

## Product information

# ANCAMINE<sup>®</sup> 2074

## Curing Agent

### DESCRIPTION

Ancamine 2074 curing agent is a modified cycloaliphatic amine. The product is intended for use as an ambient temperature curing agent for liquid epoxy resins, but it also enables curing to take place at relatively low temperatures and under high-humidity conditions.

### TYPICAL PROPERTIES

Property	Value	Unit
Appearance	White-White Liquid	
Colour	1	Gardner
Viscosity @ 77°F	60	cP
Amine Value	345	mg KOH/g
Specific Gravity @ 77°F	0.996	
Flash Point	219	°F
Equivalent	92	Wt/{H}
Recommended use Level	50	phr, EEW=190

### ADVANTAGES

- Very low viscosity
- Very low color
- Very good color stability
- High gloss
- Good chemical resistance (see following table)
- High strength and modulus

### APPLICATIONS

- Industrial, decorative and self-leveling flooring
- High-solids coatings
- Concrete sealers and repair materials

### STORAGE AND HANDLING

Refer to the Safety Data Sheet for Ancamine 2074 curing agent.

## SHELF LIFE

At least 24 months from the date of manufacture in the original sealed container at ambient temperature. Store away from excessive heat and humidity in tightly closed containers.

## TYPICAL CURE SCHEDULE

2–7 days at ambient temperature.

## TYPICAL HANDLING PROPERTIES

Property	A*	B*	Unit
Use Level	50	46.7	phr
Mixed Viscosity @ 77°F	1,030	530	cP
Gel Time (150g mix @ 77°F )	32	55	Min
Thin Film Set Time			
@ 77°F	4.5	8.3	h
@ 40°F	14	20	h
Peak Exotherm (100 g mix @ 77°F)	266	-	°F
Peak Exotherm Time	45	-	min

A\* Ancamine 2074 curing agent formulated with standard Bisphenol-A based (DGEBA, EEW=190) epoxy resin.

B\* Ancamine 2074 curing agent with 90% DGEBA resin (EEW=190) and 10% Epokil® 748 diluent (C<sub>12</sub>–C<sub>14</sub> alkyl glycidyl ether)

## TYPICAL PERFORMANCE PROPERTIES

Property	A*	B*	Unit
<b>(7 day cure @ 77°F)</b>			
Glass Transition Temperature	124	120	°F
Compressive Strength @ Yield	10,000	11,800	psi
Compressive Modulus	326	340	thousand psi
Tensile Strength	8,800	7,700	psi
Tensile Modulus	452	400	thousand psi
Tensile Elongation @ Break	4.6	4.5	%
Flexural Strength	14,500	12,200	psi
Flexural Modulus	560	450	thousand psi
Hardness	-	82	Shore D
Abrasion Resistance Weight Loss @ 1,000 cycles with wheel # 10	-	0.039	gm
Mar Resistance	-	1.35	kg
Heat Deflection Temperature	120	-	°F
Bond Strength (mild steel to mild steel)	1,200	-	psi

## SUPPLEMENTAL DATA

### CHEMICAL RESISTANCE

A study testing resistance to spilled chemicals was conducted on Ancamine 2074 curing agent formulated with a 90% bis-A resin (EEW=190) and 10% Epodil 748 diluent (C<sub>12</sub>-C<sub>14</sub> alkyl glycidyl ether) blend. Samples were cured for 7 days at 77°F; three samples were tested for each reagent. The immersion/recovery schedule for the testing is shown in Table 1. Percentage weight change and Shore D hardness were measured after each of the immersion periods. The samples were then allowed to recover before reimmersion for the next time period. Hardness retention is relevant in flooring applications where it indicates the ability of the floor to support traffic after exposure to chemical spills. Results of this study are presented in Table 2.

TABLE 1: SPILLAGE RESISTANCE TEST METHOD SCHEDULE

**Castings of 1/8" thickness are immersed for specified time period. Sample is then removed, weighed, and hardness tested immediately. Sample is then allowed to recover for specified time before re-immersion.**

**3 h imm → test → 24 h recover → 24 h imm → test → 24 h recover → 3 day imm → test → 3 day recover → 7 day imm → test → 7 day recover → 28 day imm → test → 7 day recover → 90 day imm → test**

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B\* Ancamine 2074 curing agent with 90% DGEBA resin (EEW=190) and 10% Epokil<sup>®</sup> 748 diluent (C<sub>12</sub>-C<sub>14</sub> alkyl glycidyl ether)



TABLE 2: SPILLAGE RESISTANCE FOR ANCAMINE 2074 WITH 90% DGEBA / 10% EPODIL 748 % WEIGHT CHANGE AND SHORE D HARDNESS AS A FUNCTION OF TIME

Reagent	Initial	After 3 hr		After 24 hr		After 3 days		After 7 days		After 28 days		After 90 days	
	Hard.	% wt.	Hard	% wt.	Hard	% wt.	Hard	% wt.	Hard	% wt.	Hard	% wt.	Hard
10% Acetic Acid	82	0.70	80	2.10	72	4.01	69	6.13	62	10.15	63	15.4	46
10% Lactic Acid	82	0.38	80	1.19	79	2.31	78	3.48	77	5.71	74	8.78	59
Toluene	82	0.06	80	0.81	75	3.07	65	6.89	52	20.30	46	18.32	52
Xylene	82	0.01	78	0.04	77	0.36	75	1.29	70	4.65	72	15.39	57
Trichloroethane	82	0.05	77	0.40	77	2.31	74	3.54	68	13.74	65	-	-
Methanol	82	3.13	66	8.37	38	12.83	25	6.23	30	5.71	35	-	-
Ethanol	82	0.99	75	2.89	63	5.55	46	8.55	45	9.34	43	6.81	52
Butyl Cellosolve	82	0.37	76	1.47	73	3.83	66	6.34	63	12.42	53	-	-
MEK	82	6.41	63	Destroyed									
Skydrol	82	0.11	77	0.46	77	1.26	74	2.18	74	3.67	75	6.03	56
70% Sulfuric Acid	82	0.22	83	0.11	82	0.15	81	0.21	81	0.16	81	-0.16	81
98% Sulfuric Acid	82	-15.60	80	Destroyed									
Deionized Water	82	0.07	82	0.31	81	0.54	82	0.93	82	1.65	80	2.14	80
50% Sodium Hydroxide	82	0.06	82	-0.05	82	-0.04	82	-0.03	83	-0.06	83	-0.10	63
Bleach	82	0.09	83	0.28	83	0.52	83	0.83	82	1.28	81	1.67	72

Note: Samples cured for 7 days at 77°F before testing

This study shows that Ancamine 2074 curing agent provides good resistance to a variety of chemicals. Chemical resistance of 2074-based formulations can be optimized for specific chemicals using different resin blends. For information on the chemical resistance of many other Evonik curing agents, please refer to publication number 125-9326 (Rev 1996): “Chemical Resistance for Ambient Cure Epoxy Formulations.”

**Cure Speed:** The thin film set time of Ancamine 2074 curing agent with standard bisphenol-A resin (DGEBA, EEW=190) in a 6 mil film is 4.5 hours at 77°F and 14 hours at 40°F. Using a 90% bisphenol-A resin / 10% Epodil 748 diluent blend, the thin film set time is 8.3 hours at 77°F, 18 hours at 50°F, and 20 hours at 40°F. To speed thin film set time and hardness development, Ancamine 2074 can be accelerated with modified aliphatic amine curing agents such as 10% Ancamine 2089M, 10% Ancamine 2432, or 10% Ancamine 2481.



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