UNISORB®
INSTALLATION SOLUTIONS

GB-0198-1.1M, Rev. 3

STANDARD V-100 EPOXY GROUT PRODUCT DATA

Unisorb's Standard V-100 Epoxy Grout is a high performance, two-component filled epoxy resin system of superior quality that offers excellent flowability, a high resistance to impact and an extremely rapid cure. This grout is the product of choice where ease of placement, suitability for use under extremely high loads, and minimal cross-sectional thicknesses are required. Other materials such as concrete or weaker grouts may develop structural flaws when subjected to high concentrated loads.

Standard V-100 is the responsible choice for use in your commercial or industrial space. This grout is 100% solids, has no VOCs[1], is free of BGE[2], and does not contain nonylphenol[3].

The optimal use for Standard V-100 is to fill gaps under leveling equipment, under baseplates, and around anchors. The designed clearance range is 12.7mm to 38mm both vertically and laterally/radially. Consult with Unisorb's team of engineers, technicians, and project managers to confirm the best use of Standard V-100 Epoxy Grout in your application.

Modern plant maintainers face many challenges where it is critical to have superior solutions in their toolbox. The standard for installing machine tools and other large equipment is Unisorb Standard V-100 Epoxy Grout.

Packaging/Yields:
Standard V-100® Epoxy Grout, 11# Kit (0.003 M^3)
Standard V-100® Epoxy Grout, 22# Kit (0.006 M^3)
Standard V-100® Epoxy Grout, 55# Kit (0.015 M^3)

Standard V-100® is an ideal choice for:

- Grouting machine bases
- Installation of anchor bolts
- Setting of Fixators and other leveling devices
- Placement of sole plates
- Repairing deteriorated foundations

1 - VOCs are Volatile Organic Compounds. Organic gases that are sometimes emitted by inferior grouting products that pose a variety of short and long-term health risks.

2 - BGE is butyl glycidyl ether. The EPA (SARA Title III, section 312) lists BGE as "Toxic" (per ANSI Z129.1) by skin absorption and an immediate health hazard.

3 - Nonylphenol is a Marine Pollutant and considered "Dangerous for the environment" per the EU directive 79/831/EEC.

Physical Properties @ 72˚F (22˚C)

Compressive Strength		
(ASTM D-695)	6 hours	62.1 MPa
	1 day	96.7 MPa
	3 days	105.1 MPa
	7 days	113.8 MPa
Compression Modulus		3006 MPa
Tensile Strength (ASTM D-638)		33.1 MPa
Flexural Strength (ASTM D-790)		46.9 MPa
Heat Deflection Temperature (ASTM D-648)		71.7°C
Maximum Service Temperature		93.3°C
Hardness (Shore D) (ASTM D-2240)		90
Mixed Viscosity (ASTM D-2196)		8,000 cps
Adhesion Slant Shear Test (ASTM C-822)		29.0 MPa
Specific Gravity (ASTM D-792)		1601 kgs/m3
Placement Time		10-15 min.
Tensile Modulus		6964 MPa
Linear Shrinkage (ASTM D-2566)		0.00025 in./in.
Coefficient of Thermal Expansion (ASTM D-696)		3.6×10^{-5} cm/cm/°C
Creep Test (ASTM C-1181)		
600 psi @ 150°F cured 24 hours @ 70°F 16 hours @ 150°F		1.95×10^{-2} in./in.

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IMPORTANT ADVANTAGES: PERMANENCE
Standard V-100® is durable materials that will maintain machine alignments for a long time. Saves downtime, labor, and lost production. Resistance to oils, greases, acids, alkalies and solvents is much greater than that of cement-based materials. Tensile and flexural strengths are at least 15 times that of concrete and compressive strength is about 5 times that of concrete.

PACKAGING/CONVENIENCE
Standard V-100® is packaged in a kit with the base resin packed in an oversized container large enough to serve as a mixing vessel. The hardener portion of the kit is added to the base resin on-site. A Traditional Epoxy Mixing Paddle can be purchased separately to fit a standard 1/4" electric drill. After a mix time of 2-3 minutes a 15 minute working time remains for placement of the material. For Gel Time vs. Temperature and Mixed Viscosity vs. Temperature see graphs on the left of this page.

EASY, FLOW-INTO-PLACE INSTALLATION
Ensure that all surfaces are clean and dry. Once the kit is fully mixed, the grout will flow into spaces under machines of ½" or less and fills completely before solidifying.

RE-GROUTS
When required due to soil and foundation settlements, regrouting is as simple as breaking any rigid connections from our facility to the equipment and raising it to the correct elevation and/or alignment. Establish a proper minimum section and regrout with Standard V-100® Epoxy Grout.

MINIMUM MATERIAL USAGE
Maximum thickness of 25.4mm (unconfined), up to 38.1mm under a steel plate. Minimum thickness of 12.7mm. Contact Unisorb for assistance if your unique application requires thicknesses outside of these parameters.

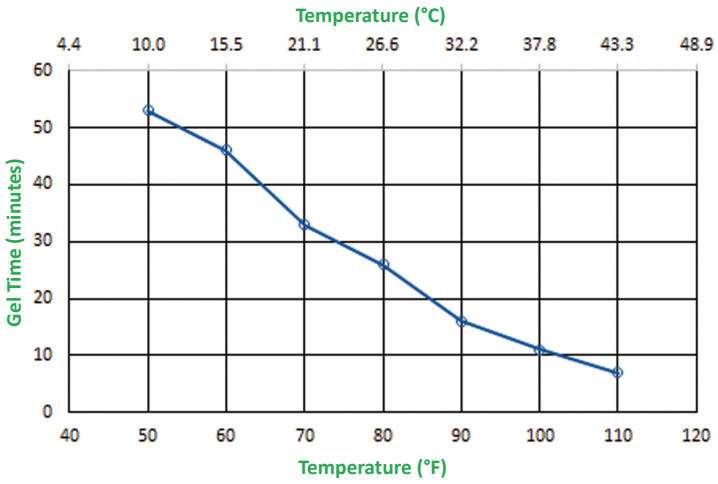
FAST CURE
At 77°F, a 1/2" thickness will set up for use in 8 hours.

Physical properties shown are the result of laboratory testing performed per industry recognized test procedures. Laboratory properties aid in determining suitability of the product for the intended application. Field testing results may vary due to procedures or ambient conditions such as temperature and humidity. Laboratory reports are available on request.

Consult the specific Safety Data Sheets (SDS) for all safety data.

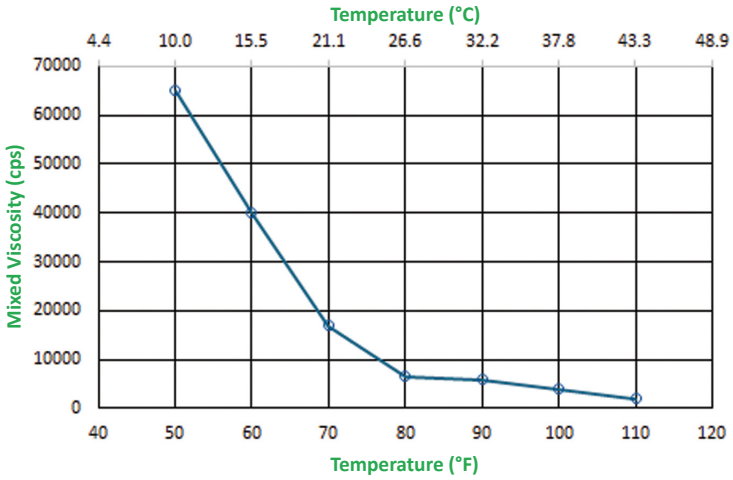
Contact Unisorb for all application questions and grouting support.

STANDARD V-100® EPOXY GROUT
GEL TIME VS. TEMPERATURE



This graph shows gel time as a function of temperature. With the curve being basically linear, a good rule of thumb is 30 minutes (approximately) at room temperature (72°F) and varies about 1 minute per degree temperature change.

STANDARD V-100® EPOXY GROUT
MIXED VISCOSITY VS. TEMPERATURE



This graph shows viscosity is relatively constant above 80°F, but changes rather dramatically between 70°F and 50°F. This can be very noticeable when pouring on concrete which may be 10-20°F cooler than the ambient air temperature.

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CONCRETE SURFACE PREPARATION
Remove all oil, grease and contamination from concrete. Remove loose and weak concrete from the foundation surfaces. The concrete must be dry and have no standing water.

METAL SURFACE PREPARATION
Base plates or soleplates to be grouted should be clean and free of rust, dirt and other surface contaminates.

FORMING
Method of forming must provide for rapid continuous placement of grout. Adequate clearance for grout placement and head must be provided. Forms should be watertight and greased or waxed to allow easy removal.

PREPARATION OF EPOXY GROUT
All unmixed grout components (resin, hardener, and aggregate) must be stored inside a dry, temperature-controlled storage environment with an approximate temperature range of 75°F to 90°F until all three components exhibit temperatures within this range. This could take 24 to 72 hours depending on seasonal temperature conditions.

MIXING INSTRUCTIONS
Pre-mix the resin component to ensure that the constituent liquids and solids are fully incorporated. When ready to mix grout, pour the hardener into the resin container and mix with a paddle with a low-speed, high-power drill until thoroughly blended. Periodically scrape the sides and bottom of the container to ensure that all the resin is incorporated into the mixture. The grout is fully mixed when it is a smooth, consistent color with no dark blue or brown streaks in evidence. Do not add water.

POURING
Only pour grout from one side. This is to prevent the formation of air pockets under the equipment being grouted. Continue pouring until the grout has completely flowed to the other side of the equipment and to an adequate depth to eliminate potential voids. The grout will self-level under most circumstances but may need to be agitated, pushed, strapped, etc. to help the material flow under the equipment and properly self-level, especially in cold weather

PLACEMENT TIME
The time you have before initial set depends on the air temperature, the ambient temperature of the foundation and equipment, and the temperature of the grout. In cooler conditions you will have more time to place the material, and in wamer temperatures you will have less time.

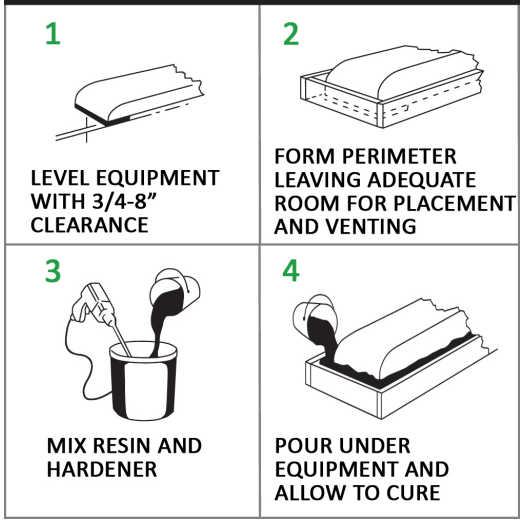
CURE TIME
The cure time (the time until the grout is strong enough for use) is temperature dependent. Special precautions must be taken when temperatures are below 70°F or above 90°F to assure the grout will properly cure. Consult the factory for details.

TEMPERATURE CONSIDERATIONS
The temperature of the kit components (resin, hardener, and aggregate) at the time of mixing and placement have a significant effect on ease of mixing, placement of the mixed grout, and strength development. For optimum results it is very important all three unmixed grout components are within the 75-90 degree F temperature range. It is recommended that the grouting environment also be preconditioned to a temperature range of 70°F to 95°F to assure predictable results.

CLEANUP
Uncured grout may be cleaned from tools and mixing equipment with a mild solvent, detergent, or pressurized water rinse. For best results, clean mixing equipment and tools immediately upon completion of mixing activities.

PRECAUTIONS
Always wear appropriate Personal Protective Equipment (PPE). SDS are available on our website at www.Unisorb.com. Avoid inhaling fumes and keep the work area well ventilated. Wash skin and clothes with soap and water immediately (before grout cures).

APPLICATION TECHNIQUES FOR EPOXY GROUTING



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