

Press Family

Mini-Film Maker Kit

A dedicated polymer thin film making accessory for IR transmission analysis

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 15 to 500 microns with a formed diameter of 15mm.

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 making 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 knob 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.

Key Features

- Quick and reproducible thin film production
- Sample melt points from ambient to 250°C
- Standard film sizing rings of 15, 25, 50, 100, 250 and 500 microns
- Dedicated film maker accessory with hydraulic press and integrated heated platens



The Specac Mini-Film Maker Kit includes the Mini-Film Maker Press with temperature controller, a Film Maker Assembly with Film Sizing Rings of 15, 25, 50, 100, 250, and 500 microns, 200 pairs of Aluminium Foil Disc, a Cooling Plate, a pack of 10 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 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.

Illustrations, descriptions and specifications in this datasheet 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.

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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 onto the middle of the foil before the larger foil disc and upper platen assembly are added on top.
- 2) The whole film making 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 place into the spectrometer for analysis.

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2)



3)



4)



Specifications

Maximum Load	2 Tons
Temperature range	Ambient to 250°C
Temperature control	1°C steps
Thin film formed diameter	15 mm
Thin film thicknesses (nominal)	15, 25, 50, 100, 250 & 500 microns
Press dimensions (excluding lead screws)	104 x 198 x 197 mm (WxHxL)
Weight of press and controller	5.7 Kg
Supply voltage	110/220 V
Output voltage	30 V dc
Heater power	35 W

Ordering Information

Mini-Film Maker Kit

GS03970 Mini-Film Maker Kit

Mini-Film Maker Spares and Consumables

- GS03971 Mini-Film Maker Assembly (Includes upper and lower film platen assembly, shield, and sizing rings)
- GS03972 Sizing rings set (15, 25, 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 of 100) 10mm dia. aperture
- GS15628 Stainless Steel Tweezers (Forceps)

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