

Product Data Sheet

DYHARD® PM-Line

DYHARD® MCA40

DYHARD® MCA45

DYHARD® MCA40 and DYHARD® MCA45 are formulated curing agents for low temperature cure, respectively for very fast cure, high gloss epoxy powder coatings.

DESCRIPTION

In powder coating formulations based on solid bisphenol A epoxy resins with an EEW around 730, DYHARD® MCA40 and DYHARD® MCA45, being catalyzed dicyandiamide curing agents, are typically used in amounts around 3 %. The optimal ratio strongly depends upon the specific solid epoxy resin (EEW), the application, the process requirements, and has to be determined individually for each case.

DYHARD® MCA40 is more reactive, and can therefore be cured at an even lower temperature, compared to DYHARD® MCA45.



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DYHARD® MCA40 DYHARD® MCA45

ADVANTAGES

- High gloss
- Fast cure at low backing temperatures

TYPICAL APPLICATIONS

DYHARD® MCA40 and DYHARD® MCA45 are used as curing agent in high-gloss epoxy powder coatings.

SPECIFICATIONS

Product	DYHARD® MCA40	DYHARD® MCA45
Appearance	White to yellowish powder	White to yellowish powder
Particle size 98 %	max. 100 µm	max. 100 µm
Nitrogen content	57.5 – 60.5 %	60.5 – 63.5 %



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FORMULATION EXAMPLES

The formulation examples below refer to typical basic epoxy powder coating formulations. Depending on the resin used, fillers and additives the results and properties may change significantly.

The results show that with DYHARD® MCA40 at 140 °C backing temperature a very good mechanical performance is achieved. The optimal curing temperature with DYHARD® MCA45 is around 160 °C, at which the best finish, mechanical- and gloss performance are achieved.

Araldite GT 7004 (EEW = 733)	59.9 %		60.2 %	
DYHARD® MCA40	3.1 %			
DYHARD® MCA45			2.8 %	
Additives*	37 %		37 %	
Total	100 %		100 %	
Curing	140 °C 15 min	160 °C 15 min	140 °C 15 min	160 °C 15 min
Thickness [µm]	70	80	80	60
Gloss (60°) [%]	92	93	100	100
Brightness [L*]	89.7	91.1	91.6	89.9
Yellowness [b*]	1.1	4.7	1.1	0.8
Erichsen cupping [mm]	7	6	6	>9
Ball impact test [lbs]	80	40	80	100
Conical mandrel bend test [mm]	7	7	6	5
Cross cut-test	0-1	0	0	0
measured by DYHARD® laboratories – AlzChem Trostberg GmbH				

DYHARD® by AlzChem Trostberg GmbH
Araldite GT 7004: Epoxy resin by Huntsman

***Additives:** Araldite GT 2874: Flow-Agent by Huntsman (EEW = 805 g/mol) = 4 %,
Benzoin = 0.3 %,
Kronos 2160: Titanium dioxide by Kronos = 10.2 %,
Omycarb SV1: Calcium carbonate by Omya = 22.5 %

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HEALTH & SAFETY PRECAUTIONS

DYHARD® MCA40 and DYHARD® MCA45 are classified as CMR chemicals. Their use has to follow the proper health and safety precautions and information described in our Material Safety Data Sheet.

PACKAGING & STORAGE

DYHARD® MCA40 and DYHARD® MCA45 are available in 20 kg cartons. Alternative packaging can be made available on request.

Long storage and humidity may result in caking. Keep packaging tightly closed. Storage time from date of delivery is recommended not to exceed 6 months.



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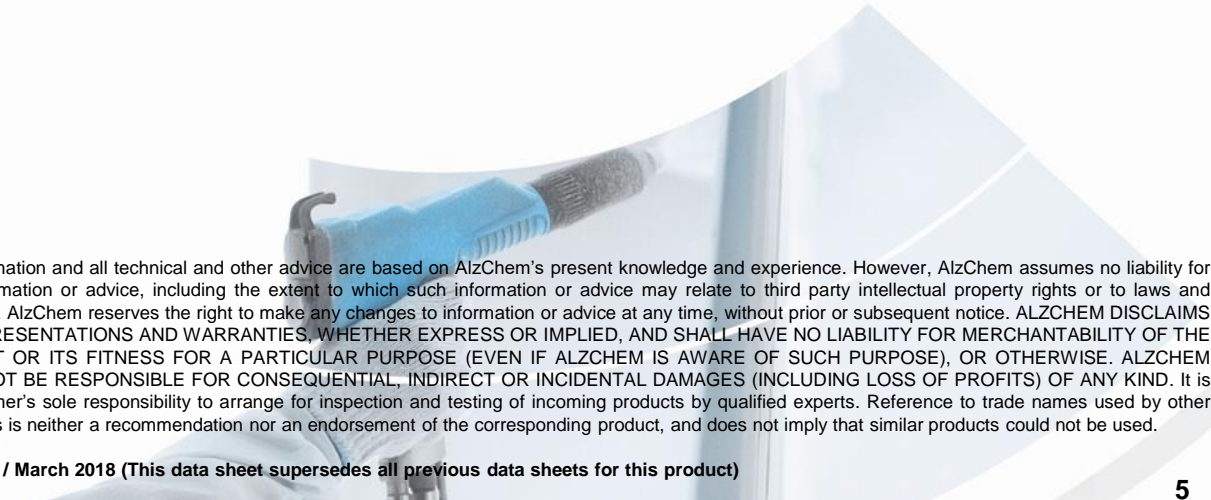
DYHARD® MCA45

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A blue and black heat gun nozzle is shown in the foreground, pointing towards the right. The background features a white envelope with a blue flap, partially open, creating a layered effect.

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