



performance
in perfection

Your Benefits

- Global presence through international sales-network
- Consistent high product quality – Made in Germany
- Your partner for innovative products and tailor-made solutions
- Technical service with individual consulting/support
- Backward integration in NCN-chemistry production
- Reliability – our strength

Products	Typical Applications				
	Composites		Adhe- sives	Powder Coatings	Elect- ronic
	Prepreg	Filament Winding			
DYHARD® CU-Line	DYHARD® 100	-	-	✓	✓
	DYHARD® 100M	-	-	✓	✓
	DYHARD® 100S	✓	-	✓	✓
	DYHARD® 100SH	✓	-	✓	✓
	DYHARD® 100SF	✓	-	✓	-
	DYHARD® OTB	-	-	✓	-
	DYHARD® PIN	-	-	✓	-
	DYHARD® CAAB	-	-	✓	-
DYHARD® MB-Line	DYHARD® D50EP / DF50EP	✓	-	-	-
DYHARD® LI-Line	DYHARD® Fluid 111	✓	-	-	-
DYHARD® CAT-Line Urons	DYHARD® UR200	✓	-	-	-
	DYHARD® UR300	✓	-	✓	-
	DYHARD® UR400	✓	-	✓	✓
	DYHARD® UR500	✓	-	-	-
	DYHARD® UR700	-	-	✓	✓
	DYHARD® UR800	✓	-	✓	✓
	DYHARD® URAcc 13	✓	-	✓	-
	DYHARD® URAcc 57	✓	-	-	-
DYHARD® CAT-Line Imidazoles	DYHARD® MI-C / MI-FF	-	-	✓	✓
	DYHARD® PI-FF	✓	-	✓	✓
	DYHARD® MIA5	-	-	✓	✓
DYHARD® AD-Line	DYHARD® LA1	✓	-	✓	-
DYHARD® PM-Line	DYHARD® MCA10	✓	-	-	-
	DYHARD® MCA30	-	-	✓	-
	DYHARD® MCA40	-	-	✓	-
	DYHARD® MCA45	-	-	✓	-
DYHARD® SYS-Line	DYHARD® RF2200	-	✓	-	-
	DYHARD® Fluid222	-	✓	-	-



Product lines
for Thermosetting
Epoxy Systems

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DYHARD®

DYHARD® is the brand name for high-performance cross-linkers based on dicyandiamide curing agents, uron and imidazole accelerators, master batches and latent liquid cross-linkers.

DYHARD® products are used in the adhesives, powder coating and, in particular, in the composite materials industry.

The DYHARD® curing agents and accelerators enable the production of high performance parts for critical end-uses in a safe and economical manner.

DYHARD® cross-linkers are widely used in the automotive and aviation industry and in wind power plants.

They are also used in the electronic industry and for the manufacturing of sports equipment.

Furthermore they are being used in epoxy- and hybrid powder coatings.

DYHARD® CU-Line

DICYANDIAMIDE BASED CURING AGENTS

- Extraordinary long latency
- Particle size range from $d_{98} \leq 6 \mu\text{m}$ up to $d_{98} \leq 40 \mu\text{m}$
- Low toxicity, no vapor pressure, not corrosive, not hygroscopic, not skin irritant
- Cost effective dosage
- Highly cross-linked networks
- Ideal for prepregs, adhesives, powder coatings, laminates and casting systems
- Low shrinkage

DYHARD® MB-Line

MASTER BATCHES OF CURING AGENTS IN EPOXY RESIN

- Excellently pre-dispersed powders in epoxy resins
- Dust free work environment
- Easy dosing and quick dispensing in epoxy formulations
- Same reactivity and latency as corresponding amount of curing agent

DYHARD® LI-Line

LATENT LIQUID CURING AGENTS

- Liquid materials; no curing agent will be filtered by fibre meshes
- Latencies up to several weeks at room temperature
- Long pot life
- No premature viscosity increase
- Curing temperatures $< 100 \text{ }^{\circ}\text{C}$ with low enthalpy generation
- Dense polymer networks forming end Tg's $> 120 \text{ }^{\circ}\text{C}$
- Optical clear polymer glasses, low polymer shrinkage
- Very good mechanical properties
- Broad application area, e.g. aesthetical prepregs for the automotive industry or in filament winding applications

DYHARD® CAT-Line

URON ACCELERATORS

- Ideal to accelerate DYHARD® curing agents
- Easy to tune formulations
- Act as low enthalpy crosslinkers
- Very good balance of reactivity and latency
- Low toxicity
- Perfect fit for prepregs, adhesives and electronics

IMIDAZOLE ACCELERATORS

- Highly reactive in epoxy formulations
- Medium shelf life in epoxy formulations
- Very effective in dosage
- Very economical
- Highly recommended for powder coatings and laminates

DYHARD® PM-Line

PREMIXES OF CURING AGENTS AND ACCELERATORS

- Formulated cure systems for special applications
- Reduction of raw materials at customer
- Easier handling and reduced risk on weighing errors in production

DYHARD® SYS-Line

SYSTEMS OF FORMULATED EPOXY RESIN + CURING AGENT

- Special system for dedicated market segment or application technology e.g. filament winding

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