



**SPOLANA a. s.**  
**NERATOVICE**

**POLY (VINYL CHLORIDE)**

## **NERALIT® PVC - homopolymer**

Since 1975, when SPOLANA Neratovice launched its petrochemical ethylene processing programme, suspension PVC (S - PVC ) has been made in the enterprise.

The production unit, erected on the basis of Húls technology, has been improved over the time according to the latest developments and environmental requirements. Today, the unit is capable of producing as high as 125 thousand tons of S - PVC a year.

The basic range of selected S - PVC types finds successfully both domestic and foreign outlets under the trademark **NERALIT**.

The process of **NERALIT** poly (vinyl chloride) production relies on suspension polymerization of vinyl chloride in water at the presence of initiators and stabilizers. After separation by centrifugation and drying, the resulting product is a fine white powder composed of grains with narrow distribution of particle size.

The produced types of S - PVC **NERALIT** (powder) are designated with a three - digit type code, the first two digits of which indicate K - value - a measure of the mean molecular weight of the polymer.

The types produced are: **NERALIT 581**  
**NERALIT 601**  
**NERALIT 682**  
**NERALIT 652**  
**NERALIT 702**

The quality of S - PVC **NERALIT** is continuously maintained superior and consistent and meets the customers' requirements.

Each delivery is identified with its production batch number and accompanied by a certificate of quality issued by the Quality Control Department of the company.

All produced types of **NERALIT** are approved for use to make products coming in contact with food and such products may be also exported. This is provided by the excellent technology which ensure highest quality of the product. Full adherence to the ISO and DIN standards is guaranteed.

As not all PVC users are equipped for homogenization of suspension PVC powder with additives, part of **NERALIT** is processed by the company to their dry blends or even further to granules.

**NERALIT** is supplied to all parts of the world, as requested by the customer and in compliance with international regulations, either in bulk in tank wagons or trucks or in 25 kg paper bags placed and fixed on pallets or in big bags placed on pallets.

Detailed information on the individual types of S - PVC and its granulates and on deliveries of dry blends are given in catalogue sheets.

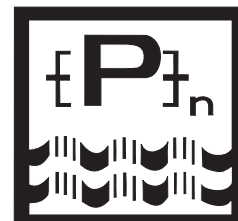
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## **NERALIT® Suspension PVC (powder)**

### **Type 581**

**Characteristic:** **NERALIT 581** is a low molecular type of PVC with a higher apparent density, low porosity of grains, and appropriate for processing to hard products. It is a polymer of high purity with good thermal stability which can be used to make transparent products.

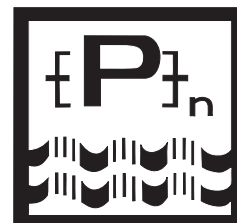
**Use:** **NERALIT 581** is designed for processing by extrusion (sections, tubes, fittings), injection moulding (semifinished products for production of toys), blowing (light wrapping materials), and calandering (rigid sheets for forming). **NERALIT 581** is used to make NERALIT granulates.

<b>Specifications:</b>	<b>METHODS</b>	<b>LIMITS</b>
K - value	ČSN EN ISO 1628-2 (64 0355)	58 ± 1
Apparent density	ČSN EN ISO 60 (64 2101)	0.600 ± 0.030 g / ml
Particle size distribution:	ČSN EN ISO 4610 (64 0220)	
0.063 mm, min.		95 %
0.250 mm, max.		2.0 %
0.500 mm		0 %
Volatiles, max.	ČSN 64 0311	0.3 %
Impurities, max.	PN 64-002	3 pcs / 15 g
Impurities over 0.250 mm, max.	PN 64-002	3 pcs / 50 g
Ethyl ether extract, max.	ČSN EN ISO 6427 (64 0234)	1.0 %
VCM residue, max.	ŘJKA-GC-02	2 ppm

**Packing:** Responding to the customer's requirements, **NERALIT 581** can be supplied either in bulk (tank trucks or wagons), packed in EKOPACK or REPASAK designated multiply bags 25 kg each or in big bags. The bags are placed on pallets 1 000 x 1 200 mm wrapped into shrink film, big bags on pallets 1 000 x 1 200 mm.



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## **NERALIT® Suspension PVC (powder)**

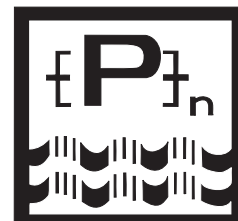
### **Type 601**

**Characteristic:** **NERALIT 601** is a low molecular type of PVC with a higher apparent density, low porosity of grains, and appropriate for processing to hard products. It is a polymer of high purity with good thermal stability which can be used to make transparent products.

**Use:** **NERALIT 601** is designed for processing by extrusion (electrical installation tubes, fittings, drainage pipes), injection moulding (tube couplings), blowing (bottles), and calandering (rigid sheets).

<b>Specifications:</b>	<b>METHODS</b>	<b>LIMITS</b>
K - value	ČSN EN ISO 1628-2 (64 0355)	60 ± 1
Apparent density	ČSN EN ISO 60 (64 2101)	0.590 ± 0.030 g / ml
Particle size distribution:	ČSN EN ISO 4610 (64 0220)	
0.063 mm, min.		95 %
0.250 mm, max.		2.0 %
0.500 mm		0 %
Volatiles, max.	ČSN 64 0311	0.3 %
Impurities, max.	PN 64-002	3 pcs / 15 g
Impurities over 0.250 mm, max.	PN 64-002	3 pcs / 50 g
Ethyl ether extract, max.	ČSN EN ISO 6427 (64 0234)	1.0 %
VCM residue, max.	ŘJKA-GC-02	1 ppm

**Packing:** Responding to the customer's requirements, **NERALIT 601** can be supplied either in bulk (tank trucks or wagons), packed in EKOPACK or REPASAK designated multiply bags 25 kg each or in big bags. The bags are placed on pallets 1 000 x 1 200 mm wrapped into shrink film, big bags on pallets 1 000 x 1 200 mm.



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## **NERALIT® Suspension PVC (powder)**

### **Type 652**

**Characteristic:** **NERALIT 652** is poly (vinyl chloride) of medium molecular weight. It has porous structure of grain and is suitable for processing to plasticized products. **NERALIT 652** is a polymer of high chemical purity with good thermal stability and can be used to make transparent products. It absorbs plasticizers well and can be processed by dry blend technology. It features good flow properties.

**Use:** **NERALIT 652** is designed for processing to plasticized products by extrusion (sections, hoses), calandring (assembling films, packaging films, semifinished products for production of toys) and injection moulding. It is used to make NERALIT granulates of the plasticized type.

#### **Specifications:**

	<b>METHODS</b>	<b>LIMITS</b>
K - value	ČSN EN ISO 1628-2 (64 0355)	65 ± 1
Apparent density	ČSN EN ISO 60 (64 2101)	0.520 ± 0.03 g / ml
Particle size distribution	ČSN EN ISO 4610 (64 0220)	
0.063 mm, min.		95 %
0.250 mm, max.		0.5 %
0.315 mm, max.		0.05 %
Volatiles, max.	ČSN 64 0311	0.3 %
Impurities, max.	PN 64-002	3 pcs / 15 g
Impurities over 0.250 mm, max.	PN 64-002	3 pcs / 50 g
Ethyl ether extract, max.	ČSN EN ISO 6427 (64 0234)	1.0 %
VCM residue, max.	ŘJKA-GC-02	1 ppm
Fish eyes, max.	ČSN 64 3200	5 pcs / g
Plasticizer absorption, min.	ČSN EN ISO 4608 (64 3203)	20 g / 100 g PVC

**Packing:** Responding to the customer's requirements, **NERALIT 652** can be supplied either in bulk (tank trucks or wagons), packed in EKOPACK or REPASAK designated multiply bags 25 kg each or in big bags. The bags are placed on pallets 800 x 1 200 mm wrapped into shrink film, big bags on pallets 1 000 x 1 200 mm.

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## **NERALIT® Suspension PVC (powder)**

### **Type 682**

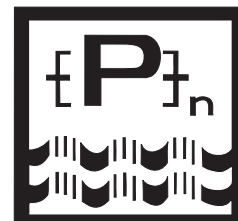
**Characteristic:** **NERALIT 682** is poly (vinyl chloride) of medium molecular weight appropriate for processing to rigid products on which high requirements for good mechanical properties are placed. **NERALIT 682** is a polymer of high chemical purity with good thermal stability and can be used for production of transparent products.

**Use:** **NERALIT 682** is primarily designed for production of pressure tubes and can be also used for extrusion of drain pipes, sections, etc.

#### **Specifications:**

	<b>METHODS</b>	<b>LIMITS</b>
K - value	ČSN EN ISO 1628-2 (64 0355)	68 ± 1
Apparent density	ČSN EN ISO 60 (64 2101)	0.560 ± 0.030 g / ml
Particle size distribution:	ČSN EN ISO 4610 (64 0220)	
0.063 mm, min.		97 %
0.250 mm, max.		2.0%
0.500 mm		0 %
Volatiles, max.	ČSN 64 0311	0.3 %
Impurities, max.	PN 64-002	3 pcs / 15 g
Impurities over 0.250 mm, max.	PN 64-002	3 pcs / 50 g
Ethyl ether extract, max.	ČSN EN ISO 6427 (64 0234)	1.0 %
VCM residue, max.	ŘJKA-GC-02	1 ppm

**Packing:** Responding to the customer's requirements, **NERALIT 682** can be supplied either in bulk (tank trucks or wagons), packed in EKOPACK or REPASAK designated multiply bags 25 kg each or in big bags. The bags are placed on pallets 1 000 x 1 200 mm wrapped into shrink film, big bags on pallets 1 000 x 1 200 mm.



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## **NERALIT® Suspension PVC (powder)**

### **Type 702**

**Characteristic:** **NERALIT 702** is a high - molecular type of PVC with a high - porous structure of grain, suitable for processing to plasticized products. **NERALIT 702** is a polymer of high chemical purity with good thermal stability and can be used to make transparent products. It absorbs plasticizers well and can be processed by dry blend technology. Products made of the material have good mechanical and electrical insulation properties. **NERALIT 702** is appropriate for use in cable production in particular.

**Use:** **NERALIT 702** is designed for processing to plasticized products by extrusion (cable sheathing and insulation), calandring (assembling films, industrial semifinished products for production of toys, building films) and injection moulding (shoe - making industry). It is used to make NERALIT granulates of the plasticized type.

### **Specifications:**

	<b>METHODS</b>	<b>LIMITS</b>
K - value	ČSN EN ISO 1628-2 (64 0355)	70 ± 1
Apparent density	ČSN EN ISO 60 (64 2101)	0.480 ± 0.030 g / ml
Particle size distribution:	ČSN EN ISO 4610 (64 0220)	
0.063 mm, min.		95 %
0.250 mm, max.		0.5 %
0.315 mm		0.01 %
Volatiles, max.	ČSN 64 0311	0.3 %
Impurities, max.	PN 64-002	3 pcs / 15 g
Impurities over 0.250 mm, max.	PN 64-002	3 pcs / 50 g
Ethyl ether extract, max.	ČSN EN ISO 6427 (64 0234)	0.8 %
VCM residue, max.	ŘJKA-GC-02	1 ppm
Fish eyes, max.	ČSN 64 3200	5 pcs / g
Plasticizer absorption, min.	ČSN EN ISO 4608 (64 3203)	29 g / 100 g PVC
Volume resistivity min.:	ČSN IEC 93	
at 23 °C	HD 429 (34 6460)	1 . 10 <sup>12</sup> ohm. metre
at 70 °C		1.5 . 10 <sup>9</sup> ohm. metre
Permittivity, max.:		
at 23 °C	ČSN IEC 250 (34 6466)	6
at 70 °C		9
Loss factor, max.:		
at 23 °C	ČSN IEC 250 (34 6466)	0.11
at 70 °C		0.055

**Packing:** Responding to the customer's requirements, **NERALIT 702** can be supplied either in bulk (tank trucks or wagons), packed in EKOPACK or REPASAK designated multiply bags 25 kg each or in big bags. The bags are placed on pallets 800 x 1 200 mm wrapped into shrink film, big bags on pallets 1 000 x 1 200 mm.

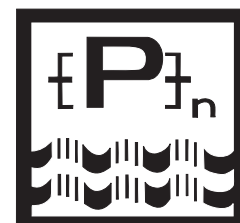
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## **NERALIT® Suspension PVC (powder)**

Quality properties	Methods		Units	Grades				
	Spolana	Analogical Method		581	601	682	652	702
				( basical / orientation values )				
K - value	CSN EN ISO 1628-2	ISO 1628-2 DIN ISO 1628-2	-	58	60	68	65	70
Apparent density	ČSN EN ISO 60	EN ISO 60	g / ml	0.600	0.590	0.560	0.520	0.480
Particle size distribution > 0.063 mm, min. > 0.250 mm, max.	ČSN EN ISO 4610	ČSN EN ISO 1624	% %	95 2	95 2	97 2	95 0.5	95 0.5
Volatiles, max.	ČSN 64 0311	ISO 1269	%	0.3	0.3	0.3	0.3	0.3
Impurities, max.	PN 64-002	-	pcs / 15 g	3	3	3	3	3
Impurities over 0.250 mm max.	PN 64-002	-	pcs / 50 g	3	3	3	3	3
Ethyleter extract, max.	ČSN EN ISO 6427	EN ISO 6427	%	1	1	1	1	0.8
VCM residue, max.	ŘJKA-GC-02	ISO 6401 DIN 53 743 ČSN 64 0328 (method B)	ppm	2	1	1	1	1
Fish eyes, max.	ČSN 64 3200	ASTM D 3596	pcs / g	-	-	-	5	5
Plasticizer absorption, min.	ČSN EN ISO 4608	-	g / 100 g PVC	-	-		20	29
Application area:	Plasticized products Rigid products			●	●	●	●	●
Suitable way of processing	Extrusion Injection Blow molding Calandring			● ● ● ●	● ● ● ●	●	● ● ●	● ●
Suitable for production of:	Foil Sheets Profiles Pressure tubes Bottles Cables Shoes Floor coverings Hoses			● ● ● ● ●	● ● ● ● ●	●	● ● ●	● ● ● ●

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