Technical Data Sheet

EPON™ Resin 58034

Product Description

EPON™ Resin 58034 is an elastomer modified epoxy functional adduct formed from the reaction of HELOXY™ 68 Modifier and a carboxyl terminated butadiene-acrylonitrile elastomer. Elastomer content is approximately 50 percent by weight. The primary use of EPON 58034 is in the modification of conventional epoxy systems to increase flexibility, adhesion properties and fatigue resistance.

Application Areas/Suggested Uses

- Adhesives

Benefits

- High elastomer content provides compounding flexibility to incorporate desired levels of elastomer into finished formulation
- Compatible with conventional bisphenol A epoxies
- Low viscosity
- Imparts improved peel strength and fatigue resistance into adhesive systems

Sales Specifications

Property	Value	Unit	Test Method
Color	10 max.	Gardner	ASTM D1544
Epoxide Equivalent Weight	275 - 305	g/eq	ASTM D1652
Viscosity at 25°C	40 - 80	P	ASTM D2196

Typical Properties

Property	Value	Unit	Test Method
Density at 25°C	8.4	lb/gal	ASTM D1475

Performance Properties

Table 1 / Effect of EPON™ Resin 58034 Concentration on Physical Properties of an Epoxy System

	Method	Units	A	B	C	D	E
EPON Resin 58034		pbw	---	10	20	30	40
EPON Resin 828		pbw	100	90	80	70	60
EPIKURE™ Curing Agent 3234		pbw	13	12.4	12	11.6	11.1
Handling Properties @ 25°C							
System Viscosity		cP	3,000	2,720	3,000	3,600	3,680
Gel Time, 100 gram mass		minutes	37	35	45	52	54
Cure Schedule		wk/°C	1/25	1/25	1/25	1/25	1/25
Cured State Properties [1]							
Heat Deflection Temperature	ASTM D648	°C	70	64	62	62	60
Tensile Strength, ultimate	ASTM D638	psi	10,300	8,320	5,860	4,940	3,450
Tensile Elongation at break		%	4.9	2.2	2.3	4.2	1.6
Flexural Strength	ASTM D790	psi	13,075	13,075	11,285	9,505	7,925
Flexural Modulus		ksi	480	480	400	320	2800
Compressive Strength, Ultimate		psi	11,500	11,500	12,600	5,450	5,046
Compressive Strength, Yield		psi	8,315	8,400	7,250	5,450	4,575
Hardness		Shore D	80	81	79	72	69

	Method	Units	A	B	C	D	E
Tensile Shear Strength	ASTM D638						
Aluminum/Aluminum [2]		psi	1,550	2,550	2,703	3,889	2,895
Steel/Steel [3]		psi	2,600	3,400	3,929	4,078	2,922
90° Peel Strength							
Aluminum/Aluminum		lbs/inch	1.0-1.5	14-16	14-16	16-18	13-15
Chemical Resistance							
Water absorption [3]							
1 Day		%	0.14	0.14	0.17	0.22	0.26
3 Days		%	0.21	0.26	0.31	0.40	0.46
2 Weeks		%	0.55	0.57	0.63	0.86	1.01

[1] Determined at 23 °C following one week cure at 25 °C.

[2] Acid etched 2024-T3 aluminum coupons.

[3] Sandblasted cold-rolled steel coupons

[4] 5-Mil aluminum foil bonded to 2024-T3 backing – both acid etched.

* Opacity of Systems 2 through 5 suggests heterogeneous cured state.

Table 2 / Effect of EPON Resin 58034 on Adhesive Properties of Various Systems

	Method	Units	A	B	C	D
EPON Resin 828		pbw	100	80	100	80
EPON Resin 58034		pbw	---	20	---	20
EPIKURE Curing Agent 3234		pbw	13	12	---	---
EPIKURE Curing Agent 3072		pbw	---	---	35	32
Cured State Properties [1]						
Hardness		Shore D	88	79	88	77
Tensile Shear Strength	ASTM D638					
Aluminum/Aluminum [2]		psi	1,520	2,703	1,690	3,490
Steel/Steel [3]		psi	2,610	3,929	2,700	4,050
90° Peel Strength						
Aluminum/Aluminum		lbs/inch	0.5-1.0	14-16	4-5	15-16

[1] Determined at 23 °C following one week cure at 25 °C.

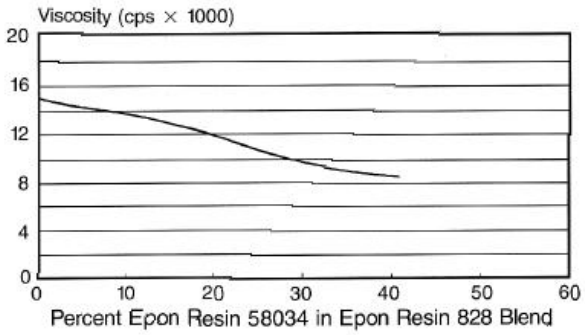
General Information

EPON 58034 is compatible with conventional bisphenol A based epoxy resins within the typically used range of concentrations (<40% by weight).

Concentration of this modifier required for optimum performance is dependent upon such factors as resin type, curing agent type, and specific performance requirements, but is generally found to be within the weight range of 10-40%. Characterization of EPON 58034 in combination with EPON Resin 828 is shown in Figure 1.

Typical physical and adhesive properties, when cured with a representative aliphatic amine and accelerated amidoamine are listed in Tables 1 and 2.

Figure 1 / EPON™ Resin 828/EPON Resin 58034 Blends



Safety, Storage & Handling

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

Please refer to the Hexion web site for Shelf Life and recommended Storage 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.

Packaging

Available in bulk and drum quantities.

Contact Information

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