# **CeTePox**<sup>°</sup> for your Epoxy Systems As individual as you are.



HARDENERS. RESINS. SYSTEMS. ADVANCED MATERIALS.

Let's talk about the future.

- Emission free epoxy systems.
- Waterborne epoxy curing agents.
- Long term resistance to chemicals.

### **CeTePox**<sup>®</sup> - Hardeners

#### An Aditya Birla Group Company

Name	Characteristics	Nonylphenol -free	Benzyl alcohol-free	Viscosity DIN EN ISO 3219 25 °C ca. [m Pas]	Recommend ed Quantity of Hardener [g] <sup>2)</sup>	H-Active - Equivalent Weight [g/Eq.]	Gardner Colour Index ISO 4630	Temp. Increase 23 °C → 40 °C appr. [min] <sup>1)</sup>	Properties and Fields of Application
<u>1015-01 NBF H</u>	Modified aliphatic polyamines	•	•	230	81	148	< 8	13	Free from nonylphenol and benzylalcohol, flexibilising, w ater-repellent; coatings, putties, castings
<u>1278 NF H</u>	Modified cycloaliphatic polyamine, free from benzyl alcohol	•	•	140 <sup>5)</sup>	46	78	< 6	30	Solvent and benzyl alcohol-free primers and coatings
<u>1285 H</u>	Modified cycloaliphatic polyamine	•		60 <sup>5)</sup>	49	85	< 2	13	Low -viscous; for superior quality coatings and highly filled mortars
<u>1287-01 NF H</u>	Modified cycloaliphatic polyamine	•		120	50	87	< 5	24	Very low viscous; for highly filled coatings, self- levelling and floor screed mortars
<u>1312 NF H</u>	EP-stabilized cycloaliphatic polyamine	•		450 <sup>5)</sup>	66	113	< 2	22	Superior quality coatings and mortars with good resistance to chemicals
<u>1312 FS H</u>	EP-stabilized cycloaliphatic polyamine	•		360	66	113	<2	24	Similar to <b>CeTePox</b> <sup>®</sup> <b>1312 NF H</b> ; suitable for food- and potable water contact
<u>1312-05 H</u>	EP-stabilized cycloaliphatic polyamine	٠		620	60	104	<2	18	Superior quality coatings and mortars with good resistance to chemicals and good through-cure
<u>1313-02 H</u>	EP-stabilized cycloaliphatic polyamine, accelerated			700	66	115	< 2	13	Superior quality coatings and mortars with good resistance to chemicals
<u>1385 H</u>	EP-stabilized cycloaliphatic polyamine	•		70 <sup>5)</sup>	49	85	< 2	26	Reactive, phenol-free hardener for coatings and self-levelling mortars; low yellowing
<u>1393 H</u>	EP-stabilized cycloaliphatic polyamine			190 <sup>5)</sup>	54	93	<2	23	Good stabilized standard hardener with excellent general properties
<u>1393 NF H</u>	EP-stabilized cycloaliphatic polyamine	•		235 <sup>5)</sup>	54	93	< 3	25	Nonylphenol-free version of CeTePox <sup>®</sup> 1393 H
<u>1393-02 H</u>	EP-stabilized cycloaliphatic polyamine, accelerated			400 <sup>5)</sup>	54	93	<2	14	Similar to CeTePox <sup>®</sup> 1393 H, faster curing
<u>1393-08 NF H</u>	EP-stabilized cycloaliphatic polyamine, accelerated	٠		300 <sup>5)</sup>	54	93	< 3	15	Nonylphenol-free version of CeTePox <sup>®</sup> 1393-02 H
<u>1410 H</u>	Modified heterocyclic polyamine	a)	•	550 <sup>5)</sup>	55	95	< 3	6	Fast curing mortar coatings, adhesives, putties, tar- epoxy-systems
<u>1434-01 NF H</u>	modified aliphatic polyamine	•	•	175	66 <sup>3)</sup>	134	< 6	32	Flexibilised self-levelling coatings, indoor mastic asphalt surfaces
<u>1490 H</u>	Modified aliphatic polyamine	a)	•	70 <sup>5)</sup>	50	90	< 2	53	Hardener with long pot-life and excellent yellowing resistance; decorative coatings and mortars
<u>1502 H</u>	EP-stabilized cycloaliphatic polyamine, accelerated	•		250	55 <sup>4)</sup>	102	<2	23	Hardener with excellent resistance to chemicals and yellowing; decorative mortars
<u>1510 H</u>	EP-stabilized cycloaliphatic polyamine	٠	٠	525	53	93	< 5	27	Low emission standard flooring hardener with excellent general properties
<u>1511 H</u>	EP-stabilized cycloaliphatic polyamine	•	•	475 <sup>5)</sup>	45 <sup>4)</sup>	82	< 3	29	Emission-free "full reactive" hardener with excellent general properties
<u>1537 H</u>	EP-stabilized cycloaliphatic polyamine, accelerated EP-stabilized cycloaliphatic	•		220 <sup>5)</sup>	50 <sup>4)</sup>	95	< 2	16	Accelerated hardener with good through-cure and improved resistance to water-spotting Stabilised hardener with good general properties
<u>1587 H</u>	polyamine	a)		440 <sup>5)</sup>	50	87	< 4,5	28	and longer pot-life for w armer climates Stabilised hardener w ith good through-cure and
<u>1588 H</u>	polyamine, accelerated	•		350	50 <sup>4)</sup>	93	< 2	15	w ater spotting resistance, excellent general properties
<u>1588 L H</u>	EP-stabilized cycloaliphatic polyamine	٠		240	50 <sup>4)</sup>	93	< 2	30	Non-accelerated version of CeTePox® 1588 H
<u>1590 H</u>	EP-stabilized aliphatic polyamine		•	200 <sup>5)</sup>	52	90	< 1	71	Stabilised hardener with long pot-life, suitable for warmer climates
<u>1594 H</u>	EP-stabilized cycloaliphatic polyamine	٠		180	54	94	< 2	15	Low -viscous stabilised standard hardener with excellent general properties
<u>1613 H</u>	Mannich-base, accelerator	•	٠	300 <sup>5)</sup>	-	0	< 7	-	Acceleration of epoxy hardeners (2-5 w% addition); in special cases for epoxy polymerisation
<u>1614 NF H</u>	Mannich-base, phenol-free	•		530	40 <sup>4)</sup>	75	max.4	12	Low -viscous fast-setting hardener for chemical- resistant coatings and epoxy mortars
<u>1693 H</u>	Mannich-base, phenol-free	•		1,300	54	93	< 6	11	Solvent-free chemical resistant epoxy systems
<u>1950 H</u>	EP-stabilized polyamidoamine	•		1,900	60	115	< 10	36	Primers for difficult, w et/moist substrates w ith excellent adhesion
<u>1951 H</u>	EP-stabilized polyamidoamine, accelerated	•		1,000	60 <sup>4)</sup>	115	< 10	25	Accelerated version of CeTePox® 1950 H
<u>1961 LV H</u>	EP-stabilized polyamidoamine, accelerated	•	•	300	60 <sup>4)</sup>	115	< 10	38	Low-viscous, emission-poor version of <b>CeTePox<sup>®</sup> 1951 H</b> , free from critical raw materials
<u>1976-02 NF H</u>	EP-stabilized flexibilised polyamines	•	٠	1,500	110-133 <sup>4)</sup>	254	max.8	24	Flexibilising hardener, for flexible coatings, (joint) sealants etc.
<u>VP 388-69 H</u>	Accelerated cycloaliphatic polyamines	•	•	200	40	75	max. 6	10	Low -viscous fast-setting hardener with mannich- base like through-cure and excellent properties
<u>VP 1728-9 H</u>	EP-stabilized cycloaliphatic polyamine	•		350	48 <sup>4)</sup>	88	< 5	17	Stabilised polyamine hardener yielding excellent resistance to chemicals

1) Temperature increase from 23 °C to 40 °C /100 ml mixture (insulated beaker) ,a) also available as nonylphenol-free version, 2) with 100 g CeTePox<sup>®</sup> 152 R, 3) with 100 g CeTePox<sup>®</sup> 134 R , 4) with 100 g CeTePox<sup>®</sup> 245 R , 5) at 23 °C

### CeTePox<sup>®</sup> - Systems

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Name	Characteristics	nonyl-phenol-fr	Mixing Ratio (A : B parts by weight)	Viscosity of Mixture DIN EN ISO 3219 23 °C appr. [mPas]	Temp. Increase 23 °C → 40 °C appr. [min] <sup>1)</sup>	Shore-D Hardness after 7d/23 °C ISO 868	Properties and Fields of Application
<u>103 NF S</u>	Tw o-component epoxy system, free from solvents, alkylphenols and benzyl alcohol	•	100 : 42	500	30	87	Low viscosity, excellent wetting and adhesion properties, low sensitivity to early water stress; primers on concrete, even when moisture-permeated from the backside
<u>132 NF S</u>	Tw o-component epoxy system free from solvents and alkylphenols	•	3:1	550	18	84	Low viscosity, excellent wetting and adhesion properties, low sensitivity to early water stress; primers on concrete
<u>140 S</u>	Tw o-component epoxy system free from solvents, alkyl phenols and benzyl alcohol	•	100 : 40	580	24	80	Low viscosity, excellent wetting and adhesion properties; low sensitivity to early water stress; low emission (according EMICODE); primers, mortars
<u>VP 1330 S</u>	Tw o-component epoxy system free from solvents and alkyl phenols	•	100 : 60	600	19	88	Excellent surface qualities, low yellowing, good water- spotting resistance; decorative sealers and coatings

1) Temperature Increase from 23 °C to 40 °C with 100 ml of mixture in an insulated beaker

## ${\rm CeTePox}^{{\rm I\!R}}$ - Epoxy Resins & Flexible Modifiers

Name	Characteristics	Viscosity DIN EN ISO 3219 appr. [mPas]	Epoxy Equivalent Weight appr. [g/Eq]	Epoxy Value appr. Eq./100 g]	Gardner Colour Index ISO 4630	Properties and Fields of Application
<u>100 R</u>	Unmodified bisphenol-A epoxy resin	15.000 (23 °C) 11.000 (25 °C)	188	0,53	<1	Medium viscosity, low cristallisation tendency, universal applicability in amine-curing, solvent-free epoxy systems
<u>152 R</u>	Reactive diluted bisphenol-A epoxy resin	1.030 (23 °C)	182	0.55	<2	Low viscosity; standard type with universal applicability
<u>159 R</u>	Reactive diluted bisphenol-A epoxy resin	165 (23 °C)	172	0.58	<2	Extremely low viscous; for highly filled primers/coatings
<u>200 R</u>	Unmodified bisphenol-F epoxy resin	5.000 (25 °C)	169	0.59	< 1	Medium viscosity, universal applicability in amine- curing, solvent-free epoxy systems
<u>212 R</u>	Unmodified bisphenol-A/ bisphenol-F liquid resin	110.500 (23 °C)	181	0,55	< 2	Medium viscosity, cristallisation-free universal applicability
<u>220 R</u>	Accelerated bisphenol-A/ bisphenol-F liquid resin	5.500 (25 °C)	195	0,51	<2	Medium viscous, cristallisation-free for accelerating through-cure
<u>245 R</u>	Reactive diluted bisphenol-A/ bisphenol-F liquid resin	950 (23 °C)	193	0.52	<2	Low viscosity, cristallisation-free; for solvent-free coating-systems, laminating and casting resins
<u>252 R</u>	Reactive diluted bisphenol-A/ bisphenol-F liquid resin	850 (23 °C)	179	0.56	<2	Low viscosity, cristallisation-free; for solvent-free coating-systems, laminating and casting resins
<u>293 R</u>	Reactive diluted bisphenol-A/ bisphenol-F liquid resin	800 (23 °C) 700 (25 °C)	193	0.52	<2	compared to <b>CeTePox</b> <sup>®</sup> <b>245 R</b> low er viscosity at low er temperatures, for solvent-free coating-systems

Name	Characteristics	Viscosity DIN EN ISO 3219 23 °C appr. [mPas]	Epoxy Equivalent Weight appr. [g/Eq]	NCO-Content (blocked) [%]	Gardner Colour Index ISO 4630	Properties and Fields of Application
<u>700 FM</u>	Branched polyether-urethane with capped isocyanate groups	61,000	900	2.6	-	solvent-free, for elastifying of amine-curing epoxy systems, e.g. highly flexible coatings, adhesives, sealing materials

### Waterborne CeTePox<sup>®</sup> Epoxy-Binders CeTePox<sup>®</sup> - Epoxy Resins

Name	Characteristics	Viscosity DIN EN ISO 3219 23 °C appr. [m Pas]	Epoxy Equivalent Weight appr. [g/Eq]	Epoxy Value appr. Eq./100 g]	Gardner Colour Index ISO 4630	Properties and Fields of Application
<u>245 R</u>	Reactive diluted bisphenol-A/ bisphenol-F liquid resin	920	193	0.52	<2	Low viscosity, cristallisation-free for solvent-free and water-borne coating-systems, laminating and casting resins
<u>440 R</u>	Emulsifiable BP-A/F resin with epoxy-functional emulsifier	6.700 (25°C)	198	0.51	< 2	Water-reducible, pigmentation possible, for water reducible primers and coatings
<u>464 R</u>	Special modified bisphenol-A/ bisphenol-F liquid resin	1700	208	0.48	< 3	Water-reducible, pigmentation possible, for water reducible primers and coatings
<u>490 E</u>	Emulsifier concentrate based on liquid bisphenol-A epoxy resin	320 (25 °C)	295	0.34	< 2	For manufacturing of water-dilutable liquid epoxy resins

### CeTePox<sup>®</sup> - Hardeners

Name	Characteristics	Viscosity DIN EN ISO 3219 23 °C appr. [mPas]	Recommended Quantity of Hardener [g] <sup>2)</sup>	H-Active - Equivalent Weight [g/Eq.]	Gardner Colour Index ISO 4630	Properties and Fields of Application
<u>1921 H</u>	Modified polyamidoamine, 50 % in water	18,000	100	210	< 12	Water reducible hardener; for water reducible primers and (finishing) coatings
<u>2320 H</u>	Water-reducible modified cycloaliphatic polyamine 80% in w ater	14,000	100	200	< 6	Water reducible hardener; for water reducible primers and (finishing) coatings, longer pot-life
<u>2419 H</u>	Water-reducible modified cycloaliphatic polyamine 70% in w ater	14,500	105	215	< 6	Water reducible hardener; for water reducible primers and (finishing) coatings, with pot-life indication
<u>2420 H</u>	Water-reducible modified cycloaliphatic polyamine 80% in w ater	6,750	100	185	< 6	Similar to <b>CeTePox</b> <sup>®</sup> <b>2419 H</b> , better dilution properties, higher solid content; with pot-life indication
<u>VP 1528-1 H</u>	Modified polyamidoamine, 50 % in water	43,000	146	210	max. 16	Water reducible hardener; for water reducible concrete primers and coatings, sealers

1) 100 ml mixture (insulated beaker), 50 % mixture solid content , 2) with CeTePox<sup>®</sup> 245 R, 3) no visible viscosity increase , 4) visible potlife increase with CeTePox<sup>®</sup> 245 R, solid content of mixture 50 w.-%,

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