

## Mini-Film Maker Kit

A dedicated polymer thin film making accessory for IR transmission analysis

### Product features

- Quick and reproducible thin film production
- Sample melt points from ambient to 250°C
- Standard film sizing rings of 50, 100, 250 and 500 microns
- Dedicated film maker accessory with hydraulic press and integrated heated platens

The Specac Mini-Film Maker is designed to produce high-quality thin films of polymer and plastic materials for infrared transmission analysis. This product enables quick and easy hot pressing of pellets and other sample forms from ambient to 250°C, to give constant and reproducible thickness films over the range 50 to 500 microns with a formed diameter of 15 mm.

The accessory consists of an integrated hydraulic press, digital temperature controller, and heated platens, together with a lightweight film maker assembly. This design allows the heated platens to be pre-heated and held at the melt-point temperature required for the sample. The film maker assembly is separately prepared with a few tens of milligrams of the sample material and appropriate sizing ring, before being introduced to the pre-heated platens. After the film maker assembly has stabilised to the preset temperature, a load of typically 0.5 Tons is applied by rotating the pressure screw assembly to hot press the film. On removal



from the heated press, the low-thermal mass film maker assembly quickly returns to ambient temperature on the cooling plate and the pressed film is removed. The film can then be mounted in a 3 by 2 inch self-adhesive card (Specacard) for infrared transmission analysis.

This process appreciably shortens the film making process cycle time compared with conventional methods and, in practice, a cycle time of less than 5 minutes is possible for producing a thin film.

The Specac Mini-Film Maker Kit includes the Mini-Film Maker Press with

temperature controller, a Film Maker Assembly with Film Sizing Rings of 50, 100, 250, and 500 microns, 200 pairs of Aluminium Foil Discs, a Cooling Plate, a pack of 100 Specacards, and Stainless Steel Tweezers (Forceps). A set of US, EU, and UK power leads is provided as standard.

Typical uses of this accessory include producing thin films for infrared quantitative analysis of polymers and plastics for regulatory or production quality assurance purposes, as well as method development for process analysis. Other applications include thin film making for tensile strength studies.

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### How to produce a thin film

Place the shield, selected sizing ring and smaller foil disc on the lower film platen assembly.

- 1) The sample is put into the middle of the foil before the larger foil disc and upper film platen assembly are added on top.
- 2) The whole film maker assembly is placed between the pre-heated platen surfaces so that a tonnage load can be applied.
- 3) Once the sample has been compressed and removed from the press, disassemble the film maker assembly and carefully peel the foils away from the film inside.
- 4) The film can then be put in a Specacard and placed into the spectrometer for analysis.



Illustrations, descriptions and specifications in this data sheet were correct at the time of going to press. However, Specac's policy is one of continuous product development and we reserve the right to change descriptions and specifications at any time. For the latest details please contact your local Specac office or representative.

### Specifications

|   |                            |
|---|----------------------------|
| Maximum load                            | 2 Tons                     |
| Temperature range                       | Ambient to 250°C           |
| Temperature control                     | 1°C steps                  |
| Thin film formed diameter               | 15 mm                      |
| Thin film thickness (nominal)           | 50, 100, 250 & 500 microns |
| Press Dimensions (excluding lead screw) | 104mmx198mmx197mm (WxHxL)  |
| Weight of press and controller          | 5.7Kg                      |
| Supply voltage                          | 110/220V                   |
| Output voltage                          | 30V dc                     |
| Heater power                            | 35W                        |

### Ordering information

#### Mini-Film Maker Kit

| Part No. | Description         |
|----------|---------------------|
| GS03970  | Mini-Film Maker Kit |

#### Mini-Film Maker spares and consumables

| Part No. | Description  |
|----------|--|
| GS03971  | Mini-Film Maker Assembly (includes upper and lower film platen assembly, shield, and sizing rings) |
| GS03972  | Sizing rings set (50, 100, 250 & 500 microns)  |
| GS03973  | Set of aluminium foil discs (200 pairs)  |
| GS03974  | Cooling Plate for Mini-Film Maker  |
| GS03975  | Mini-Film Maker Platen Set (includes upper and lower film platen assembly, and shield)             |
| GS03800  | Specacards (pkt 100) 10mm dia. aperture  |
| GS15628  | Stainless steel tweezers (forceps)   |

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