STANDARD CATALYSTS

CATALYST	9	11	14	15
Туре	Modified aliphatic amine	Modified aromatic amine	Anhydride	Polyamide
Viscosity	80 – 100 mPa.s	35 – 60 mPa.s (at 35°C)	Powder	20 – 40 Pa.s
Colour	Amber	Tan to dark brown	White	Black
Density (g/cm³)	0,99 - 1,01	1,0 - 1,1	0,77 - 0,79	0,95 - 0,98
Amount of Catalyst used	1,00	1,20	2,5	7,0 - 21,1
in relation to				
CATALYST 9				
(in x CATALYST 9)				
Pot life	45 min	4 h	24 h	2 h
(100 g at 25°C)				
Shelf life at RT	1 year in unopened	1 year in unopened	1 year in unopened	1 year in unopened
	containers	containers	containers	containers
Cure schedule	16 to 24 h at RT	2 h at 100°C	3 h at 150°C	16 to 24 h at RT
	or	+	+	or
	2 h at 65°C	4 h at 150°C	3 to 16 h at 180°C	2 h at 80°C
Service Temperature (°C)				
- Continuous	120	180	180	90
- Intermittent	150	200	200	120
Advantages	Chemical resistant	Outstanding chemical	High temperature	RT cure
· ·	Physical Strength	resistance	performance	Adjustable flexibility
	RT cure	Physical strength	Chemical resistance	Pot life
	Low viscosity	Pot life	Pot life	Low toxicity
	Low cost	Low viscosity		Wide mixing ratio
		High temperature		Low cost
		performance		
		Thermal shock resistant		
		(in some cases)		
Disadvantages	Brittle (not good for low	Elevated temperature	High temperature cure	High viscosity
	temperature)	cure	Odour	Softens at elevated
	Pot life	Stains skin		temperature
	Toxicity	May crystallise at RT		tomporataro
	Toxiolty	(heat to 65°C to liquify)		
		Cost		
		Toxicity		
Other comments	Good all-round epoxy	CATALYST 11 is subject	Keep away from moisture	Easiest epoxy curative to
Outer comments	curative	to partial crystallisation at	recop away from molecure	use
	Carative	RT		Can mix with epoxy even
		To remove crystals warm		without sophisticated
		gently to at least 65°C and		weighing equipment
		maintain until all crystals		worgining equipment
		have gone into solution		
		Storage is possible for several days at RT		
		· · · · · · · · · · · · · · · · · · ·		
		without crystallisation		



CATALYST	15 LV	17	23 LV	24 LV
Туре	Polyamide	Anhydride	Modified aliphatic amine	Modified aliphatic amine
Viscosity	5 – 15 Pa.s	slurry (at 35°C)	20 - 30 mPa.s	30 – 40 mPa.s
Colour	Black	Blue - grey	Water-white to slight	Water white to slight
			amber	amber
Density (g/cm ³)	0,95 - 0,98	1,3 - 1,5	1,00 - 1,03	1,00 - 1,03
Amount of Catalyst used	3,5 – 14,0	2,8	2,00	2,00
in relation to				
CATALYST 9				
(in x CATALYST 9)				
Pot life	2 h	24 h	60 min	30 min
(100 g at 25°C)				
Shelf life at RT	1 year in unopened	1 year in unopened	1 year in unopened	1 year in unopened
	containers	containers	containers	containers
Cure schedule	16 to 24 h at RT	3 h at 120°C	16 to 24 h at RT	8 to 16 h at RT
	or	+	or	or
	2 h at 80°C	2 h at 150°C	4 h at 65°C	2 h at 65°C
		+		
		16 h at 175°C		
Service Temperature (°C)				
- Continuous	65	230	90	90
- Intermittent	90	(260)	120	120
Advantages	RT cure	Very good high	Low viscosity	Low viscosity
	Adjustable flexibility	temperature performance	Low cost	Thermal shock resistant
	Pot life	Pot life	Thermal shock resistance	Tough impact resistant
	Low toxicity	Low viscosity	Pot life	Low colour
	Wide mixing ratio		Tough impact resistance	
	Low cost		Low colour	
Disadvantages	Softens at elevated	Elevated temperature	Longer cure at RT than	Pot life
	temperature	cure	CATALYST 24 LV	Cost
		High cost		
Other comments	Easiest epoxy curative to	CATALYST 17 may be		Has tendency to semi-
	use	solid at RT		thixotrope various epoxy
	Can mix with epoxy even	When warmed to 65°C, it		systems
	without sophisticated	will liquefy. Cool down to		
	weighing equipment	room temperature before		
		use.		

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STANDARD CATALYSTS

CATALYST	27-1	28	30	43
Туре	Modified aromatic amine	Modified aromatic amine	Modified aliphatic amine	Imidazole / aliphatic amine
Viscosity	250 – 300 mPa.s	250 – 300 mPa.s	70 – 90 mPa.s	40 – 60 mPa.s
Colour	Brown	Brown	Slight amber	Amber
Density (g/cm³)	1,00 – 1,05	1,00 – 1,05	0,92 - 0,96	0,90 – 1,10
Amount of Catalyst used in relation to CATALYST 9 (in x CATALYST 9)	1,75	1,75	2,70	0,75
Pot life (100 g at 25°C)	2 h	2,5 – 3 h	60 min	40 min
Shelf life at RT	1 year in unopened containers	1 year in unopened containers	1 year in unopened containers	1 year in unopened containers
Cure schedule	4 h at 120°C	4 h at 120°C	24 h at RT or 4 h at 65°C	16 to 24 h at 65°C and 2 to 4 hours at 150°C
Service Temperature (°C) - Continuous - Intermittent	175 200	175 200	90	205
Advantages	Chemical resistance Physical strength Pot life High temperature performance	Chemical resistance Physical strength Pot life High temperature performance	Non-blushing Resilient (more than CATALYST 9) Low viscosity RT cure Low colour	High temperature resistant Low cure temperature
Disadvantages	Elevated temperature cure Cost	Elevated temperature cure Cost	Cost	Brittleness
Other comments	Non-staining alternative for CATALYST 11; Cannot be used in combination with the following products: STYCAST 2057 / STYCAST 2651 MM Series / STYCAST 2741 LV / STYCAST 3050 / ECCOBOND 45 LV	Non-staining alternative for CATALYST 11	Excellent epoxy curative if appearance is important	Non-staining alternative for CATALYST 11



Health & Safety:

It is recommended to consult the Emerson & Cuming product literature, including material safety data sheets, prior to using Emerson & Cuming products. These may be obtained from your local sales office.

Note:

Please note that Technical Data Sheets may be updated from time to time. Customers are advised that the latest technical bulletins are always available upon request.

E12/10/2004-RVH/MR/JS/LM/HG/KS (0980s)

Attention Specification Writers:

The technical information contained herein is generally consistent with the properties of the material and should not be used in the preparation of specifications, as it is intended for reference only. This technical information has been derived from one batch of material and may not exactly match the properties of each individual delivered batch. For assistance in preparing specifications, please contact your local Emerson & Cuming office for details. Please contact Emerson & Cuming Quality Assurance for test method details.

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