Product information

POLYVEST® eCO 130 Bio

ISCC certified material (mass balance approach)

NON-FUNCTIONALIZED LIQUID POLYBUTADIENE

GENERAL DESCRIPTION

POLYVEST® eCO 130 Bio 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. 77%
- 1,4-trans double bonds approx. 22%
- 1,2-vinyl double bonds approx. 1%

An amount of **bio-based** material equivalent to **99.9% of POLYVEST® eCO 130 Bio** is allocated to this product using the ISCC mass balance approach. With this product, Evonik is contributing to the replacement of virgin fossil resources by renewable feedstocks an thus, supporting the circular economy/bioeconomy.

SPECIFICATION

Property	Value	Unit	Test Method
Viscosity at 20°C	2,700 - 3,300	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. 4,600	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^3	DIN ISO 2811-1
Gardner Color	≤ 4		DIN EN ISO 4630
Flash Point	approx. 200	°C	DIN EN ISO 2719
Ignition Temperature	approx. 350	°C	DIN 51 794
Pour Point	approx. - 50	°C	DIN ISO 3016

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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® eCO 130 Bio 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® eCO 130 Bio 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
· release agents for polyurethane foams
· cell opener for polyurethane foams
· defoamers
· modifier of resin systems
· modifier of vegetable oils
· chlorinated rubber synthesis
· binder for dusty and dry quartz sand

We are pleased to send guideline formulations.

STORAGE

POLYVEST® eCO 130 Bio is stable for at least 1 year with exclusion from air, light and moisture at storage temperatures below 25°C.

SAFETY AND HANDLING

POLYVEST® eCO 130 Bio 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® eCO 130 Bio 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® eCO 130 Bio 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® eCO 130 Bio 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% dissovled 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, March 9th, 2022; This data sheet replaces all former issues.
POLYVEST® is a registered trademark of Evonik Industrie AG or one of ist subsidiaries.

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