

SikaForce®-7311 L45 GR

Semi-flexible potting compound

Technical Product Data (typical values) *Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

		Component A SikaForce®-7311 L45 GR	Component B SikaForce®-7020
Chemical Base		Polyols	Isocyanate derivatives
Color (CQP ¹) 001-1)		White	Brown
Mixed		Dark Gray	
Cure mechanism		Polyaddition	
Density (CQP 006-5))		10 lbs./gal. (1.2 g/cm ³) approx.	10 lbs./gal. (1.2 g/cm ³) approx.
Density Mixed		10 lbs./gal. (1.2 g/cm ³) approx.	
Mixing Ratio		100 : 26	
By volume		100 : 25	
By weight		100 : 25	
Solid Content		100 %	
Viscosity (CQP 538-2)		2,800 mPa's, approx.	90 mPa's, approx.
Brookfield RVT 4/20			
Brookfield RVT 2/20			
Viscosity Mixed		1,500 mPa's, approx.	
Application Temperature		60-85°F (15 to 30°C)	
Application Time ² (CQP536-3)		20 minute approx.	
Pot-Life ² (CQP 536-3)		45 min approx.	
Shore D Hardness ² (CQP 537-2)		45 D approx.	
Thermo Conductivity (DIN 52612)(50°F/176°F (10°C / 80°C)		5800 psi (40 N/mm2) Approx.	
Dielectric strength (DIN 53481)		54 kV/mm	
Volume resistivity (DIN 53482)		1.5 teraohm*.cm	
Surface resistivity (DIN 53482) 4 days at 73°F (23°C, 80% r.h.)		0.0009 teraohm*	
Tracking resistance (DIN 53480) KA/KC		3c/>600	
Dissipation factor (DIN53483) 50 Hz / 1 kHz / 1 MHz		265	
Dielectric constant (DIN 53483) 50 Hz / 1 kHz / 1 MHz		5.32 / 4.03 / 3.50	
Linear coefficient of thermal expansion (DIN VDE 0304) 14°F (-10°C)<T<+ 176°F (80°C)		157 µm/m-K	
Water absorption (DIN 53495) (after 30 days, 68°F (20°C)		0.94 % weight	
Shelf life (storage between 50 and 86°F (10 and 30°C))		12 months	9 months

1) CQP = Corporate Quality Procedure 2) 73°F (23°C) / 50% r.h. * 1 teraohm = 1 x 10¹² ohm

Description

SikaForce®-7311 L45 GR is the base part of a two component polyurethane potting compound used with Sika-Force®-7020 Hardener. This product is manufactured in accordance with ISO 9001 / 14001 quality assurance systems.

Product Benefits

- Semi-flexible
- Low viscosity
- Medium application time
- High dielectric strength
- Does not contain chemical substances included in the RoHS directive 2002/95/EC

Areas of Application

Encapsulation of electric and electronic components with high requirements as to dielectric strength and flow properties. This product is suitable for professional experienced users only. Tests with actual substrates and conditions have to be performed to

Industry



ensure adhesion and material compatibility.

Cure Mechanism

The curing of SikaForce®-7311 L45 GR takes place by a chemical reaction of the two components. Higher temperatures speed up and lower temperatures slow down the curing process.

Chemical Resistance

In case of chemical or thermal exposure, we recommend project related testing. Please consult Sika Technical Services at tsmh@us.sika.com.

Method of Application

Surface preparation

The items to be embedded must be clean and dry. Surface temperature should be at least 5.4°F (3°C) above the dew point to avoid condensation. It is mandatory to tests new materials to ensure adequate adhesion.

Application

Specifics on quantities of mixed material required and appropriate potting method for a given application should be determined beforehand and confirmed with testing. Mixed material must be used within the given Application time. To avoid formation of air bubbles, always feed the compound from the lowest part of the item. Final curing takes place after approx. 14 days at 73°F (23°C). Higher temperatures reduce the curing time.

Mixing

Stir the base part thoroughly before use. Add hardener according to the indicated mixing ratio and mix manually until a homogeneous color is obtained. Avoid entrapment of air during mixing. The mixed material should be used within the given application time. Best mixing and dosage take place mechanically with two component mixing equipment. Contact Sika Systems Engineering at tsmh@us.sika.com.

Removal

Uncured SikaForce®-7311L45 GR can be removed from tools and equipment with mineral spirits or another suitable solvent. Once cured, the material can only be removed mechanically. Hands and exposed skin should be washed immediately using a suitable industrial hand cleaner and water. Strictly follow solvent manufacturer's instructions for use and warnings. Do not use solvents on skin!

Overpainting

Compatibility with any paint or painting process must be tested prior to use to determine suitability.

Limitations

Suitability of SikaForce®-7311 L45 GR for any given application must be determined beforehand and testing done to validate. This includes but is not limited to: adhesion testing, process compatibility evaluation, performance requirement testing, environmental compatibility evaluation, and health and safety concerns.

Part A: SikaForce®-7311 L45 GR

WARNING: IRRITANT, SENSITIZER.

Contains Castor oil (CAS:8001-79-4), quartz (SiO₂) (CAS:14808-60-7) and titanium dioxide (CAS:13463-67-7). May cause skin/ eye/ respiratory tract irritation. May cause gastrointestinal disturbance if swallowed.

WARNING! This product contains a chemical known in the State of California to cause cancer.

Part B: SikaForce®-7020

WARNING: IRRITANT, SENSITIZER.

Contains Diphenylmethanediisocyanate, isomers and homologues (CAS:9016-87-9). Causes skin/eye/respiratory tract irritation. Harmful if inhaled/swallowed. May cause allergic respiratory/skin reaction after prolonged contact.

HMIS

	Part A	Part B
Health	1	*2
Flammability	1	1
Reactivity	0	0
Personal Protection	B	G

FIRST AID (Part A & B)

Eyes – Hold eyelids apart and flush thoroughly with water for 15 minutes.

Skin – Remove contaminated clothing. Wash skin thoroughly for 15 minutes with soap and water.

Inhalation – Remove to fresh air. **Ingestion** – Do not induce vomiting. Dilute with water. Contact physician.

In all cases contact a physician immediately if symptoms persist.

Further Information

Copies of the following publications are available on our website www.sikausa.com or by contacting (tsmh@sika-corp.com)

- Material Safety Data Sheet
- Product Data Sheet

In case of emergency call:

Chemtec: 800-424-9300

International: 703-527-3887

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Material Safety Data Sheets containing physical, ecological, toxicological and other safety related data. It is highly recommended to read the actual Material Safety Data Sheet before using the product.

- **KEEP OUT OF REACH OF CHILDREN**
- **NOT FOR INTERNAL CONSUMPTION**
- **FOR INDUSTRIAL USE ONLY**
- **KEEP CONTAINER TIGHTLY CLOSED**
- **FOR PROFESSIONAL USE ONLY**

Packaging Information

Can	1 kg (Comp A) .45 kg (Comp B)
Pail	25 kg (Comp A)
Pail	20 kg (Comp B)
Drum	250 kg (Comp A)

Value Basis

All technical data stated on this Product Data Sheet are based on the results of laboratory tests only. Actual measured data in the field may vary due to site specific conditions which are not known to Sika and beyond our control.

Part A: SikaForce®-7311 L45 GR

Part B: SikaForce®-7020

Handling And Storage

Avoid direct contact. Wear personal protective equipment (chemical resistant goggles/gloves/clothing) to prevent direct contact with skin and eyes. Use only in well ventilated areas. Open doors and windows during use. Use a properly fitted NIOSH respirator if ventilation is poor. Wash thoroughly with soap and water after use. Remove contaminated clothing and laundry before reuse.

Storage Conditions

SikaForce®-7311 L45 GR has to be kept between 50°F (10°C) and 122°F (30°C) in a dry place. Do not expose it to direct sunlight or frost. After opening of the packaging, the contents should be protected against humidity. Minimum temperature during transportation is 32°F (0°C) for maximum 6 hours.

Further information available at:
www.sikausa.com

Sika Corporation
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30800 Stephenson Highway
Madison Heights, MI 48071
USA
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Clean Up

Use personal protective equipment (chemical resistant gloves/goggles/clothing). Without direct contact, sweep up spilled or excess product and place in suitable sealed container. Dispose of excess product and container in accordance with applicable local, state, and federal regulations.

Limited Material Warranty

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 shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. **NO OTHER WARRANTIES IMPLIED OR EXPRESS 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.**

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Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Material Safety Data Sheet which are available at www.sikausa.com or by contacting tsmh@sika-corp.com. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Material Safety Data Sheet prior to product use.

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