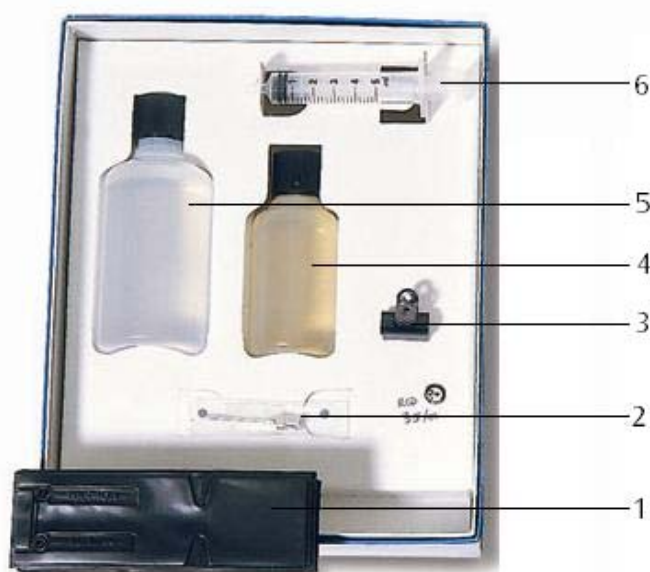


## Filmpack 2 for Radiography 1000669

## Filmpack 4 for Debye-Scherrer Recordings 1000670

### Instruction sheet

10/12 ALF



- 1 Film sheets
- 2 Cannula
- 3 Metal clip
- 4 Developer
- 5 Fixer
- 6 Syringe

#### 1. Description

The Filmpacks contain high speed X-ray film separately sealed in thin, black p.v.c. envelopes that have two apertures to accept the cannula of a syringe. Light cannot reach the film directly through the apertures. It can be fogged through the p.v.c. if exposed to bright sunlight or left for some time in fluorescent lighting. The packaging allows development and fixing in daylight.

Two sizes of X-ray film are available:

Filmpack 2 is used for radiography.

Filmpack 4 is used for Debye-Scherrer recordings.

Film cassettes and Debye-Scherrer camera are contained in Basic equipment Set for the X-Ray Apparatus (1000665).

#### 2. Scope of delivery

- 20 film sheets (38 x 35 mm) (Filmpack 2)
- 12 film sheets (150 x 12 mm) (Filmpack 4)
- 1 bottle of X-ray developer
- 1 bottle of X-ray fixer
- 1 syringe
- 1 cannula
- 1 metal clip

### 3. Operation

#### 3.1 Processing

- Before drawing liquid into the syringe, raise the piston by 1 ml so that there will be air above the liquid. This will ensure that all the liquid will be expelled from the syringe and tube on injection.
- Inject the developer with the syringe and attachable cannula after the latter has been inserted into one of the apertures in the envelope adjacent to the wording.

It is important to ensure that the developer wets both surfaces of the film and that it is agitated during the period of development.

- Apply gentle pressure with the forefinger and thumb on the film envelope.
- Inject the fixer after the period of development without expelling the developer.

Processing	Developer	Fixer
Time	1½ mins.	4 mins.
Film-pack 2	2½ ml	3½ ml
Film-pack 4	3½ ml	5 ml

#### 3.2 Removal of film

- At the end of the fixing period cut off, with scissors or a sharp knife, one corner of the film-pack and expel, with gentle pressure, the bulk of the entrained fluid.
- Then cut off the bottom edge of the envelope and remove the film by gripping one corner with the film clip supplied.
- Wash the film in running water for a few seconds before inspection.

If the film is required for permanent records, fix it for a further ten minutes and then wash it for 30 minutes in running water. Standard fixer with or without hardener can be used.

#### 3.3 Storage of chemicals

Whilst the fixer is fairly stable, some deterioration of the developer can occur due to the air above the liquid. Consequently if a part full bottle of developer is to be stored for some time, it is recommended that it be transferred to one of a smaller volume and in these circumstances the liquid should be usable over long periods. Deterioration of the developer is indicated by brown colouration appearing.

When disposing the chemicals the local regulations are to be observed.

#### 3.4 General

In exposing radiographs, the film-to-object distance should be a minimum and the film-to-source distance should be as large as possible consistent with a reasonable exposure time (refer to the manual of the X-Ray Apparatus 1000657 or 1000660) and the size of the source of X-rays (focus of TELTRON X-ray tube is circa 2 x 2 mm).

The film can also be blackened by beta and gamma radiations from the low energy sources available to schools.

Where the radiation contains a high percentage of 'soft' X-rays, the texture of the envelope of the film-pack may be apparent on the developed film.