</b>	<p>The clothes may be vacuum-cleaned if there is no risk that the vacuum cleaner has been contaminated with narcotics.</p> <p>NB! The clothes must not be vacuum-cleaned if they are to be searched for other material, such as hair and fibres. If this is the case, dispatch the whole garment to SKL.</p> <p>If there are visible, dried-on stains on the clothes, the first choice should be to collect the whole garment. Alternatively, the stained section may be cut from the garment.</p>	<p>Pack in bags or sacks, fold twice and seal with tape.</p> <p>For more information, see the section on <b>Articles of clothing</b></p>

## Pharmaceuticals and doping agents

Type of trace/sample	Processing	Packaging/storage
<b>Tablets and capsules</b>	<p>Also collect boxes, blister packs etc.</p> <p>NB! If large quantities of material have been seized, please consult SKL on collecting random samples.</p>	<p>Place loose tablets and capsules in Ziploc bags, and not loose in envelopes.</p> <p>Also submit boxes, blister packs etc. to SKL when ordering an analysis. Do not position labels in such a way that they cover the text on boxes etc.</p>

## Alcohol

Type of trace/sample	Processing	Packaging/storage
<b>Mash, i.e. cloudy more or less fermenting liquids or clear liquids with a deposit of yeast cells</b>	<p>Mix as thoroughly as possible before collecting samples. The deposit of yeast and plant material, if any, should be included in the sample as well. Size of sample: 50-100 ml. In emergencies, a few millilitres will be sufficient.</p>	<p>Place the material in plastic bottles, preferably made from HD polythene, with closely-fitting stoppers. Do not use glass bottles. Fill no more than half the bottle, and compress the bottle as far as possible before fitting the stopper. Ideally, freeze the samples if they cannot be dispatched immediately. Send as business mail and ensure that the samples are not held up in the postal system over weekends/public holidays.</p>

Type of trace/sample	Processing	Packaging/storage
<p><b>Spirits, i.e. clear liquids without deposits, which smell of alcohol.</b></p>	<p>Mix as thoroughly as possible before collecting samples. Size of sample: 50-100 ml. In emergencies, a few millilitres will be sufficient.</p> <p>If the material is to be dispatched to SKL, the following rules apply for taking samples:</p> <p><b>Up to 10 pieces of material:</b> Dispatch all material for analysis.</p> <p><b>11-100 pieces of material:</b> Assess, possibly in consultation with SKL or the prosecutor, how many pieces of material should be analysed.</p>	
<p><b>Activated charcoal</b></p>	<p>Size of sample: 50-100 ml</p>	<p>Pack in bottle or tightly-sealed plastic bag.</p>



## Foodstuffs

Type of trace/sample	Processing	Packaging/storage
<b>Foodstuffs</b>		Pack in tightly-sealed containers or plastic bags, preferably heat-sealed. Foodstuffs should be stored in a freezer before being dispatched to SKL. Pack in Styrofoam packaging and ensure that the package is not held up in the postal system over a weekend or public holiday.
<b>Drinks</b>	Ensure that the bottle/can is tightly sealed.	Pack in heat-sealed plastic bags. Place the sample in a cardboard box and fill any empty space with vermiculite (absorbent material).

## Related materials/pieces of material which fit together

With any type of crime, it is always useful to search for an association between different pieces of material. This may involve material found at the crime scene, as well as on the suspect. During a crime scene investigation, it is also important to look out for any material which may later be used for comparison.

To avoid contamination and damage to the edges of fractures and tears, material from the crime scene **must not** come into contact with seized material before a comparison examination has been carried out by a technical unit or SKL.

Type of trace/sample	Processing	Packaging/storage
<p><b>Paper</b> <b>Torn, cut, torn from a pad etc.</b></p>	<p>Collect every piece of paper which may have been brought to the crime scene by the perpetrator. If the perpetrator appears to have torn a sheet of paper from a pad, collect the pad. When searching the house of a suspect, keep a lookout for matching sheets or pieces of paper.</p>	<p>Pack each piece of paper flat and in individual envelopes, which are then sealed. Label the envelope before the piece/sheet of paper concerned is inserted into it.</p> <p>Do not mark or fold the paper. Do not attach any staples or paperclips to it. Do not attach labels or tape to the paper.</p>
<p><b>Plastic bags, sacks</b></p>	<p>Collect any plastic bags and rolls of plastic bags which may have been left by the perpetrator. Collect all types of plastic bags found during house searches carried out as part of investigations into narcotics offences. Remember that each bag is an individual item. Do not tear any bags off a roll.</p>	<p>Plastic bags may be packed in envelopes, bags, cardboard boxes etc.</p>

Type of trace/sample	Processing	Packaging/storage
<b>Plastic film, aluminium foil</b>	<p>Collect pieces and rolls of film which appears to have been left behind by perpetrator. Handle edges of film with care.</p> <p>Collect rolls of film of all types when searching a property in relation, for example, to a case involving narcotics.</p>	<p>Pieces and rolls of film can be packed in envelopes, bags, cardboard boxes etc.</p>
<b>Tape, rolls of tape</b>	<p>Collect pieces, strips and rolls of tape which may have been left by the perpetrator. Collect rolls of tape of all kinds during house searches.</p> <p>Pieces and strips of tape which have to be detached from a substrate during collection should be attached to baking paper or OH film. Treat the ends of the tape with particular care.</p>	<p>Pieces and rolls of tape can be packed in envelopes, bags, cardboard boxes etc.</p>
<b>Glass</b>	<p>Collect shards of glass found at, for example, the scene of a hit-and-run accident.</p>	<p>Pack smaller shards of glass in plastic tubes or plastic boxes. Larger shards can be packed in cardboard boxes.</p>
<b>Clothing, fabrics, torn clothing, pieces of fabric</b>	<p>In cases involving rape and other types of violent crime, collect torn articles of clothing and pieces of fabric.</p>	<p>Pack in paper bags or sacks, fold over twice and seal with tape.</p>

<b>Electrical cables</b>	Collect electrical cables when investigating cases involving explosions and fire. Take care not to damage the ends. Keep a lookout for electrical cables when searching the house of a suspect.	Pack in cardboard boxes containing filling material.
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Type of trace/sample	Processing	Packaging/storage
<b>Broken tools</b>	Collect parts from broken tools at the scene of a break-in, for example. Keep a lookout for damaged tools when searching properties.	Pack in such a way that the fracture edges are not damaged. Ensure that the fracture edges cannot rust during storage.
<b>Paint flakes</b>	Collect paint flakes using tweezers.  Collect paint flakes which have come loose completely so that they can, if possible, be matched to any paint remaining in the damaged area of the object. Protect the fracture edges of these flakes.	Pack in pergamyn bags or folded paper and place in envelopes or plastic boxes.



## Collection of samples in relation to environmental crimes

The type of substance suspected and the medium into which it has been discharged determines what type of sampling equipment should be used. More detailed instructions can be found in the "Environmental Baths" with "Environmental Kits" developed for the purpose. The Environmental Kits contain most of the equipment required for the collection of samples in individual media. For example, the Environmental Kit intended for collection of samples which need to be refrigerated contains insulating/shock-absorbent outer packaging and a space intended for a freezer block. Please note that some types of substances must be dispatched for examination the same day to a laboratory other than SKL's. These include dead fish, oxygen-consuming substances, bacteria and viruses, plant nutrients and pH. Contact SKL, the Fire Chemistry, Environment and Oil Group, as soon as possible for more information.

Type of trace/sample	Processing	Packaging/storage
<b>Lumps of oil or thick oil on the water surface</b>	Collect samples of around 100 ml in glass bottles. A wide-necked bottle (Environmental Kit D) is required when dealing with viscous oils. Concentrate first on lumps and areas of thick oil. Remove as much as possible of the water which has entered the bottle. Leave a gap of at least 20 mm between the contents of the bottle and the underside of the lid.	Place the bottle in a transport container packed with vermiculite. Place the container in an outer box. Dispatch the samples to SKL by the fastest possible method. If the samples cannot be dispatched the same day, store them in a refrigerator at a maximum temperature of +4° Celsius.

Type of trace/sample	Processing	Packaging/storage
<p><b>Thin film of oil on water surface</b></p>	<p>Use the absorbent Teflon cloth found in Environmental Kit E. Sweep the cloth across the water surface, preferably for a minute or two. The best way to do this is to use a fishing rod, fishing line and clothes peg to hold the cloth.</p> <p>Once you have done this, insert the cloth into a 100 ml wide-necked glass bottle (Environmental Kit D100). Do not under any circumstances touch the cloth with your bare hands – use disposable gloves. Pour out as much of the remaining water as possible.</p>	<p>Place the bottle in a transport container. Place the transport container in an outer box. Dispatch the samples to SKL by the fastest possible method. If the samples cannot be dispatched immediately, store them in a refrigerator at a maximum temperature of +4° Celsius.</p>
<p><b>Organic substances (non-metallic)</b></p> <p><b>In lakes, watercourses, groundwater and surface water systems etc.</b></p>	<p>Collect samples in glass bottles (Environmental Kit A1 or A2). Use disposable gloves. Try not to include the surface film on the water in the sample. Move the bottle with the neck facing in the direction of the water current and fill the bottle completely. The size of the sample should be at least 1 litre – if this is not possible, use a smaller bottle. If you are unsure about the substances involved, collect two litres. When collecting samples of groundwater or from surface water systems, a water sample collector (Bailor collector, Environmental Kit C) may be used.</p>	<p>Pack with freezer block.</p> <p>Dispatch to SKL by the fastest possible method. If the samples cannot be dispatched the same day, store them in a refrigerator at a maximum temperature of +4° Celsius.</p>



<b>Type of trace/sample</b>	<b>Processing</b>	<b>Packaging/storage</b>
<p><b>Organic substances (non-metallic) in soil or ash</b></p>	<p>Sample paper is to be used to collect a minimum of 5 surface samples taken from across the whole contaminated area at a depth of 0-50 mm. The finest-grained material possible should be collected in two 100 ml glass jars, which should be filled to the brim (Environmental Kit G). Ballast in the form of scrap iron, stone and pieces of concrete should be removed. If you are unsure about the substances involved, fill at least two jars. Use clean tools and a metal spoon for collecting samples.</p>	<p>Pack with freezer block.</p> <p>Dispatch to SKL by the fastest possible method. If the samples cannot be dispatched the same day, store them in a refrigerator at a maximum temperature of +4° Celsius.</p>
<p><b>Metal in lakes, watercourses, groundwater and surface water systems etc.</b></p>	<p>Use a plastic bottle to collect the sample (Environmental Kit B). A 125 ml sample is sufficient. Use disposable gloves. Try not to include the surface film on the water in the sample. Move the bottle with the neck facing in the direction of the water current and fill the bottle completely. When collecting samples of groundwater or from surface water systems, a water sample collector may be used.</p>	<p>Pack in boxes containing filler material. If the samples cannot be dispatched the same day, store them in a refrigerator at a maximum temperature of +4° Celsius.</p>

Type of trace/sample	Processing	Packaging/storage
<b>Metals in soil or ash</b>	The finest-grained material possible should be collected in two 50 ml plastic containers, which should be filled to the brim. 100 ml glass jars may also be used (Environmental Kit G). Use clean tools and a plastic spoon for collecting samples.	Pack in boxes containing filler material.
<b>Products or pure chemicals in liquid form</b>	<p>The procedure may vary somewhat depending what chemical you suspect may be involved. Remember that vessels may contain sediment from which samples may have to be collected. It is best to take liquid samples using a drum sampling tube (Environmental Kit I) to create a liquid column from the bottom to the surface of the liquid. Pour the liquid into a 250 ml glass bottle (Environmental Kit D250). Make a note of the colour, any smell and whether you suspect that the sample may contain water.</p> <p><b>Top tip:</b> The presence of an aqueous (water) phase can be determined by using Waterfinder paste applied to a stick.</p>	Place the bottle in a transport container and add vermiculite. Pack the container in an outer box. Dispatch to SKL by the fastest possible method. If the samples cannot be dispatched the same day, store them in a refrigerator at a maximum temperature of +4° Celsius.