

Isodur 15

1,5-naphthalene diisocyanate [NDI]

Molecular formula: $C_{12}H_6N_2O_2$

CAS Number: 3173-72-6

Material Definition

Appearance: White to light yellow flaky crystalline solid

Melting Point: 126-130 °C

Density: 1.42 - 1.45 g/cm³

Purity: Min. 99%

Application

Isodur 15 is used to produce high-performance PU elastomers.

Solid PU elastomers are produced through chemical reactions between the ester polyols, Isodur 15 and glycols. These cover a hardness range from approx. 65 Shore A to 60 Shore D. Application products: Wheels and rollers for highest dynamic loads as well as technical parts and semi-finished products.

Cellular PU elastomers are made from ester polyols, Isodur 15 and water. These covered a density range of approx. 300 to 850 kg/m³ and combined high volume compressibility with minimal transverse expansion. Cellular Isodur 15 PU elastomer is used for the production of high-quality and high-performance damping elements such as buffers, springs and NVH [noise, vibration, harshness] components.

Isodur 15 based PU elastomers are characterized by:

- **Outstanding mechanical properties:** High tensile strength and excellent tear resistance, low compression set and low abrasion.
- **High dynamic resilience:** Low energy loss and low heat generation, high rebound elasticity.
- **Uniquely microcellular:** Combines high volume compressibility with minimal transverse expansion.

- **Heat resistance:** Long-term temperature resistance up to 80 °C, for short periods up to 120 °C.
- **Media-resistant:** Good resistance to UV radiation, ozone, fats and oils.

Cast Elastomers

NDI-based polyurethane cast elastomers can have a solid or cellular structure. In a multi-step process, these ultra-high-performance elastomers are produced through chemical reactions between polyols, NDI [1,5-naphtylene diisocyanate] and glycols or water. In the first step, prepolymers are produced from polyols and NDI. In the second step, these prepolymers are caused to react by intimately mixing with glycols [solid elastomers] or water [cellular elastomers] and the reaction mixtures are poured into molds.

Solid elastomers are cast at temperatures of over 100 °C; for cellular elastomers the temperatures are around 90 °C. The reaction mixtures harden in open/closed molds to form solid/cellular elastomers. After demoulding, the elastomers are subjected to a special ripening process, which is essential to achieve outstanding mechanical and dynamic material properties.

Handling, Storage and Packaging

Isodur 15 is stable for at least one year when stored in sealed original packing at temperatures below 30°C.

Standard pack size is in 40kg/drums with aluminium foil liner.

Regulatory Information

EU REACH registered: Yes

Availability

- Americas [United States, Canada, South America]
- APAC [Asia-Pacific]
- ANZ [Australia, New Zealand]
- EU [European Union]
- PRC [People's Republic of China]
- UK [United Kingdom]

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Stated storage and shelf life times are minimum guaranteed values for a period starting on the day of shipment. After this period has expired, the product requires additional quality control testing but may very well still be within specification. For more information, refer to our [Shelf Life Policy](#).

For updates on product information, please check this web page regularly:
<https://kautschuk.com/products/elastomer/isodur-15>