

PRODUCT DATA SHEET

SikaBiresin® SC390 (Formerly SC 390)

Epoxy Modeling Paste for Master Models, Plugs, and Direct-to-Mold

TYPICAL PHYSICAL PROPERTIES (FOR FURTHER VALUES SEE SAFETY DATA SHEET)

Properties	SikaBiresin® SC390 (A) Resin	SikaBiresin® SC390 (B) Hardener
Composition	Epoxy	Amine
Mix ratio – by weight	100	100
Mix ration – by volume	100	100
Aspect	Viscous paste	Viscous paste
Color	Grey	White
Color (mixed)	Grey	
Viscosity at 77°F (25°C)	9,000,000 cps	7,000,000 cps
Viscosity (mixed)		7,000,000 cps
Density at 77°F (25°C) ASTM D792	9.0 lbs./gal	8.9 lbs./gal
Density at 77°F (25°C) (mixed) ASTM 792	8.9 lbs./gal	
Specific gravity at 77°F (25°C)	1.08 g/cm ³	1.08 g/cm ³
Specific gravity at 77°F (25°C) (mixed) ASTM 792	1.08 g/cm ³	
Pot life at 77°F (25°C) on 500 grams	140 minutes	

DESCRIPTION

SikaBiresin® SC390 is an extrudable epoxy paste for model, tool, and plug production by extrusion process.

PRODUCT BENEFITS

- Very good surface aspect
- Good behavior on vertical surfaces in thickness up to 1.20 inches
- Separate resin and hardener colors aid in mix indication
- Good thermal resistance
- Low CTE with good dimensional stability

AREAS OF APPLICATION

SikaBiresin® SC390 is suitable for model, tool, and plug production.

Tests with actual materials and conditions have to be performed to ensure satisfactory performance.

TYPICAL MECHANICAL AND THERMAL PROPERTIES^A

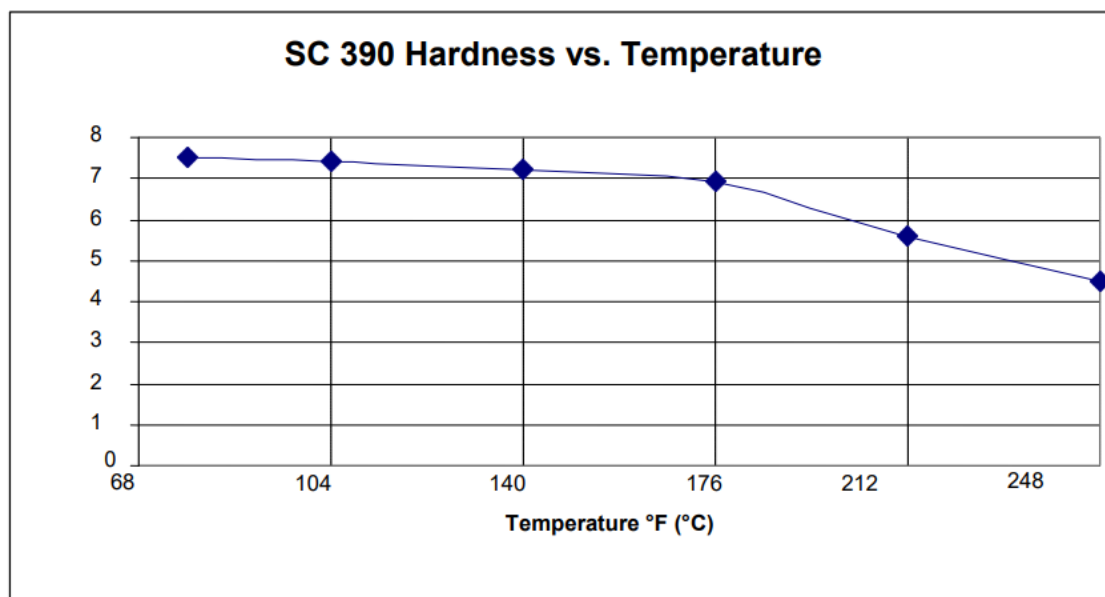
Properties, Test Method	Applied thickness: 1.2 in (30 mm)	Applied thickness: 0.6 in (15 mm)
Glass transition temperature Tg (TMA), ASTM E1545 24 hrs at 77°F (25°C) + 16 hrs at 140°F (60°C) + 16 hrs at 176°F (80°C)	160°F (71°C) 181°F (83°C) 192°F (89°C)	129°F (54°C) 180°F (82°C) 196°F (91°C)
Coefficient of Thermal Expansion (CTE), ASTM E1545 24 hrs at 77°F (25°C) + 16 hrs at 140°F (60°C) + 16 hrs at 176°F (80°C)	33 ppm/°F (59 ppm/°C) 29 ppm/°F (53 ppm/°C) 31 ppm/°F (55 ppm/°C)	34 ppm/°F (61 ppm/°C) 33 ppm/°F (59 ppm/°C) 32 ppm/°F (58 ppm/°C)
Shore D hardness (D15), ASTM D2240 24 hrs at 77°F (25°C) + 16 hrs at 176°F (80°C)	73 (71) 75 (74)	69 (65) 75 (74)
Compressive strength, ASTM D695	5,200 psi (36 MPa)	5,200 psi (36 MPa)
Heat deflection temperature (HDT)	172 (78)	172 (78)
Tensile strength, ASTM D638	3,000 psi (21 MPa)	3,000 psi (21 MPa)
Tensile modulus, ASTM D638	348,000 psi (2,400 MPa)	348,000 psi (2,400 MPa)
Tensile elongation, ASTM D638	2.2 %	2.2 %
Flexural strength, ASTM D790	5,200 psi (36 MPa)	5,200 psi (36 MPa)
Flexural modulus, ASTM D790	290,000 psi (2,000 MPa)	290,000 psi (2,000 MPa)

^A) Cure schedule: 24 hours at 74°F (23°C) + 16 hours at 176°F (80°C)

EXOTHERMIC PEAK AND HARDENING TIME ^A

Thickness in. (mm)	Product Temperature °F (°C)	Exothermic Peak hours	Exothermic Peak °F (°C)	Workability hours
1.2 (30)	84 (29)	140	180 (82)	12
0.6 (15)	84 (29)	140	115 (46)	16

^A) Room temperature: 77°F (25°C); polystyrene support



PROCESSING

During extrusion, the dispensing nozzle must be maintained perpendicular to the surface on which the product is applied. Ensure overlap of ribbon.

Note: Exothermic reactions mostly depend on the type of machine and on the working parameters such as room temperature, insulating property of frame, the mixture's temperature (depending on the type of mixer: static or dynamic), the speed of mixing, output, and applied thickness.

PROCESSING CONDITIONS

On vertical areas, it is recommended to apply a thin coat of product with a spatula. This will help to reinforce the bonding on the support.

For ceiling application, we recommend a maximum thickness of 1.20 in. (30 mm).

A pre-cure of 16 hours at 104°F (40°C) is recommended before filling shrinkage relief gaps and rough machining. Final post-cure temperature and duration are dependent on tool construction and size.

TOOL CONSTRUCTION

The overall stability of a tool is dependent on the size, construction materials, construction techniques, applied paste depth, application temperature, post-cure time, and post-cure temperature. Generally, as the tool gets larger, the need for increased rigidity of the tool and support structure, closer matching the coefficient of thermal expansion of the materials, as well as reducing the maximum post-cure temperature need to be evaluated for tool durability. In many instances, equivalent thermal performance can be

achieved at a lower post cure temperature for a longer period of time. For further advice and information, please contact Sika Corporation's Industry Technical Services Department at tsmh@us.sika.com.

Normal health and safety precautions should be observed when handling these products:

- Ensure adequate ventilation
- Wear gloves, glasses, and protective clothes

For further information, please consult the Safety Data Sheets

STORAGE CONDITIONS

Shelf life of resin and hardener is 9 months when stored in original, unopened containers between 65-77°F (15 - 25°C). Any opened can must be tightly closed.

PACKAGING INFORMATION

Packaging information is available upon request. Please contact your local Sika sales representative.

FURTHER INFORMATION

Advice on specific applications will be given on request. To contact Sika Corporation's Industry Technical Services Department, send an email to tsmh@us.sika.com. Copies of Safety Data Sheets and Product Data Sheets are available upon request.

BASIS OF PRODUCT DATA

All technical data stated in this document are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of

chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

LEGAL DISCLAIMER

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at usa.sika.com or by contacting SIKA's Technical Service Department via email at tsmh@us.sika.com. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product. SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product's shelf life. User determines suitability of product for intended use and assumes all risks. User's and/or buyer's sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.** Sale of SIKA products are subject to the Terms and Conditions of Sale which are available at <https://usa.sika.com/en/group/SikaCorp/termsandconditions.html> or by calling +1 800-933-7452.