

What is Cellasto® MH24-35 RG250 EN

Cellasto® MH24-35 RG250 (cellular)

Cellasto® MH24-35 RG250 – microcellular polyurethane elastomer (cellular PUR) for spring and damping elements, raw density ~250 kg/m³

Cellasto® is a microcellular polyurethane elastomer from BASF – a cellular PUR material used primarily as a spring and damping element. The type MH24-35 RG250 has a raw density of about 250 kg/m³. Unlike compact rubber or plastic materials, Cellasto® is volume-compressible: it can be compressed under load without significant lateral expansion, and exhibits a progressive spring characteristic. This makes it the preferred material for jounce bumpers, spring aids and vibration isolators – above all in vehicle chassis.

Classification and basic character

Cellasto® belongs to the cellular polyurethane elastomers. Its microcellular structure with finely distributed, partly closed cells makes the material volume-compressible: under pressure the volume decreases without the component expanding much sideways (very low lateral expansion). This allows Cellasto® to act as a spring even in tight, enclosed installation spaces. The raw density – around 250 kg/m³ for MH24-35 – largely determines stiffness and load capacity: the higher the density, the harder and more load-bearing the element.

Springing, damping and fatigue durability

The outstanding feature of Cellasto® is the combination of a progressive spring characteristic, good vibration and noise damping (NVH) and very high dynamic fatigue durability over millions of load cycles. The force-deflection curve rises progressively with deflection – initially soft, increasingly firm towards the end. Cellasto® is also self-extinguishing and nitrosamine-free and retains its elasticity over a wide temperature range.

How Cellasto® is made and processed

Cellasto® is processed from polyurethane raw materials into microcellular moulded parts or semi-finished stock (moulding or block material). The final component geometry – and thus the spring characteristic – is set via shape, raw density and design. Elements can be cut and machined from semi-finished stock; adequate dust extraction should be ensured during machining. The design is carried out application-specifically based on the required force-deflection and dynamic stiffness characteristic.

Mechanical, thermal and resistance properties

As a cellular elastomer, Cellasto® MH24-35 RG250 reaches typical values in the range of a tensile strength around 2 N/mm², an elongation at break around 300 % and a tear resistance around 4 N/mm (guide values for the 250 kg/m³ density class). The compression set is low at around 5 %, and the rebound resilience is about 50 %. The service temperature range extends from about -30 °C to +80 °C (higher for short periods). In terms of resistance, Cellasto® is good against oils and weathering, conditional against petrol, but not suitable for permanent contact with acids and alkalis; in a permanently damp environment its hydrolysis resistance is limited.

When Cellasto® is the right choice

Cellasto® is worthwhile whenever springing, damping and permanent dynamic loading are required in a small installation space – for example:

- Spring aids and jounce bumpers in the chassis
- Shock absorber top mounts and coil spring isolators / pads
- Vibration and noise isolation (NVH) in vehicle and machine
- Unit and powertrain mounts with a progressive characteristic
- Light, corrosion-free spring/damper elements

When Cellasto® is NOT the right choice

Equally important are the limits of the material:

- Permanent contact with acids and alkalis (not recommended)
- Permanent petrol or fuel contact (only conditionally resistant)
- Permanently damp environment (limited hydrolysis resistance)
- Continuous service above about 80 °C
- Applications requiring a defined linear steel-spring characteristic or load-bearing structure

What does Cellasto® cost?

Cellasto® is a specialty engineering PUR material; the price depends strongly on raw density, moulded-part geometry, quantity and tooling costs and cannot be meaningfully stated as a pure per-kg price. Spring and damper elements made of Cellasto® are usually designed and costed as application-specific moulded parts. We are happy to quote binding prices on request based on your drawing and the required characteristic.

Processing at Liedtke

From Cellasto® semi-finished stock we produce spring and damper elements by cutting and machining; during machining we ensure adequate dust extraction. We support you in selecting the appropriate raw density and geometry for your required force-deflection characteristic. This is how we reliably produce dynamically load-bearing elements – from single pieces to series production.

Advantages and disadvantages at a glance

An honest assessment – and how the disadvantages can be mitigated in practice:

Advantages

- Volume-compressible – springs in a small space without lateral expansion
- Progressive spring characteristic, adjustable to the application (raw density)
- Very good dynamic fatigue durability (millions of load cycles)
- Good vibration and noise damping (NVH), light
- Self-extinguishing, nitrosamine-free, good oil and weathering resistance

Disadvantages

- Not resistant to acids and alkalis; petrol only conditionally
- Limited hydrolysis resistance in a permanently damp environment
- Continuous service limited to about 80 °C
- Characteristic depends on geometry – design required (no linear standard spring)

Practical tip: Cellasto® plays to its strengths wherever progressive springing and permanent dynamic loading are required in a small space – classically as a spring aid and jounce bumper in the chassis. The raw density (here RG250) is the key parameter for stiffness and load capacity; we design the specific characteristic together with you, application-specifically.

Typical Properties

- Volume-compressible (low lateral expansion)
- Progressive spring characteristic
- Very good dynamic fatigue durability
- Good vibration and noise damping (NVH)
- Self-extinguishing, nitrosamine-free
- Good oil and weathering resistance
- Low weight

Product Examples

- Spring aids and jounce bumpers
- Top mounts and coil spring isolators
- Spring pads and damping buffers
- Unit and powertrain mounts
- Vibration isolators in machines
- Light spring/damper elements

Typical Industries

- Automotive industry (chassis)
- Commercial and rail vehicle construction
- Mechanical and plant engineering
- Vibration and mounting technology
- Drive technology
- Industrial damping technology

- Stiffness adjustable via raw density

	Test Method	Unit	Value
General Properties			
Material			Microcellular polyurethane elastomer
Raw density	DIN 53420	kg / m ³	250
Colour			yellow
Fire behaviour	UL 94		self-extinguishing
Mechanical Properties (guide values)			
Tensile strength	DIN 53571	N / mm ²	≈ 2.0
Elongation at break	DIN 53571	%	≈ 300
Tear resistance	DIN 53515	N / mm	≈ 4
Rebound resilience	DIN 53512	%	≈ 50
Compression set (50 %, 22 h, 70 °C)	DIN 53572	%	≈ 5
Thermal Properties			
Service temperature	Average	°C	-30 ... +80
Resistances			
Oil resistance			good
Petrol resistance			conditional
Acids / alkalis			not recommended
Weathering resistance			good

Cellasto® is a registered trademark of BASF (BASF Polyurethanes GmbH). The mechanical values stated are typical guide values for the 250 kg/m³ density class (RG250), derived from the Cellasto® MH24 material family; the binding, grade-specific values must be taken from the current BASF/Cellasto® data sheet for the type MH24-35 RG250. The spring and damping behaviour depends on component geometry and raw density and must be designed application-specifically. The material is not suitable for permanent contact with acids and alkalis and has only limited hydrolysis resistance in a permanently damp environment. The values serve as an aid to material selection and are not a legally binding warranty of specific properties.