



**REHAU<sup>®</sup>**

**RAU-SR 101-199**  
**Etylene-propylene-ter rubber**  
**EPDM, APTK**

## Chemical structure

RAU-SR types 101 to 199 are vulcanized rubbers based on ethylene-propylene-ter polymers.

## Characteristic properties

Outstanding resistance to light and weathering and good resistance to cold. Outstanding resistance to detergents. Not oil-resistant.

## Thermal properties

Owing to its saturated molecular structure RAU-SR 101-199 is insensitive to heat ageing. Special vulcanisation processes give improved heat resistance. RAU-SR 101-199 can be used at temperatures up to 130°C and even up to 150°C when exposed to it for short periods of time.

As RAU-SR 101-199 is an amorphous polymer its cold resistance is also very good. The point at which it becomes brittle varies according to the hardness of the vulcanised material, but is always lower than -40°C.

## Mechanical properties

At a general level the mechanical properties of RAU-SR 101-199 are comparable to those of other synthetic rubbers. Its elasticity is however slightly less. The very good values for compression set and its low specific gravity should be specially noted. Due to its amorphous polymer structure the "rubber-technology" values are on the whole dependent on the formulation.

Light coloured grades are considerably inferior - especially as regards tear resistance - to the black grades.

Specifications for a black grade are shown for your guidance below:

## Black grade:

Shore hardness A (DIN 53505): 60±5

Specific gravity (DIN 53550): 1.11 g/cm<sup>3</sup>

Tensile strength (DIN 53504): 11 N/mm<sup>2</sup>

Elongation at break (DIN 53504): 300%

Modulus at 200% (DIN 53504): 7.8 N/mm<sup>2</sup>

Impact resilience (DIN 53512): 36%

Compression set (ASTM D-395 Meth. B): 12%

Tear propagation strength (DIN 53515):

140 N/cm

## Electrical properties

With its apolar structure RAU-SR 101-199 possesses excellent electrical insulation properties. Depending on the formulation they fluctuate within a particular range, so the characteristic figures of other polyolefins can provide an indication:

e.g.

Breakdown voltage (DIN 53581):

350 KV/cm

Dielectric number (DIN 53483): 3.0

Dissipation factor tg δ (DIN 53483):

(50-10<sup>6</sup> Hz) 3.10<sup>-4</sup>

## Chemical resistance

Owing to their paraffinic nature vulcanized rubbers in the RAU-SR 101-199 series are fairly resistant to acids and alkalis, even at higher temperatures. They are also resistant to polar solvents. Their resistance to aliphatic compounds (petrol, mineral oils etc.), aromatic compounds (benzole, toluene etc.) and chlorinated hydrocarbons, (trichlorethylene, methylene chloride etc.) is poor, due to their nature. For this reason the use of this material with such media cannot be recommended.

## Weathering and ageing resistance

As RAU-SR 101-199 is fully saturated in its polymer main chain and has some double bonding in the side chains, its resistance to the effects of oxidation is exceptionally high. Weathering resistance and ozone resistance is outstanding and, with the exception of a few expensive special rubber grades, it provides an absolute optimum for elastomer materials. The effects of weathering (sunlight, oxygen, ozone, industrial waste gases, humidity) even under extreme conditions over a protracted period of time do not cause any serious material damage.

## Combustibility

As a polyolefin RAU-SR 101-199 is basically combustible, but it is possible by specific formulation to achieve flame-resistant behaviour.

## Colouring

Normally it is 88000 black, but opaque colours are possible.

Hardness: black grades Shore A 45-80  
light coloured Shore A 55-80

## Bonding

A number of proven products are commercially available for bonding RAU-SR 101-199 either to itself or to other materials. A supplier list can be provided on request. The adhesives are classified according to the specific requirements of their applications, and provide a wide range of bonding strengths.

## Application

Because of their unusually good resistance to weathering, articles made of RAU-SR 101-199 are given preference in applications where good functioning demands permanent elasticity of the material under all weather conditions.

Excellent ageing resistance opens up possibilities of application where it is essential to have permanent elasticity, colour fastness, no brittleness and no tack. Resistance to hot detergents allows this material to be used for sealing in washing machines and dish-washers. Its most important uses can be summarized as follows:

Self-sealing profiles for windows, fascia panels and doors;

Door frame sealing profiles;

Tubing carrying hot materials;

Mouldings and profiles for washing machines and dish-washers;

Buffers, contact rollers, diaphragms and packing collars;

Bellows for building into machines and equipment.

## N.B.

Some grades have been specially developed with formulations specifically adjusted to eliminate inter-reaction when they come into contact with other materials. This rules out the possibility of discolouration or softening which might otherwise take place through the migration of plasticisers and anti-ageing agents.

The dimensions shown in this leaflet are approximate. In regard to tolerances, our Conditions of Sale apply exclusively.

We therefore recommend that you verify the suitability for your intended purpose of designs contained in this leaflet. The methods of application, utilization and processing of our products are outside our control and are therefore exclusively your responsibility. Our warranty covers consistency of quality of our products in accordance with our specification, as laid down in our recognized Conditions of Sale. Where there is any question of liability, any compensation shall be limited to the value of the goods supplied by us and used by you.

www.REHAU.com

RAUNET@REHAU.com

■ **AUS:** □ Brisbane: 27 Deakin Street, Brendale Queensland 4500, Tel.: 6 17/38 89 75 22 □ Melbourne: 9-11 Endeavour Way, Braeside Victoria 3195, Tel.: 3/95 87 55 44 □ Sydney: 91 Derby Street, Silverwater New South Wales 2128, Tel.: 2/97 48 17 88 ■ **CDN:** □ Moncton: 327 Murray Road, Little Shemogue, New Brunswick E4M 3P3, Tel.: 5 06/5 38 23 46 □ Montreal: 625 Lee Avenue, Baie d'Urfé, Quebec, H9X 3S3, Tel.: 5 14/4 57 33 45 □ St. John's: 13 Sagona Avenue, Donovan's Industrial Park, Mt. Pearl, Newfoundland, A1N 4P8, Tel.: 7 09/7 47 39 09 □ Toronto: 1149 Pioneer Road, Burlington, Ontario, L7M 1K5, Tel.: 9 05/3 35 32 84 □ Vancouver: 380 Riverside Road, Unit #2, Abbotsford, British Columbia, V2S 7N8, Tel.: 6 04/8 52 45 27 □ Winnipeg: 11 Plymouth Street, Unit 100, Winnipeg, Manitoba, R2X 2V5, Tel.: 2 04/6 97 20 28 ■ **GB:** □ Birmingham: Tameside Drive, Holford Way, Witton, Birmingham, B6 7AY, Tel.: 1 21/3 44 23 00 □ Glasgow: Phoenix House, Phoenix Crescent, Bellshill, North Lanarkshire, ML4 3NJ, Tel.: 0 16 98/50 37 00 □ Manchester: Brinell Drive, Irlam, Manchester, M44 5BL, Tel.: 1 61/77 77-4 00 □ Slough: Waterside Drive, Langley, Slough, SL3 6EZ, Tel.: 17 53/58 85-00 □ For the automotive sector, please contact the Ross-on-Wye Sales Office: Hill Court, Walford, Ross-on-Wye, Herefordshire HR9 5QN, Tel.: 19 89/76-26 00 ■ **HK:** □ Hongkong: 22/F, Silver Tech Tower, 26 Cheung Lee Street, Chai Wan, Tel.: 28 98 70 80 ■ **IRL:** □ Dublin: 9 Saint John's Court Business Park, Swords Road, Santry, Dublin 9, Tel.: 1 81 65 02-0 ■ **NZ:** □ Auckland: 14 Lorient Place, East Tamaki, Auckland, Tel.: 9/2 72 82 24 ■ **SGP:** □ Singapore: 1 King George's Avenue, # 06-00 REHAU Building, Singapore 208557, Tel.: 63 92 60 06 ■ **USA:** □ Chicago: 500 East Thorndale Rd., Unit H, Wood Dale, Illinois 60191, Tel.: 6 30/7 87 05 00 □ Dallas: 2615 Avenue E, East, Arlington, Suite #124, Texas 76011, Tel.: 8 17/6 40 30 92 □ Detroit: 33533 West Twelve Mile Rd., Suite 305, Farmington Hills, Michigan 48331, Tel.: 2 48/8 48 91 00 □ Grand Rapids: 5075 Cascade Rd. S.E., Suite A, Grand Rapids, Michigan 49546, Tel.: 6 16/2 85 68 67 □ Greensboro: 2606 Phoenix Drive, Suite 810, Greensboro, North Carolina 27406, Tel.: 3 36/8 52-20 23 □ Los Angeles: 1501 Railroad Street, Corona, California 92880-2501, Tel.: 9 09/5 49 90 17 □ Minneapolis: 7710 Brooklyn Blvd. Suite 207, Brooklyn Park, Minnesota 55443, Tel.: 763/5 85 13 80 □ New York: 3 North Street, Waldwick, New Jersey 07463, Tel.: 2 01/4 47-11 90 □ Seattle: 18900 8th Avenue South # 1000, Seatac, Washington 98148, Tel.: 2 06/4 33 18 83

■ For European exporting companies and if there is no sales office in your country please contact: REHAU AG+Co, Export Sales Office, P.O. Box 30 29, 91018 Erlangen/Germany, Tel.: +49 (0) 91 31 92 50, Export.Sales.Office@REHAU.com