

Starting Formulation

SF 4007 High Strength Adhesive 828 3046 505 High Peel Strength Adhesive

EPON™ Resin 828 / EPIKURE™ Curing Agent 3046 / HELOXY™ Modifier 505

Introduction This formulation illustrates the use of a stress relieving epoxy resin and a long pot life, amine curing agent for bonding of metal in applications requiring good peel strength, impact resistance, and maintenance of bond strength under thermal cycling conditions. Adhesion to metal surfaces which have not been etched, sandblasted or vapor degreased is better than that obtained with most general purpose adhesives.

This combination of properties together with good adhesion to polystyrene foam, paper honeycomb, and other low density insulating materials suggests use in sandwich panel construction. A convenient 2:1 volume combining ratio facilitates proportioning in the field and reduces the effect of small measuring errors on cured state properties.

Formula	Material	Supplier	Pounds	Gallons
Part A				
	EPON Resin 828	Hexion	75.0	7.77
	HELOXY Modifier 505	Hexion	25.0	2.93
	Cab-O-Sil TS-720	Cabot Corp.	<u>2.0</u>	<u>0.14</u>
		Part A	102.0	10.84
Part B				
	EPIKURE 3046 Curing Agent	Hexion	42.0	5.38
	Cab-O-Sil TS-720	Cabot Corp.	<u>0.6</u>	<u>0.04</u>
		Part B	42.6	5.42
		Total Part A & B	144.6	16.26

Mixing Instructions Disperse the Cab-O-Sil TS-720 into the resin and converter portions separately by agitating with a high shear impeller. Package the resin and converter portions in sealed metal or polyolefin plastic containers. Pigments may be incorporated to color code the components and indicate visually when complete mixing has been achieved prior to use.

Typical Handling Properties Table 1 / Handling Properties

	Units	Value
Mix Ratio, resin : curing agent	by weight	100 : 42
	by volume	2 : 1
Viscosity of system at 25 °C	cP	10,000

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Working life, 100 grams at 25 °C	hrs	1.75
Set to handling strength at 25 °C		Overnight
Cure to maximum strength at 25 °C	days	3

Typical Adhesive Properties Table 2 / Adhesive Properties

	<u>Units</u>	<u>Value</u>
Tensile shear strength, aluminum to aluminum		
No surface preparation		
1 day at 25 °C	psi	1,400
3 days at 25 °C	psi	1,920
7 days at 25 °C	psi	2,100
14 days at 25 °C	psi	2,200
Acid etched		
3 days at 25 °C	psi	2,450
Peel strength, 90°		
Acid etched 5 mil aluminum		
14 days at 25 °C	lb/inch	9

Storage Recommendations regarding storage conditions can be obtained by visiting our web site at www.hexion.com

General Information

These are starting formulations and are not proven in the user's particular application but are simply meant to demonstrate the efficacy of the products and to assist in the development of the user's own formulation. It is the user's responsibility to fully-test and qualify the formulation, along with the ingredients, methods, applications or equipment identified herein ("Information"), by the user's knowledgeable formulator or scientist, and to determine the appropriate use conditions and legal restrictions, prior to use of any Information.

Safety, Storage & Handling

Please refer to the MSDS for the most current Safety and Handling information.

Exposure to these materials should be minimized and avoided, if feasible, through the observance of proper precautions, use of appropriate engineering controls and proper personal protective clothing and equipment, and adherence to proper handling procedures. None of these materials should be used, stored, or transported until the handling precautions and recommendations as stated in the Material Safety Data Sheet (MSDS) for these and all other products being used are understood by all persons who will work with them. Questions and requests for information on Hexion Inc. ("Hexion") products should be directed to your Hexion sales representative, or the nearest Hexion sales office. Information and MSDSs on non-Hexion products should be obtained from the respective manufacturer.

Contact Information

For product prices, availability, or order placement, please contact customer service:

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For literature and technical assistance, visit our website at www.hexion.com

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