Product information

ANCAMINE® 2759

Curing Agent

DESCRIPTION

Ancamine 2759 curing agent is a modified cycloaliphatic polyamine intended for use as an ambient curing agent for liquid epoxy resin. Systems based on Ancamine 2759 curing agent deliver fast cure speed and high resistance to carbamation and water spotting. Ancamine 2759 curing agent can be used to formulate solvent-free topcoats or self leveling and screed floorings where high chemical resistance is required. The product is free of nonyl phenol.

TYPICAL PROPERTIES

Property	Value	Unit	Method
Appearance	Yellow liquid		
Colour (Gardner)	max 2	Gardner	ASTM D 1544-80
Viscosity @ 25°C	250-400	mPa.s	Brookfield RVTD, Spindle 4
Amine Value	290-320	mg KOH/g	Perchloric Acid Titration
Specific Gravity @ 21°C	1.04		
Equivalent	95	Wt/{H}	
Recommended use Level	50	PHR	Cured with bisphenol-A based epoxy resin (EEW=190)

ADVANTAGES

- Fast cure speed at low temperature
- High resistance to carbamation
- High chemical resistance

APPLICATIONS

- Industrial flooring, screeds, topcoats, primers and grouts
- High solids coatings

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.

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PACKAGING AND HANDLING

Refer to the Safety Data Sheet for Ancamine 2759 curing agent.

TYPICAL HANDLING PROPERTIES*

Property	Value	Unit	Method
Gel Time @ 25°C	20 - 25	min	Techne GT-3 Gelation Timer, 150 g mix
Thin Film Set Time @ 25°C	4.0	h	ASTM D 5895 — BK Drying Recorder, Phase 3
Hardness Shore D 24 h / 7 d @ 25°C	80 / 85		ASTM D 2240
Hardness Shore D 24 h / 7 d @ 10°C	78 / 82		ASTM D 2240
Typical cure schedule	2-7	days	

SUPPLEMENTARY DATA

Ancamine 2759 Curing Agent Characteristics and Applications
For use over Epoxy Primers and midcoats, providing a unique combination of fast return to service, low temperature cure, good carbamation resistance and good chemical resistance for industrial floor applications.
The supplementary data outlines several product features of Ancamine 2759 curing agent in combination with diluted and undiluted epoxy resin. As a point of reference, performance of Ancamine 2759 curing agent is benchmarked against incumbent cycloaliphatic amine curing agents, “Cyclo-B” and “Cyclo-C”. Cyclo-B is an industrial standard cycloaliphatic curing agent for ambient temperature conditions; Cyclo-C is an accelerated cycloaliphatic curing agent, allowing low temperature cure down to 10°C while offering working time, aesthetics and cure speed. Starting point formulations for flooring application using Ancamine 2759 curing agent are included at the end of the technical datasheet. Tables 1 and 2 summarize the basic properties of the curing agents evaluated in this technical datasheet.

Handling and cure speed properties
The coating and self-leveling flooring systems based on Ancamine 2759 curing agent offer fast property development, allowing for a rapid return to service. The property development is demonstrated at 23 °C and 10 °C indicating that even at low temperatures the system will produce quick hardness build. Clear coatings based on Ancamine 2759 curing agent provide good cure at both ambient and sub ambient conditions (15°C) and are comparable to Cyclo-C. This is supported by cure speed results using a BK Drying Time Recorder as shown in Table 1. In addition, the cure speed also results in rapid mechanical property build in both coatings and thick castings. This is demonstrated by the Persoz pendulum hardness development and Shore D build compared to Cyclo-A.

TABLE 1: HANDLING AND CURE SPEED PROPERTIES OF ANCAMINE 2759 CURING AGENT IN COMBINATION WITH UNDILUTED DGEBA EPOXY RESIN

DGEBA, EEW187, h 12 Pa.s			Ancamine 2759	Cyclo-B	Cyclo-C
AHEW/[H]			95	115	95
Ambient Temperature (23°C – 60% RH)					
Gelation time, 150g mix		minutes	23	50	25
Mix Viscosity		mPa.s	1750	2950	1700
TFST	Phase 2 / Phase 3	h	3.5 / 4.5	6.0 / 7.5	3.5 / 4.5
Persoz Pendulum	Day 1 / Day 7	s	230 / 340	270 / 350	220 / 330
Shore D Build	16h / 24h / Day 7		82D/85D/86D	80D/83D/84D	82D/85D/86D
Carbamation	Day 1	1-5, 5 best	5	4	5
Low Temperature (10°C – 60% RH)					
TFST	Phase 2 / Phase 3	h	6.5 / 10	13 / 18	6.5 / 10
Persoz Pendulum	Day 1 / Day 7	s	175 / 300	100 / 300	160 / 290
Shore D Build	24h / 48h / Day 7		84D/85D/86D	30D/71D/80D	83D/85D/86D
Carbamation	Day 2	1-5, 5 best	2	1	1

TABLE 2: HANDLING AND CURE SPEED PROPERTIES OF ANCAMINE 2759 CURING AGENT IN COMBINATION WITH EPODIL 748 REACTIVE DILUENTS DILUTED DGEBA/F EPOXY RESIN

DGEBA/F/Epodil 748, EEW195, h 900 mPa.s			Ancamine 2759	Cyclo-B	Cyclo-C
AHEW/[H]			95	115	95
Ambient Temperature (23°C – 60% RH)					
Gelation time, 150g mix		minutes	30	80	30
Mix Viscosity		mPa.s	450	600	425
TFST	Phase 2 / Phase 3	h	6.5 / 7.5	8.5 / 11	7.0 / 7.5
Persoz Pendulum	Day 1 / Day 7	s	75 / 240	90 / 290	75 / 220
Shore D Build	16h / 24h / Day 7		65D/75D/81D	70A/55D/71D	55D/67D/81D
Carbamation	Day 1	1-5, 5 best	5	4	5
Low Temperature (10°C – 60% RH)					
TFST	Phase 2 / Phase 3	h	16 / 20	24 / 30	16 / 20
Persoz Pendulum	Day 1 / Day 7	s	40 / 100	50 / 210	35 / 100
Shore D Build	24h / 48h / Day 7		50D/75D/81D	—/42D/70D	40D/73D/75D
Carbamation	Day 2	1-5, 5 best	3	1	1

TRADEMARK REFERENCE

Ancamine® 2759 Curing Agent AncarezTM RZ4305 Epoxy Resin Dynol 980TM Surfactant Tego® Airex 990	Evonik
Kronos® 2160	Kronos International, Inc.
Bayferrox® 318M	Bayer
Elftex® 415 Pigment Black	Cabot Corporation
Barytmehl F Blanc Fixe Micro®	Sachtleben Chemie GmbH

FORMULATION 1: GREY TOPCOAT

Part A	Parts by Weight	Supplier
1. Ancamine 2759	22.1	Evonik
Part B		
2. Ancarez RZ4305	44.2	Evonik
3. Tego Airex 990	0.2	Evonik
4. Kronos 2160	22.2	Kronos
5. Elftex 415	0.2	Cabot
6. Blanc Fixe Micro	11.1	Sachtleben Chemie
Instructions:		
• Add components 2-3 and mix until homogeneous;		
• Charge 4-6 at low shear following by grinding at high shear rate		
TOTAL PARTS	100.0	°F

TECHNICAL DATA

Mix Ratio A/B (wgt)	22:78	Potlife by double viscosity (min.)	25-30
Mix Ratio A/B (volume)	32:68	Dry Times (h)	
Density (g/ml)		- Dry to Touch	6.5
- Part A	1.0	- Hard Dry	8.5
- Part B	1.6	- Thumb Twist Dry	9.0
- Total Mix A/B	1.4		

Mixing and Application Instructions
Add component A to component B and mix for 1-2 minutes using moderate shear mechanical mixing equipment to produce a homogenous liquid. The primer can be applied by brush, roller or squeegee.

FORMULATION 2: GREY SELF-LEVELLING FLOOR

Part A	Parts by Weight	Supplier
1. Ancamine 2759	10.0	Evonik
Part B		
2. Ancarez RZ4305	20.0	Evonik
3. Tego Airex 990	0.2	Evonik
4. Dynol 980	0.8	Evonik
5. Kronos 2160	6.0	Kronos
6. Bayferrox 318M	2.0	Lanxess
7. Barytmehl F	16.0	Sachtleben Chemie
Instructions:		
• Add components 2-4 and mix until homogeneous;		
• Charge 5-7 at low shear following by grinding at high shear rate		
Part C		
8. Quartz M34	45.0	Sibelco
TOTAL PARTS	100.0	

Mixing and Application Instructions
Add component A to component B and mix for 1-2 minutes using moderate shear mechanical mixing equipment to produce a homogenous liquid. Add component C to the mixture and continue to mix at low shear for another 1-2 minutes to complete the mixture preparation.

Application Instruction
Primed substrate is recommended for optimum flow and levelling. Following the mixing instructions, the self-levelling floor system is ready to apply onto (primed) concrete substrates using a squeegee or similar tool to spread the material. A subsequent spike rolling to promote de-aeration is optional.

TECHNICAL DATA

Mix Ratio A/B/C (wgt)	22:78	Potlife by double viscosity (min.)	25-30
30Mix Ratio A/B/C (volume)	32:68	Walk-on time (h)	
Density (g/ml)		- By Shore D (3 mm, 23°C)	<16
- Part A	1.0	- By Shore D (3 mm, 10°C)	24
- Part B	1.6		
- Total Mix A/B	1.4		

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