

## Technical Information

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Supersedes TI/ED 1292, any language/any date  
TI/ED 1293, any language/any date  
TI/ED 1294, any language/any date

Page 1 of 4



® = registered trademark of  
BASF Aktiengesellschaft,  
unless otherwise indicated

# Laromin® grades

## amine hardeners for epoxy resins

### Range

Laromin® A 327	aliphatic polyamine
Laromin® C 252	cycloaliphatic diamine
Laromin® C 260	cycloaliphatic diamine

## Properties

### Product specification

	A 327	Laromin® C 252	C 260
purity (by gas chromatography)	≥ 99 %	≥ 99 %	≥ 99 %
water content (EN ISO 760)	≤ 0.2 %		≤ 0.5 %
color value [APHA] (DIN ISO 6271)	≤ 20		≤ 12

### Other properties

density at 20C/68F (DIN 51757)	~ 0.928 g/cm <sup>3</sup>	~ 0.915 g/cm <sup>3</sup>	~ 0.944 g/cm <sup>3</sup>
solidification point (ASTM D 1015-55)		~ -18C/0F	(-7.1)(-0.6)C/19.2-30.9F
flash point (DIN EN ISO 2719)	117C/243F	111C/232F	173C/343F
ignition temperature (DIN 51794)	280C/536F	265C/509F	275C/527F
viscosity at 23C/73F	Rheomat 15, MS A, setting 13 Rheomat 15, MS B, setting 13	6-10 mPa·s 5-10 mPa·s	100-140 mPa·s
hydrogen equivalent mass	27	52	60

### Storage

Laromin® grades should be stored in a cool and dry place. Atmospheric moisture and carbon dioxide may impair efficiency. They can be stored for at least 1 year in their tightly sealed original containers.

Laromin® C 260 tends to crystallize at low temperatures. If this occurs, it can be reliquified and rehomogenized by heating to approx. 60C/140F. Crystallization does not impair the efficiency of Laromin® C 260, provided it has not reacted with atmospheric moisture or carbon dioxide.

### Diluent tolerance

Laromin® A 327 and Laromin® C 252 can be diluted with most organic solvents such as alcohols, glycol ethers and aromatic hydrocarbons. Laromin® A 327 is fully miscible with water, Laromin® C 252 with white spirit.

Ketones are of limited use since they may react with the amine group. Esters and chlorinated hydrocarbons are not suitable.

Laromin® C 260 can be freely diluted with most organic solvents (e.g., alcohols, esters, glycol ethers and aromatic hydrocarbons). Chlorinated hydrocarbons show not be combined with Laromin® C 260 as the two substances will react to form hydrogen chloride. Ketones are of limited use since they may react with the amine group.

### Compatibility

Laromin® grades can be mixed in any proportions with other amine hardeners, including with each other. They are compatible with special tars such as Epikom or Carbo-Mod products.

Laromin® C 260 is also compatible with plasticizers (e.g., Plastigen® G) and can be combined with blocked and prepolymeric isocyanates (Desmocap®<sup>1</sup> grades).

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### Application

#### Laromin® A 327 Laromin® C 252

Laromin® A 327 and Laromin® C 252 are used as a hardeners for epoxy resins in solvent-based coatings. They can also be used for hardening solvent-free coatings, GRP and encapsulating compounds for electronic components.

For hardening solvent-based epoxy resin coatings (e.g., industrial and anticorrosion paints), they are often incorporated as an in-situ adduct.

Solvent-free coatings, floor coatings or highly filled mortars for the building trade can be crosslinked with either Laromin® A 327 or Laromin® C 252 alone or in combination with each other and Laromin® C 260.

Mixtures with polyamidoamines or Mannich bases etc. are also used to harden epoxy resins.

#### Laromin® C 260

Laromin® C 260 is mainly used to harden low-viscosity liquid epoxy resins for low-solvent or solvent-free coatings, GRP and encapsulating compounds for the coatings, adhesives and electrical industries, the construction trade and pattern making, boatbuilding or aircraft construction.

Combinations of Laromin® C 260 with solid epoxy resins and solvents are used as hardeners for industrial and anticorrosion coatings. Laromin® C 260 can also be used (either alone or with other Laromin® grades) for curing concrete topping, self-leveling concrete, repair mortars, as well as highly filled wearing surfaces.

<sup>1</sup> registered trademark of Bayer AG

Mixtures of Laromin® C 260 with amidoamines, Mannich bases or blocked isocyanates are useful for certain applications.

## Processing

The amount of Laromin® needed to completely crosslink 100 g of an epoxy resin can be found from the following formula:

epoxy value x hydrogen equivalent = amount of hardener per 100 g of epoxy resin

For example, a low-viscosity aliphatic resin with an epoxy value of 0.22 will require

$$0.22 \times 27 = 5.9 \text{ g}$$

of Laromer® A 327 per 100 g of resin. In practice this will be 6–8 g for 100 g of epoxy resin.

If solvent-free mixtures of Laromin® C 252 and low-viscosity aromatic epoxy resins have to be cured at low temperatures (e.g., on building sites), an accelerator should be added. Good results can be obtained with a combination of Laromin® C 252 and Laromin® A 327, Laromin® C 260 together with salicylic acid or Mannich bases.

Solvent-free coatings hardened with Laromin® C 252 can be made flexible by adding a plasticizer or blocked isocyanates.

At room temperature or lower, Laromin® C 260 does not react completely with low-viscosity aromatic epoxy resins. A catalyst is necessary in such cases.

The crosslinking reaction can be accelerated by combining Laromin® C 260 with other, more reactive, Laromin® grades (e.g., C 252, A 327, H 243); the same effect can also be obtained by adding salicylic acid or a Mannich base.

Ensure that any extenders, pigments or modifiers present in the formulation are inert and compatible so as not to affect the reaction in any way.

Laromin® C 260 is liable to crystallize at low temperatures. To avoid this and at the same time improve the flow, it is advisable to use a mixture of Laromin® C 260 and 10–15 % Laromin® C 252 as the hardening component.

Because Laromin® grades are polyamines they must never be mixed with nitrocellulose as the heat generated by the strong exothermic reaction may start a fire.

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## Safety

When handling these products, advice and information given in the safety data sheet must be complied with. Further, protective and workplace hygiene measures adequate for handling chemicals must be observed.

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## Note

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights, etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

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