

# VINNAPAS® POLYVINYL ACETATE: YOUR FIRST CHOICE FOR HIGH CLASS GUM BASE

VINNAPAS® polyvinyl acetate (PVAc) is a key ingredient in all modern types of gum base worldwide. Gum base is the water-insoluble component of chewing gum, and serves as the carrier for sweeteners and flavoring.

For more than 60 years, WACKER has been marketing PVAc to the chewing gum industry under the trade name VINNAPAS®. It is produced by bulk polymerization. These odorless and tasteless thermoplastic resins are manufactured to the highest international food-industry standards.

## Important Ingredient of Gum Base

VINNAPAS® PVAc is a key ingredient for obtaining the right texture and excellent chew properties of gum base. Furthermore, it has a very important impact on the flavor and sweetener release profile.

Other advantages are:

- High thermal stability
- High chemical resistance
- Good hydrophobic/hydrophilic balance
- No antioxidants required
- Less plasticizer needed
- High storage stability

The products do not need to be labeled according to Regulations 1829/2003/EC and 1830/2003/EC. VINNAPAS® products do not contain allergens listed in Directive 2003/89/EC or Directive 2006/142/EC.

## Product Overview

VINNAPAS® PVAc is manufactured to highest international food-industry standards. Clear, colorless resins in a granulated, dosable form are prepared by the polymerization of vinyl acetate. The products are dust-free. The free-flow properties allow easy handling and precise dosage.

Production and analysis according to FSSC 22000, ISO 9001, ISO 14001 ensures constant high quality from the starting raw materials to the finished products. A global supply chain with production sites in Burghausen (Germany) and Nanjing (China) guarantees highest quality and supply security.

VINNAPAS® polyvinyl acetate resins comply with gum base/chewing gum regulations in all major markets globally.

## Product Range

The product range contains homopolymers of vinyl acetate with different molecular weights. Higher molecular weights generally lead to a higher softening point and higher elasticity resulting in a firmer chew of the finished gum. Furthermore, higher molecular weight leads to better film-forming properties, i.e. more stable bubbles in bubble-gum applications.

A further distinction of the grades is made according to the manufacturing site: Burghausen (B grades) and Nanjing (N grades). Materials from the two sites display the same properties and can be used interchangeably.

This unique product range enables our customers to produce a wide variety of tailor-made gum base products. Special VINNAPAS® PVAc grades are available upon request.



## Properties and Technical Data

Grade	Viscosity <sup>1,5</sup> [mPa.s]	Molecular weight <sup>2,6</sup> Mw [g/mol]	Mettler softening point <sup>3,6</sup> [°C]	Melt viscosity <sup>4,6</sup> at 120°C [Pa.s]	Glass transition temperature <sup>6</sup> T <sub>g</sub> [°C]
VINNAPAS® B 1.5 sp	1.2 – 1.4	15,000	85	appr. 30	appr. 32 – 34
VINNAPAS® N 1.5 sp					
VINNAPAS® B 5 sp	1.6 – 2.0	25,000	95	appr. 120	appr. 33 – 35
VINNAPAS® N 5 sp					
VINNAPAS® B 14 sp	1.9 – 2.3	33,000	101	appr. 400	appr. 37 – 39
VINNAPAS® N 14 sp					
VINNAPAS® B 17 sp	2.5 – 3.0	40,000	107	appr. 600	appr. 38 – 40
VINNAPAS® N 17 sp					
VINNAPAS® B 30 sp	3.0 – 3.5	50,000	113	appr. 1,300	appr. 38 – 40
VINNAPAS® N 30 sp					
VINNAPAS® B 60 sp	3.5 – 5.0	65,000	119	appr. 2,600	appr. 41 – 43
VINNAPAS® N 60 sp					
VINNAPAS® B 100 sp	5.0 – 6.5	90,000	133	appr. 5,000	appr. 41 – 43

1) ASTM D445-06; 10 wt % in ethyl acetate

2) Size exclusion chromatography; PS standard; THF; 60 °C, weight average

3) ASTM 3104

4) Bohlin high temperature viscosity; Bohlin CVO 120, Heating rate 5 °C/min, parallel plates

5) For current specification please check technical data sheet

6) The above data are given as a guideline only; they are not intended as product specifications

## Additional Characteristics of all Grades

Residual monomer content VAM [ppm]	< 5
Free acetic acid [%]	< 0.05
Loss on drying [wt %]	< 1.0
Appearance	Clear, colorless, odorless and tasteless
Bulk density [g/l]	appr. 700
Soluble in	Methanol, ethanol 95%, acetone, ethyl acetate, chloroform, toluene
Available packaging	Paperbag, 25 kg net weight; Big Bag, 1,000 kg net weight

## Product Storage

VINNAPAS® PVAc exhibits excellent stability when stored under cool and dry conditions. However, as thermoplastic materials, it is strongly recommended that VINNAPAS® PVAc grades be transported below 20 °C to retain their free-flow characteristics.

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The data presented in this medium are in accordance with the present state of our knowledge but do not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this medium should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The information provided by us does not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the product for a particular purpose.