

# Resinlab 简介

Resinlab 最初于 1988 年在威斯康星州的日耳曼敦成立，当时以高级聚物理念为品牌（APC）而闻名。Resinlab 品牌名于 2000 年更改，现在以 Resinlab 贸易名称而注册成功，并且品名权属于 Resinlab 有限责任公司。Resinlab 最初作为一个合资企业在 1988 年由 Paul Ellsworth 和 Paul Tehan 共同成立。Paul Ellsworth 是安士澳粘合剂公司的合伙人之一，而 Paul Tehan，从起初的一个年轻有为的 chemist 成为了现今 Resinlab 的技术总监。在 Paul Ellsworth 退出了 Resinlab 公司后，Resinlab 就完全属于安士澳粘合剂公司。



## Resinlab 的历史

莫尔斯工厂和安士澳粘合剂的 Fulton Drive 工厂邻近，从而促进了这三家公司的合作关系。APC 负责生产和配制树脂胶，Kitpackers 提供树脂胶包装，而安士澳粘合剂销售胶产品以及其他生产商提供的化学产品。

由于这三个公司合作非常愉快，从而需要利用更大的实地空间来发展，于是，在 2003 年，安士澳粘合剂公司迁入威斯康星州日耳曼敦东部一个工业园，占地面积 85,000 平方英尺的世界营销中心。Kitpackers 就利用富尔顿工厂进行创新研究工作，它的包装加工就移至莫尔斯工厂的 Resinlab。由此一来，Resinlab 不仅加大了生产制造空间，增加了多个生产部门，而且提高了研究实验能力。

## Resinlab 现状

现今，Resinlab 是具备工艺生产设备，实验研究能力和科技技能一体化的树脂胶领头生产商。Resinlab 的绝大部分产品都是通过来自北美，欧洲和亚洲的安士澳粘合剂工程的销售代表来销售。对于 Resinlab 的姊妹公司，Kitpackers，Resinlab 给它提供了工业中大量的标准包装和定制包装生意，其包装的产品主要是粘合剂，密封剂，涂覆胶和灌封胶。

Resinlab 的网站上也列出了一系列产品，但是我们主要的目标是定做胶水配方和收费调配来满足客户确切的要求。

几乎在每个产业，从电子包装市场，普通产业，OEM，到产品组装市场，Resinlab 都能够提供标准或定制的产品。此外，我们的聚合物化学家，实验经验丰富，能够为我们的客户大小客户提供优质的技术支持与服务。

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**DESCRIPTION:**

*Resinlab™* EP11HT Gray is a two part filled epoxy adhesive designed for bonding metals and plastics. It cures at room temperature to a tough, semi-rigid material. It has good wetting to most surfaces and is very thixotropic to resist running and sagging. This product gives very good vibration and impact resistance. It gives good resistance to water, salt spray, inorganic acids and bases and most organic solvents. When used at a 1 to 2 A/B ratio, this system has shown excellent ability to withstand cryogenic temperatures (-196°C – Liquid Nitrogen) exposure tested by cooling specimens down to -196°C for 5 to 10 minutes and returning to room temperature without cracking and maintaining original bond strength.

It was especially formulated to a 1A:1B volume mix ratio for use in side-by-side dispensing cartridges and meter/mix and dispense equipment. EP11HT Gray will reach full cure at room temperature within 24 –48 hours. Cure time can be accelerated by the application of heat. Times and temperatures from 2 hours at 65°C to 20 minutes at 100°C are typical for most applications. Time to heat substrate must be taken into account. Cooler temperatures will also extend work time and increase cure times.

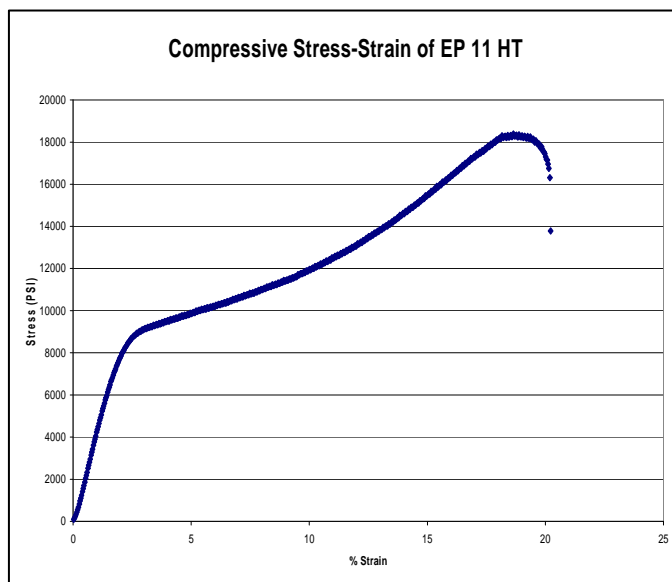
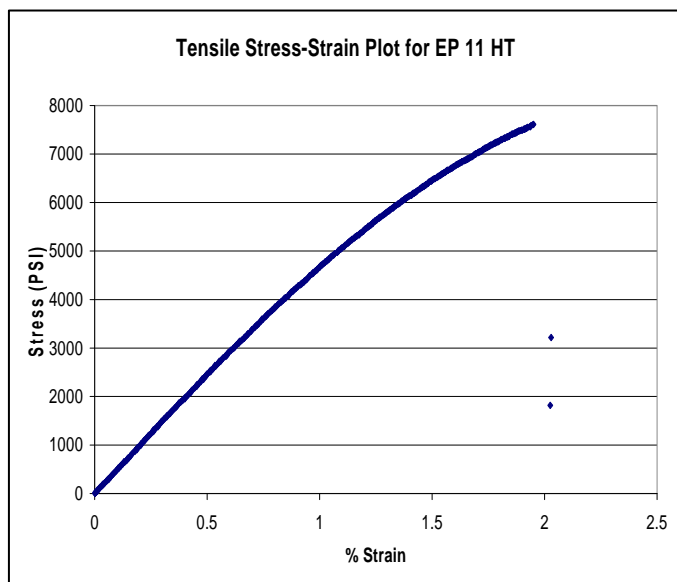
**TYPICAL PROPERTIES:**

All properties given are at 25°C unless otherwise noted.

<b><u>PROPERTY:</u></b>		<b><u>VALUE:</u></b>	<b><u>TEST METHOD:</u></b>
Color		Gray	
Viscosity			
RVT, #7, 2.5 RPM	Part A	800,000 cps (mPa-s)	TM R050-12
RVT, #7, 2.5 RPM	Part B	550,000 cps (mPa-s)	
	Mixed	700,000 cps (mPa-s)	
Specific Gravity	Part A	1.26	TM R050-16
	Part B	1.25	
	Mixed	1.25	
Pot Life		> 2 hours	TM R050-19
Mass		50 grams	
Hardness		80	TM R050-17
Scale		Shore-D	
Water Absorption		0.50 %	TM R050-35
24 hours			
Temperature Range**		-40 to 150°C	

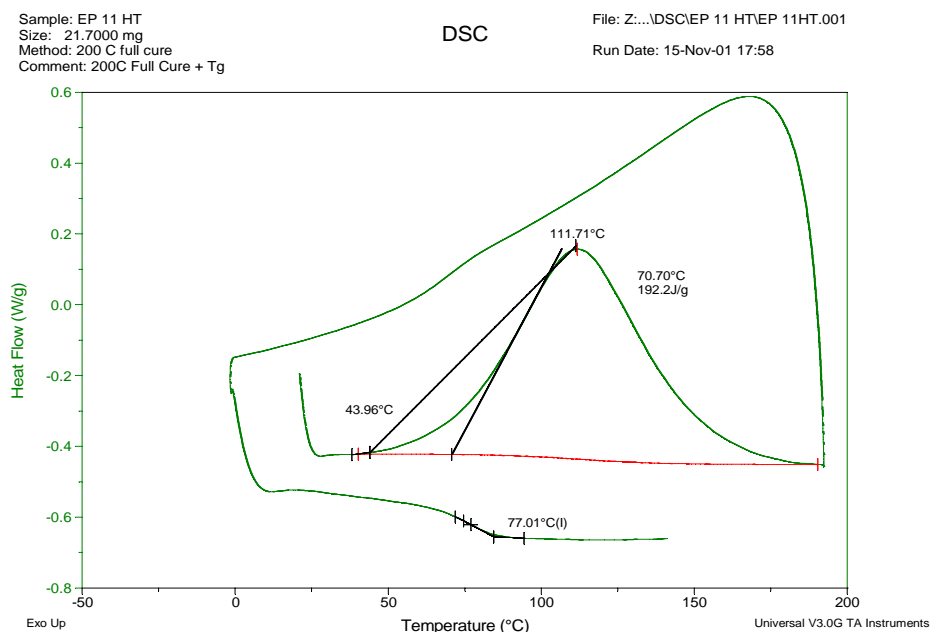
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<u>PROPERTY:</u>	<u>VALUE:</u>		<u>METHOD:</u>
Tensile	<b>PSI</b>	<b>N/mm<sup>2</sup></b>	TM R050-36
Yield Strength	3,500	24.1	
Ultimate Strength	7,500	51.7	
Break Strength	7,500	51.7	
Elongation At Break	1-2 %		
Modulus	500,000	3,450	
Lap Shear Strength (2024 T3 Al Abraded / MEK Wipe)	2,300	15.9	TM R050-37
Compressive			TM R050-38
Yield Strength	9,000	62.1	
Ultimate Strength	18,000	124.1	
Break Strength	16,500	113.8	
Modulus	400,000	2,760	



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<u>PROPERTY:</u>	<u>VALUE:</u>	<u>METHOD:</u>
Linear Coefficient Of Thermal Expansion	53 ppm/°C (below Tg) * 135 ppm/°C (above Tg) *	
Thermal Conductivity	0.282 BTU/(hr-ft.°F) * 0.489 W/m° K *	
Dielectric Constant (25C, 100Hz)	4.5 *	
Dielectric Strength	410 V/mil * 16.1 kV/mm *	
Volume Resistivity	8 x 10 <sup>14</sup> ohm-cm *	
Glass Transition Temp	77°C	TM R050-25
Exothermic Energy	192.2 J/g	
Onset Temp (by DSC)	44°C	



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**INSTRUCTIONS:**

1. Bring both components to room temperature prior to mixing. Cartridges should be stored in a vertical position to allow any air to accumulate at the tip. Mixer should be attached keeping the cartridge vertical and any air pocket purged this way. Ease of dispensing is greatly affected by ambient / material temperature.
2. If used in bulk, weigh and mix parts A and B accurately and thoroughly, scraping sides of container often. Do not pour from mixing container, transfer to a new container as residual unmixed material may cause a tacky spot on surface. If product is used in a side-by-side cartridge, attach a new static mixer with each cartridge, pre-bleed the first 3 inches of dispensed material or until a uniform color is obtained. Maintain adequate velocity during dispensing to ensure complete mixing.
3. Allow to cure undisturbed until product is fully gelled or tack-free to the touch.
4. Clean up uncured resin with suitable organic solvent such as MEK, acetone or other organic solvent.

**SIDE - BY - SIDE CARTRIDGE SUITABILITY RATING**

**POOR FAIR AVERAGE GOOD EXCELLENT**

This rating scale is a general guideline to give the user an expected level of success in a typical bench-top dispensing scenario.

Important process variables to consider are: Cartridge type and size, wall thickness; manual or pneumatic gun type; static mixer design and dimensions; product viscosity spread and ratio; shot size, shot frequency, flow rate; temperature range during use.

This scale also address's product stability in a cartridge. Factors such as filler content and settling rate, storage temperature and cartridge orientation are important factors which affect this.

It is important for the user to define the optimum static mix for each dispensing process, a change in any of the above variables can affect the mix quality. Dispensing the product on a flat surface using the dispensing pattern can help show the quality of mixing in terms of thoroughness and lead/lag consistency.

**MIX RATIO:** (Parts A to B):  
by weight 1 to 1  
by volume 1 to 1

\* Asterisk denotes values considered typical to associated resin systems or extrapolated from other test results.

\*\* Temperature Rating is based on average design requirements and is not intended as a guarantee of suitability for all applications operating at that temperature.

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**Notes:**

Values presented above are considered to be typical properties, not to be used for specification purposes. Contact our Technical Department for further information.

Many epoxy resin systems are prone to crystallization as epoxy resin is a super-cooled fluid. This condition may give the product a gritty or grainy appearance (or hazy in clear products). Products in this state will not usually cure to normal and expected properties. In extreme cases it may appear solid and cured. Fluctuating temperatures (within 5 to 50°C) aggravate this phenomena. Heating the individual component to 50 to 60°C while stirring can usually restore products to original state. Storage at 25 +/- 10°C is optimum for most products.

**SHELF LIFE:**

12 months at 25°C. Specialty packaging may be less.