Starting Formulation

SF 4018 High Cure Adhesive 828and58034 3072 High Strength Room Temperature or Heat Cure Adhesive

EPON™ Resin 828 and 58034 / EPIKURE™ Curing Agent 3072

Introduction This moderate reactivity, rubber modified epoxy adhesive is intended as a general purpose formulation, characterized by development of high bond strengths to a variety of substrates including metals, plastics, concrete and glass. In addition, this formulation adapts itself very well to cure schedules requiring heat and pressure.

Suggested Uses

- Applications requiring higher performance than standard epoxy adhesives, especially improved peel strength and toughness. Adhesion is good with metals, ceramics, glass, wood and polar thermoplastics such as polystyrene, ABS and polycarbonate.

Features

- Rubber modified for improved peel strength and toughness
- Large cure temperature range: Room temperature to 125°C (257°F)
- Adhesion to a wide range of substrates

Formula

Material	Supplier	Pounds	Gallons
Part A			
EPON Resin 828	Hexion	80.0	8.25
EPON Resin 58034	Hexion	20.0	2.38
	Total A	100.0	10.63
Part B			
EPIKURE Curing Agent 3072	Hexion	32.0	3.95
	Total B	32.0	3.95
	Total Part A & B	132.0	14.58

Mixing Instructions

Part A

Introduce EPON Resin 828 into mixing vessel and begin agitation. Pre-heating is not necessary but heating to 49°C (120°F) will facilitate blending, especially with high shear mixers. Either high shear or planetary mixers should disperse adequately.

While mixing, add and disperse EPON Resin 58034 until uniform blend is obtained.

Part B

No mixing required, unless fillers are to be added.

This formulation is a basic starting point and can be modified with a large range of commercial fillers, depending on cost/performance requirements.

Pigment may be incorporated into either or both portions for the purpose of color coding. As with all pigments, their effect on the performance of the final, cured product should be investigated prior to production approval.

Typical Handling Properties

Table 1 / Handling Properties

	Units	Value
Resin : Curing Agent mix ratio	by weight	3.1 : 1
	by volume	2.7 : 1
Expected Working Life @ 25°C (77°F), 100 grams	min.	45
Form / Viscosity @ 25°C		
Part A	cP	12,480
Part B	cP	700
Blend	cP	4,600
Density @ 25°C		
Part A	lb/gal	9.44
Part B	lb/gal	8.10
Blend	lb/gal	9.12

Application Instructions

All surfaces to be bonded should be clean and free of dust, dirt, grease, oil or other contaminants to ensure maximum adhesion. Sandblasting or acid etching are the preferred procedures for preparing metal surfaces. Abrasion of the bonded surfaces in combination with vapor degreasing or solvent wiping are other common preparation methods.

Cure Schedule

Room Temperature: 2-3 days @ 25°C (77°F) or Elevated Temperature: Adhesive can be heat cured to shorten cure time. Maximum cure temperature should not exceed 121°C (250ºF).

Typical Cured State Properties

Table 1 / Adhesive Properties – Various Substrates

Test Property	Substrate	ASTM	Units	Value
Lap Shear Strength @ 25°C (77°F)		D-1002		
Cured 7 days @ 25°C	Aluminum		psi	3500
Cured 15 minutes @ 118°C (245°F)	Aluminum [1]		psi	4075
Cured 7 days @ 25°C	Epoxy / Glass Laminate		psi	4000
Cured 15 minutes @ 118°C	Epoxy / Glass Laminate		psi	4300
Cured 7 days @ 25°C	Cold rolled steel [2]		psi	4400
Cured 15 minutes @ 118°C	Cold rolled steel [2]		psi	4875
90° Peel Strength @ 25°C, width				
Cured 7 days @ 25°C	Aluminum foil to Aluminum [1]		lb/in.	16 - 18

[1] 2024T-3 acid etched

[2] Sand blasted

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 atwww.hexion.com