

Through continuous innovation, SUNPLAS breaks the long-term monopoly of multinational companies in technology and product areas, and develops a series of new high-quality elastomers, such as dynamic thermoplastic vulcanizate, etc.

Our company is the Key Technical Innovation Project, state-level Torch Program projects industrial base, provincial and municipal high-tech enterprises supported by Sichuan, In 2011, our chairman was named “outstanding builders of socialism with Chinese characteristics” by National United Front Work Department and other five ministries. Our company has gained ISO9001: 2008 quality management system certification.

As plastic raw material suppliers, clients’ success is our greatest desire. We will continue to develop new products to meet changing market needs, create value for customers, while continuing to strive to improve ourselves.

Thermoplastic vulcanizate (TPV) is a kind of blending thermoplastic elastomer material. It is prepared by dynamic vulcanization technology, which melt thermoplastic resin and rubber firstly, and then add the cross-linking agent. Because of the strong mechanical shearing and the chemical cross-linking by crosslinking agent, the rubber phase is cut into a large number of micron-scale cross-linked rubber particles dispersed in the thermoplastic resin matrix in the continuous phase thermoplastic resin matrix. Therefore, the structural of TPV is different with the thermoplastic elastomer prepared by polymer synthesis (such as styrene block copolymer TPE), it has a special sea - island phase structure. Its structure is shown in Figure 1 and Figure 2. The structure of TPV has the following characteristics: (1) The diameter of rubber particles is 1 ~ 2 μm ; the crosslinking density of rubber particles is greater than 7×10^{-5} mol/mL; the particles inside contain filling and reinforcing agent, plasticizer and other additives. The large number of small crosslinked rubber particles was dispersed, and there should be no chemical bonding between the particles, making TPV with an excellent high flexibility. (2) A small amount of plastic coated with crosslinked rubber particles to form a continuous phase, resulting in TPV with excellent thermoplastic

fluidity and repeated processability.

Advantages: In wide temperature range, TPV has excellent compression and compression stress relaxation, excellent anti-aging properties and good chemical resistance, short extrusion time, light weight, and has the characteristics of 100% renewable. Products can be translucent, the color of material qualities, easy to dye and so on.

1、 Translucent grades of TPV

Physical properties	Test methods	Unit	9500	8500	7500	6500	5500	4500
Hardness	GB/T531.1-2008	Shore A	95	85	75	65	55	45
Density	GB/T1033.1-2008	g/cm3	0.89	0.89	0.89	0.89	0.89	0.89
Tensile strength	GB/T528-2009	MPa	18	14	10	7.5	57.5	4
Elongation at break	GB/T528-2009	%	600	600	550	550	550	600
Tear strength	GB/529-2008	KN/m	80	74	62	60	55	48
Brittle temperature	GB/T1682-1994	℃	<-60	<-60	<-60	<-60	<-60	<-60

Note: The company grades and nature color of the corresponding TPV as a test basis, the above data are typical. Our company can produce special colors and grades of products according to customer requirements.

Product quality is supervised by the National Force Structure Plastics Engineering Technology Research Center.

2、 Environment friendly fire-class of TPV(It contain halogen, and has ROHS certification)

Physical properties	Test methods	Unit	FR2095	FR2085	FR2075	FR2065	FR2055
Hardness	GB/T531.1-2008	Shore A	95	85	75	65	55
Density	GB/T1033.1-2008	g/cm3	1.06	1.06	1.06	1.07	1.07
Tensile strength	GB/T528-2009	MPa	14	10	8	6.5	5
Elongation at break	GB/T528-2009	%	450	450	450	450	450
Tear strength	GB/529-2008	KN/m	63	53	50	47	45

Brittle temperature	GB/T1682-1994	℃	<-60	<-60	<-60	<-60	<-60
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3、Low smoke halogen-free fire-class of TPV

Physical properties	Test methods	Unit	FR3095	FR3090	FR3085
Hardness	GB/T531.1-2008	Shore A	95	90	85
Density	GB/T1033.1-2008	g/cm3	1.06	1.06	1.06
Tensile strength	GB/T528-2009	MPa	7.5	6.4	6
Elongation at break	GB/T528-2009	%	380	380	400
Tear strength	GB/529-2008	KN/m	62	58	53
Brittle temperature	GB/T1682-1994	℃	<-60	<-60	<-60
垂直燃烧	UL94	级	V-0	V-0	V-0

4、Pesticide-resistant grades of TPV

The series is mainly designed for agricultural machinery, pesticide resistance with excellent performance.

Physical properties	Test methods	Unit	9003/9004	8003	7003
Hardness	GB/T531.1-2008	Shore A	90	80	70
Density	GB/T1033.1-2008	g/cm3	0.96	0.96	0.96
Tensile strength	GB/T528-2009	MPa	10	8.5	7.5
Elongation at break	GB/T528-2009	%	550	550	550
Tear strength	GB/529-2008	KN/m	80	60	55
Brittle temperature	GB/T1682-1994	℃	<-60	<-60	<-60

5、Scratch-resistant grades of TPV

The series uses a special means to enhance the ability of surface scratch resistant. It is mainly used for parts required flexibility but requires scratch-resistant areas, such as car mirrors, triangular windows, etc.

Physical properties	Test methods	Unit	9008	8508	7508
Hardness	GB/T531.1-2008	Shore A	90	85	70

Density	GB/T1033.1-2008	g/cm3	0.89	0.89	0.89
Tensile strength	GB/T528-2009	MPa	10	8.5	7.5
Elongation at break	GB/T528-2009	%	550	550	550
Tear strength	GB/529-2008	KN/m	80	70	55
Brittle temperature	GB/T1682-1994	°C	<-60	<-60	<-60

6. High resilience grades of TPV.

Features: The series products with higher resilience and other mechanical properties, and excellent oil resistance and other chemical properties.

Disadvantages: Because of different curing systems, the series can't do the white material, which is mainly available in black material.

Physical properties	Test methods	Unit	1095	1087	1080	1073	1064	1055
Hardness	GB/T531.1-2008	Shore A	95	87	80	75	64	55
Density	GB/T1033.1-2008	g/cm3	0.95	0.96	0.96	0.97	0.97	0.97
Tensile strength	GB/T528-2009	MPa	20	15	10	8	6.5	4.5
Elongation at break	GB/T528-2009	%	600	550	500	450	400	350
Tear strength	GB/529-2008	KN/m	65	50	35	25	20	15
Brittle temperature	GB/T1682-1994	°C	<-50	<-50	<-60	<-60	<-60	<-60

Honest man, practical work is our code of conduct. To be the most customer trust plastic raw materials manufacturers and suppliers is our goal. We are ready to work with you to success.