



ESL ELECTROSCIENCE

CERAMIC TAPES &
THICK-FILM MATERIALS

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DIELECTRIC COMPOSITION

4022-F

Low Temperature Firing Sealing Glass for Soda-Lime Glass

ESL 4022-F is a glass paste in screen-printable form, for use in sealing together soda-lime glass plates. It is designed to be processed at low temperatures. Other glass substrates or ceramics having a thermal coefficient of expansion similar to soda-lime glass may also be bonded. ESL 4022-F has a fine particle size distribution and is useful for making thin seal cross-sections. When properly fired, 4022-F produces fairly clear transparent seals for use in a variety of packaging and hermetic seal applications.

PASTE DATA

Rheology:	Thixotropic, screen printable paste
Viscosity: (Brookfield RVT, ABZ Spindle, 10 rpm, 25.5 ± 0.5 °C)	125 ± 25 Pa.s
Colour:	Transparent Gray
Shelf Life:	Six months

PROCESSING

Screen Mesh/Emulsion:	200-325/38 µm
Leveling Time:	5 - 10 minutes
Drying at 125° C:	10 - 15 minutes
Firing Temperature:	500°C
Rate of Ascent/Descent:	20 - 40 °C/minute
Substrate for Calibration:	soda-lime glass
Thinner:	ESL 401

ESL Europe (KOP) 4022-F 0304-A

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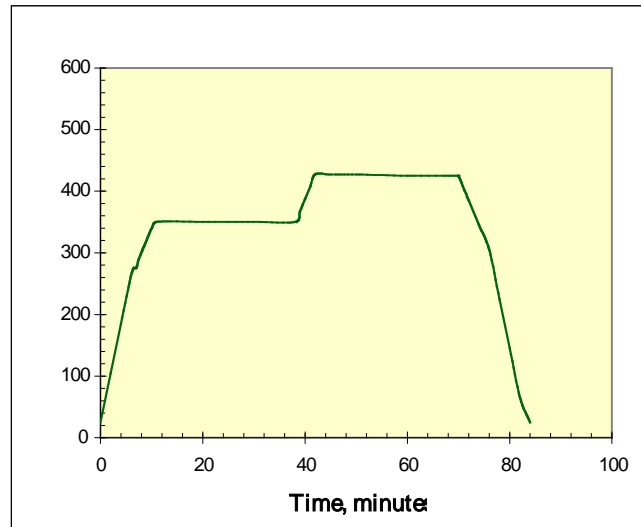
See Caution and Disclaimer on other side.

TYPICAL PROPERTIES

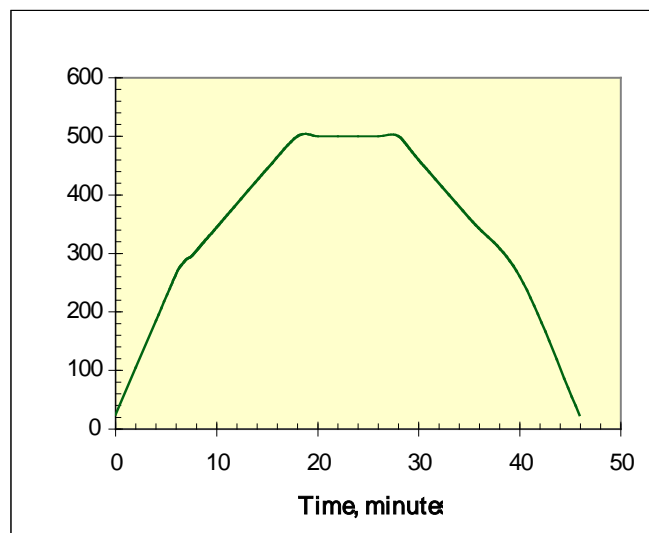
Fired Thickness:

$18 \pm 8 \mu\text{m}$

Typical Burnoff and Sintering Cycle



Typical Sealing Cycle



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CAUTION: Proper industrial safety precautions should be exercised in using these products. Use with adequate ventilation. Avoid prolonged contact with skin or inhalation of any vapours emitted during use or heating of these compositions. The use of safety eye goggles, gloves or hand protection creams is recommended. Wash hands or skin thoroughly with soap and water after using these products. Do not eat or smoke in areas where these materials are used. Refer to appropriate MSDS sheet.

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