

**NON-FUNCTIONALIZED LIQUID POLYBUTADIENE****GENERAL DESCRIPTION**

POLYVEST® 110 is a stereospecific, low viscous and unsaponifiable liquid polybutadiene with a high content of 1,4-cis double bonds having the following composition:

- 1,4-cis double bonds            approx. 75%
- 1,4-trans double bonds        approx. 24%
- 1,2-vinyl double bonds        approx. 1%

**SPECIFICATION**

Property	Value	Unit	Test Method
Viscosity at 20°C	700 - 860	mPa s	DIN EN ISO 3219
Acid Number	≤ 0.3	mg KOH/g	DIN EN ISO 2114
Peroxide Number	≤ 10	mval/kg	DGF-method: C-VI-6a (84)

**TYPICAL DATA**

Property	Value	Unit	Test Method
Mean Molar Mass	approx. 2.600	g/mol	GPC (polystyrene standard)
Iodine Number	420 - 480	g Iod/100 g	DIN 53 241
Density at 20°C	0.90 - 0.92	g/cm <sup>3</sup>	DIN ISO 2811-1
Gardner Color	≤ 1		DIN EN ISO 4630
Flash Point	approx. 180	°C	DIN EN ISO 2719
Ignition Temperature	approx. 360	°C	DIN 51 794
Pour Point	approx. - 55	°C	DIN ISO 3016

**SUPPLY FORM**

Viscous liquid

## PACKAGING AND TRANSPORT

- steel drums (content 190kgs); minimum order quantity 4 drums on pallet
- delivery in road tankers

## GENERAL USE AND APPLICATIONS

Due to its high content of 1,4-cis double bonds the apolar, hydrophobic hydrocarbon resin POLYVEST® 110 is a highly reactive binder featuring the following characteristics:

- high chemical resistance
- high water resistance
- high electrical insulation properties
- high cold resistance
- good solubility in aliphatic, aromatics and ethers
- good compatibility with hydrocarbon resins, rosin resins and zinc resonates

In this form POLYVEST® 110 is used in the following areas of application:

- adhesive and sealant compositions
- polymer printing plates
- offset printing inks
- plasticizer for rubber compounds
- binder for recycled rubber compounds
- electrical insulations and potting compounds
- release agents for polyurethane foams
- modifier of resin systems
- modifier of vegetable oils
- binder synthesis for anodic dip coatings
- chlorinated rubber synthesis
- binder synthesis for oxidative drying lacquers
- binder for oxidative drying alkyd resins
- binder for dusty and dry quartz sand
- binder for soil stabilization
- impregnation of mineral substrates
- impregnation of cylinder head gaskets

We are pleased to send guideline formulations.

## STORAGE

POLYVEST® 110 is stable for at least 1 year with exclusion from air, light and moisture at storage temperatures below 25°C.

## SAFETY AND HANDLING

POLYVEST® 110 reacts with atmospheric oxygen to form peroxides and cross-linking and is therefore packed and delivered under a blanket of inert gas (nitrogen). During handling care has to be taken to exclude atmospheric oxygen as much as possible from the product. Opened containers should be blanketed with inert gas again and closed tightly.

### FOR THE APPROPRIATE USE OF POLYVEST® 110 FOR POLYMER MODIFICATIONS THE PEROXIDE NUMBER IS OF IMPORTANT RELEVANCE:

If, as a result of careless handling, the peroxide number rises to values above 10 meq/kg difficulties will arise. For example on reaction with maleic anhydride, a significant increase in the viscosity of the adducts may occur and in extreme cases, the adducts will gel.

#### Definition:

The peroxide number (PON) specifies the milliequivalents of oxygen in 1kg POLYVEST® 110 detectable under the conditions of below mentioned method. The PON is a measure for the content of peroxidically bound oxygen and allows identifying the extent of autoxidation which has taken place so far.

#### Procedure:

Method according D.H. Wheeler (see DGF Standard Methods, Section C, Fats)

All operations should be carried out in diffused daylight or artificial light (avoid any direct sunlight). All apparatus must be cleaned and be free of any oxidizing or reducing substances.

10g POLYVEST® 110 are weighed accurately into an Erlenmeyer flask which can be closed with a ground glass stopper and are dissolved in 50ml of a mixture of acetic acid and chloroform AR (3:2). Then 0.5ml of a fresh prepared saturated potassium iodide solution is added, the flask is closed and to be shaken immediately. Exactly 3 minutes after bringing in the potassium iodide, 30ml of demineralised water is added. The liberated iodine is then titrated with 0.01 normal sodium thiosulphate solution with vigorous shaking, using starch solution as indicator (starch solution: 1% dissolved in demineralised water). A blank test is carried out in the same manner and the consumption of standard solution is to be taken into account appropriately.

#### Calculation:

According to the amount of thiosulphate solution consumed, its normality and the weight of the test portion, the peroxide number is calculated as follows:

$$\text{Peroxide No.} = \frac{a \times n \times 1,000}{E}$$

a = consumption of thiosulphate solution in [ml]

n = normality of the thiosulphate solution

E = weight of test portion in [g]

We are pleased to send our current Safety Data Sheet.

Marl, September 14, 2021; This data sheet replaces all former issues.

POLYVEST® is a registered trademark of Evonik Industrie AG or one of its subsidiaries.

**Disclaimer**

This information and all further technical advice are based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.

**EVONIK OPERATIONS GMBH**

Coating & Adhesive Resins  
Paul-Baumann-Str. 1  
45764 Marl  
Germany

**EVONIK CORPORATION**

Coating & Adhesive Resins  
299 Jefferson Road,  
Parsippany, NJ 07054-0677  
USA

**EVONIK SPECIALITY CHEMICALS  
(SHANGHAI) CO., LTD.**

55, Chundong Road  
Xinzhuang Industry Park  
Shanghai, 201108  
P.R. China

For contacts in your country, please visit: [www.evonik.com/adhesive-resins-contact](http://www.evonik.com/adhesive-resins-contact)  
E-mail: [adhesives@evonik.com](mailto:adhesives@evonik.com)  
[www.evonik.com/designed-polymers](http://www.evonik.com/designed-polymers)

