3H

VINACOM

INNOVATIVE COMPOUNDER

PVC COMPOUND

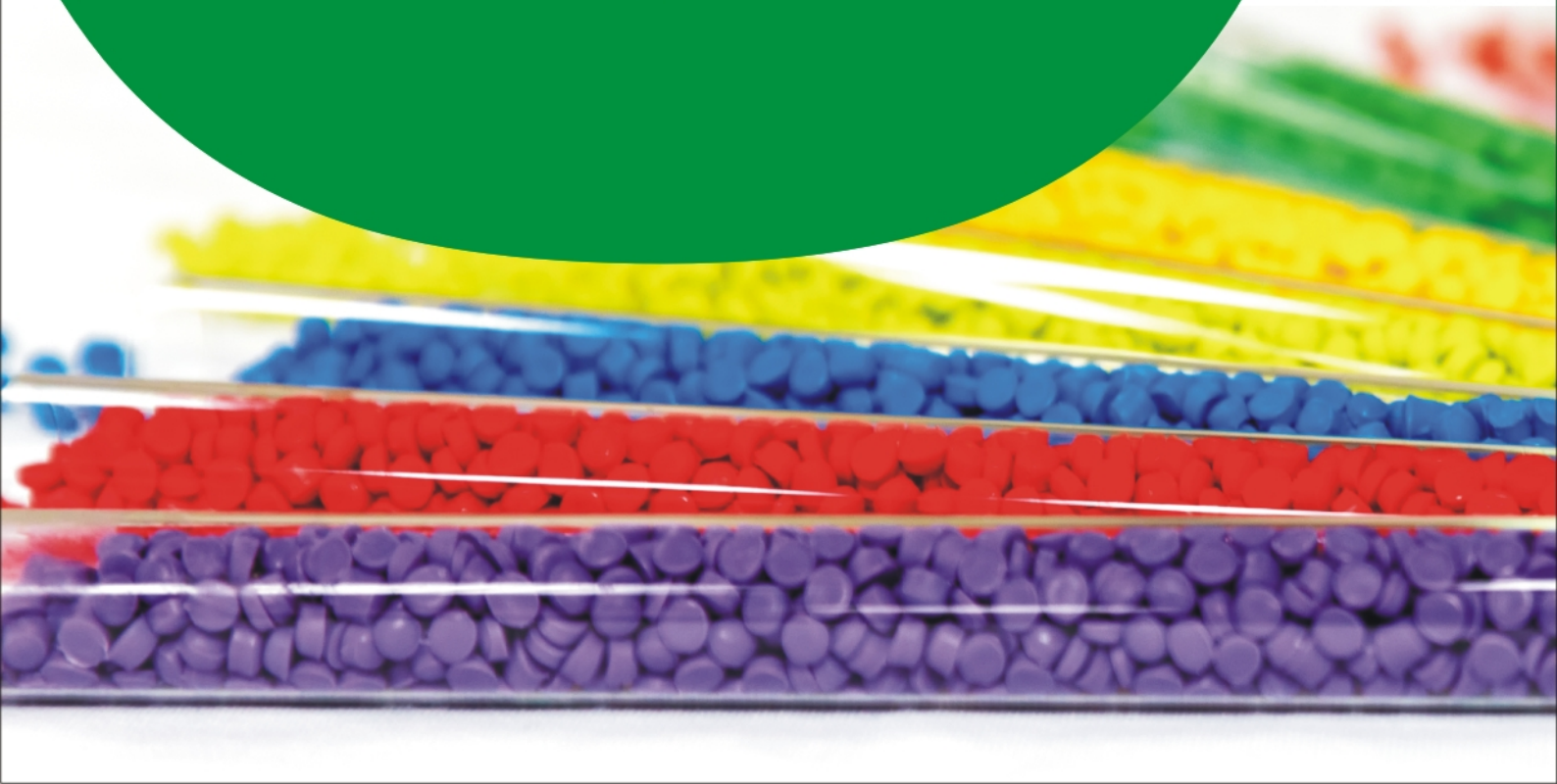
Company in brief

3H Vinacom Co., Ltd was established in 2004 by 100% Korean investment with proven technology, rich experiences in research and development field, perfect laboratory and modern production facilities for a variety of PVC compounds.

We committed to provide to customers PVC compounds with full supports from the first step of choosing a suitable grade to meet the standards or other requirements from customer's finished products; moreover, we design our products to adapt to each customer's processing equipment and process parameters.

We believe when you come with us, you can experience the optimum and innovation on quality and services in our products.

We are committed to serve our customers with our Heart and Soul to justify a true meaning of our Company Name 3H (Human, Hope, Happiness)



Application

- **PVC compounds for wires & cables, including:**
  - Standard grades
  - Lead-free grades to meet the RoHS compliance
  - High temperature rating grades for automotive wires and for power cables
  - Low temperature resistant grades
  - Flame-retardant grades, low-smoke grades, oil-resistant grades
  - Special grades with anti-termite or/and anti-rodent property
  - Phthalate-free grades

- **Flexible PVC compounds**
  - PVC compounds for garden hoses, tube, and automobile parts
  - PVC compounds for seals & gaskets
  - PVC compounds for shoes sole, V-strap, slipper etc
  - PVC compounds for waterstop
  - PVC compounds for hand grips and other flexible injection moulded parts

- **Rigid uPVC compounds**
  - PVC compounds for pipes & profiles
  - PVC compounds for electric conduit and corrugated pipes
  - PVC compounds for fittings and other rigid injection molding items

WIRES AND CABLES STANDARDS

IEC 60227
PVC/C PVC/D PVC/E PVC/ST4 PVC/ST5 PVC/ST9 PVC/ST10

IEC 60502
PVC/A PVC/ST1 PVC/ST2

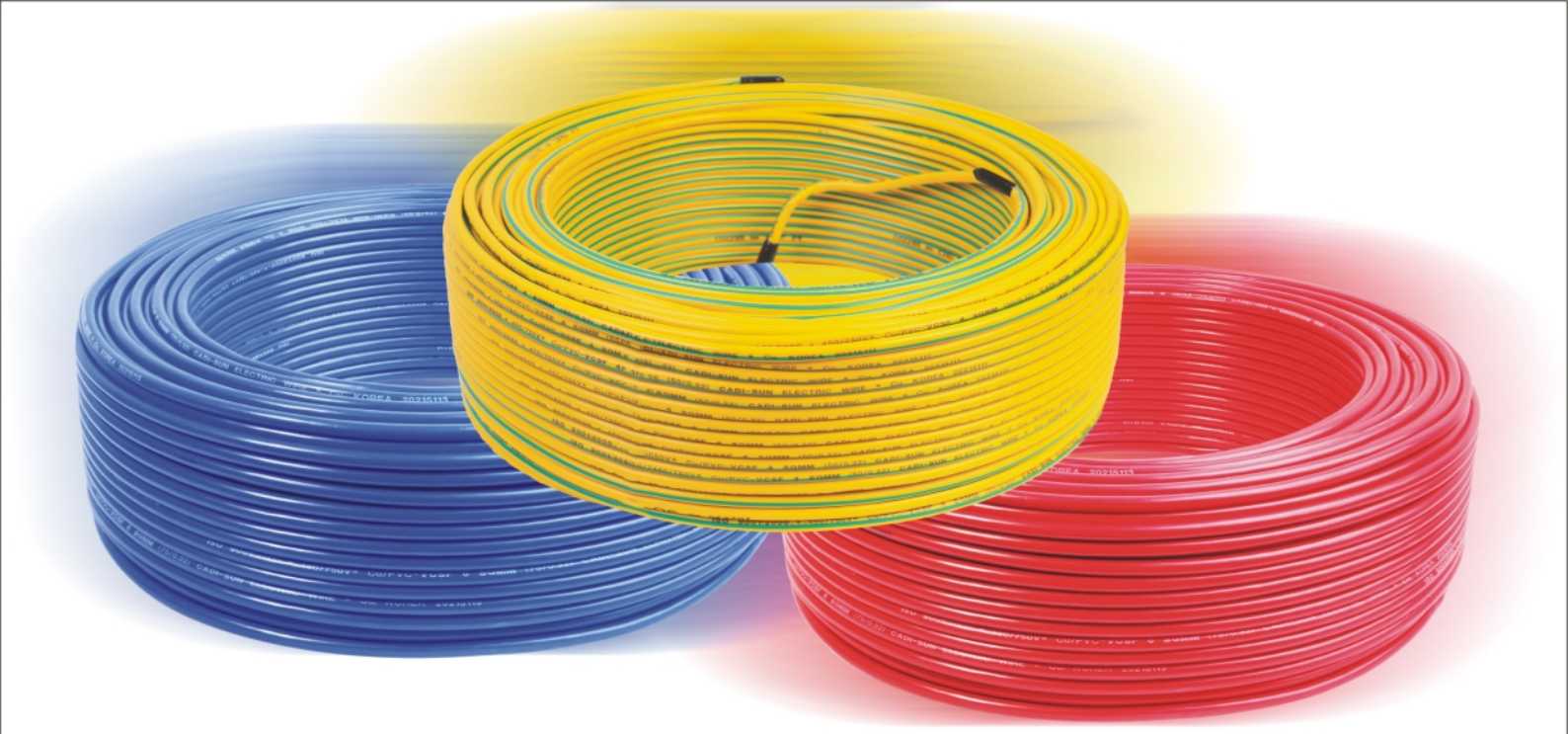
IEC 60332
PVC/C PVC/D PVC/E PVC/ST4 PVC/ST5 PVC/ST9 PVC/ST10 PVC/A PVC/ST1 PVC/ST2

BS 6746
TI1 TI2 TI3 TM1 TM2 Type 2 Type 4 Type 5 Type 6 Type 9

AS/NZS 3808
V-75 V-90 3V-75 3V-90 5V-90

PVC compound Insulation Type TW (60°C)
PVC compound Insulation Types THWN and THW (75°C)
PVC compound Insulation oil-resistance Types THWN-2, THWN, and TW
PVC compound Insulation TypesTHW-2, THWN-2, and THHN (90°C)
PVC compound Insulation Types TA and TBS
PVC compound Class 11 Insulation
PVC compound Class 11 Insulation and jacket
PVC compound Class 11 jacket
PVC compound Class 12 75°C (167°F) Insulation and jacket
PVC compound Class 12 90°C (194°F) Insulation and jacket
PVC compound Class 12 105°C (221°F) Insulation and jacket
PVC compound Class 12B insulation
PVC compound Oil-resistance Class 12B insulation
PVC compound Class 43 Insulation and jacket
SRPVC (semirigid PVC)
Insulation and jacket for power-limited circuit cable, cable for power-limited, fire-alarm circuit and for other cables

UTP (LAN data cable) Jacketing
CM CMX CMG CMR CMP



PVC COMPOUNDS FOR ELECTRIC WIRES & CABLES RoHS COMPLIANT

Standard: IEC 60227

Properties	Test Method	Unit	Specification					
Application			Insulation	Insulation	Insulation	Sheathing	Sheathing	Sheathing
Standard			**PVC/C**	**PVC/D**	**PVC/E**	**ST4**	**ST5**	**ST10**
Density	ISO 1183	g/cm3	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55
Hardness	ASTM D 2240	Shore A	87 ÷ 90	87 ÷ 90	88 ÷ 90	87 ÷ 90	75 ÷ 85	88 ÷ 90
Tensile strength	IEC 60811-1-1	N/mm2	≥ 12.5	≥ 10.0	≥ 15.0	≥ 12.5	≥ 10.0	≥ 10.0
Elongation	IEC 60811-1-1	%	≥ 125	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150
Aging condition	IEC 60811-1-2		80°C x 7D	80°C x 7D	135°C x 10D	80°C x 7D	80°C x 7D	135°C x 10D
Tensile strength after aging		N/mm2	≥ 12.5	≥ 10.0	≥ 15.0	≥ 12.5	≥ 10.0	≥ 10.0
Variation		%	≤ ±20	≤ ±20	≤ ±25	≤ ±20	≤ ±20	≤ ±25
Elongation after aging		%	≥ 125	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150
Variation		%	≤ ±20	≤ ±20	≤ ±25	≤ ±20	≤ ±20	≤ ±25
Heat shock test 150°C x 1hr	IEC 60811-3-1	-	No crack	No crack	No crack	No crack	No crack	No crack
Loss of mass	IEC 60811-3-2	mg/cm2	≤ 2.0	≤ 2.0	≤ 2.0	≤ 2.0	≤ 2.0	≤ 2.0
Aging condition			80°C x 7D	80°C x 7D	115°C x 10D	80°C x 7D	80°C x 7D	115°C x 10D
Volume resistivity at 27°C	ASTM D257	Ω.cm	≥ 10^{13}	≥ 10^{13}	≥ 10^{14}	-	-	-
Thermal stability at 200°C	IEC 60811-3-2	min	≥ 60	≥ 60	≥ 180	≥ 60	≥ 60	≥ 180
Low temperature test	IEC 60811-1-4	°C	-15	-15	-15	-15	-15	-15

Footnotes:

1. The density and hardness will be decided as per customer's requirement.
2. The property can be adjusted to be higher than the value in the standard if customer requires
3. Phthalate-free grades or other standards are available upon request
4. PVC/E and ST10 compounds are used in the case of heat-resistant wires or cables
5. ST9 compound is also available when customer need it for oil-resistant flexible cables

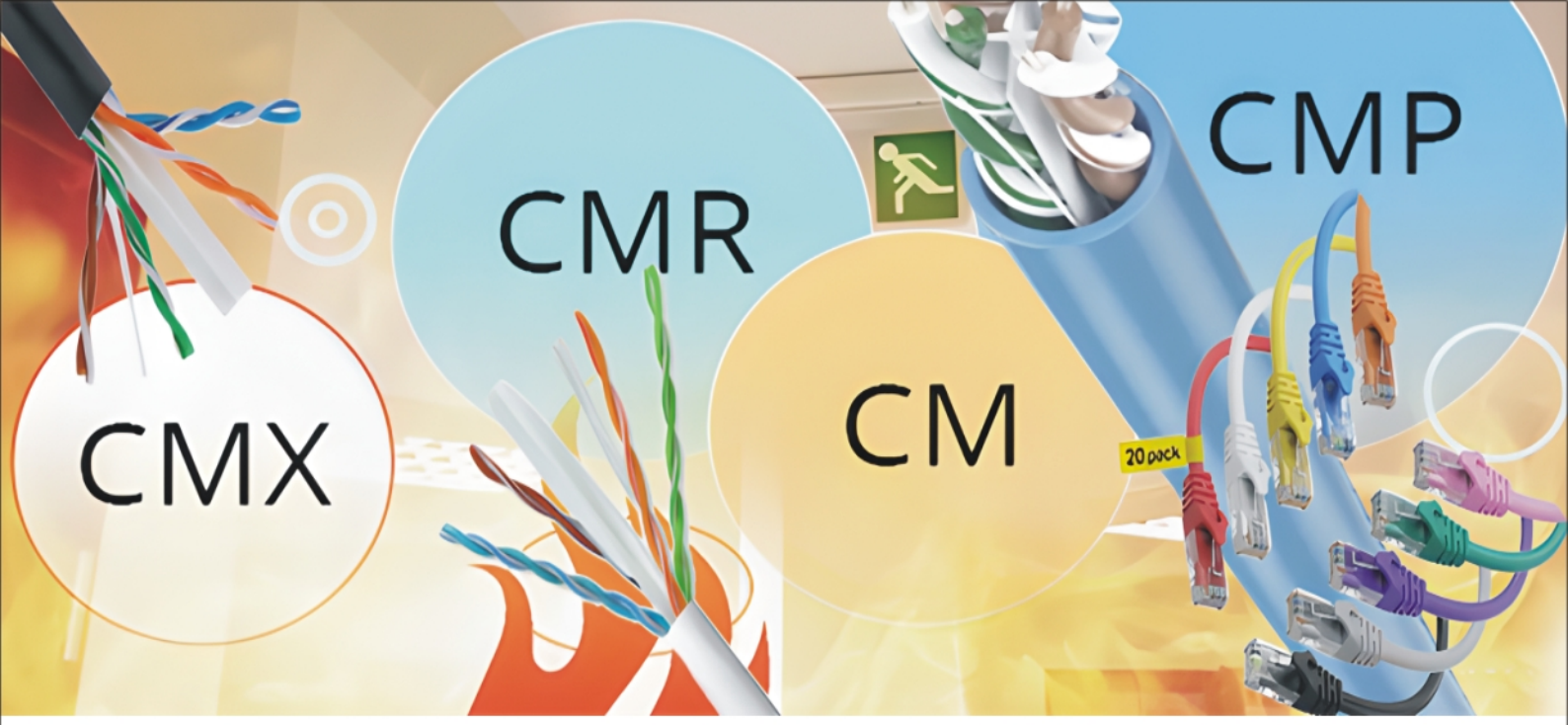
PVC COMPOUNDS FOR ELECTRIC WIRES & CABLES RoHS COMPLIANT

Standard: IEC 60502

Properties	Test Method	Unit	Specification		
Application			Insulation	Sheathing	Sheathing
Standard			**PVC/A**	**ST1**	**ST2**
Density	ISO 1183	g/cm3	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55
Hardness	ASTM D 2240	Shore A	86 ÷ 90	88 ÷ 90	88 ÷ 90
Tensile strength	IEC 60811-1-1	N/mm2	≥ 12.5	≥ 12.5	≥ 12.5
Elongation	IEC 60811-1-1	%	≥ 150	≥ 150	≥ 150
Aging condition	IEC 60811-1-2		100°C x 7D	100°C x 7D	100°C x 7D
Tensile strength after aging		N/mm2	≥ 12.5	≥ 12.5	≥ 12.5
Variation		%	≤ ±25	≤ ±25	≤ ±25
Elongation after aging		%	≥ 150	≥ 150	≥ 150
Variation		%	≤ ±25	≤ ±25	≤ ±25
Heat shock test 150°C x 1hr	IEC 60811-3-1	-	No crack	No crack	No crack
Loss of mass	IEC 60811-3-2	mg/cm2	-	-	≤ 1.5
Aging condition					100°C x 7D
Volume resistivity at 27°C	ASTM D257	Ω.cm	≥ 10^{13}	-	-
Thermal stability at 200°C	IEC 60811-3-2	min	≥ 70	≥ 70	≥ 80
Low temperature test	IEC 60811-1-4	°C	-15	-15	-15

Footnotes:

1. The density and hardness will be decided as per customer's requirement.
2. The property can be adjusted to be higher than the value in the standard if customer requires
3. Phthalate-free grades or other standards are available upon request
4. Anti-termite or/and anti-rodent property is available upon request
5. We have grades to meet the requirements of DIN VDE 0281 standard



PVC COMPOUNDS FOR TELECOMMUNICATION CABLES & OPTICAL FIBRE CABLES RoHS COMPLIANT

Standard: BS 6746 TM1/TM2

Properties	Test Method	Unit	Specification		
Application			LAN cables sheathing	Copper conductor drop wire telephone cables sheathing	Optical fibre FTTH cables sheathing
Density	ISO 1183	g/cm3	1.50 ÷ 1.55	1.48 ÷ 1.55	1.50 ÷ 1.55
Hardness	ASTM D 2240	Shore A	87 ÷ 90	89 ÷ 91	93 ÷ 95
Tensile strength	IEC 60811-1-1	N/mm2	≥ 12.5	≥ 12.5	≥ 18.0
Elongation	IEC 60811-1-1	%	≥ 150	≥ 150	≥ 200
Aging condition	IEC 60811-1-2		80°C x 7D	80°C x 7D	80°C x 7D
Variation of tensile strength		%	≤ ±20	≤ ±20	≤ ±20
Variation of elongation		%	≤ ±20	≤ ±20	≤ ±20
Heat shock test 150°C x 1hr	IEC 60811-3-1	-	No crack	No crack	No crack
Loss of mass	IEC 60811-3-2	mg/cm2	≤ 2.0	≤ 2.0	≤ 2.0
Aging condition			80°C x 7D	80°C x 7D	80°C x 7D
Volume resistivity at 27°C	ASTM D257	Ω.cm	≥ 10^{13}	≥ 10^{13}	≥ 10^{13}
Thermal stability at 200°C	IEC 60811-3-2	min	≥ 60	≥ 60	≥ 60
Low temperature test	IEC 60811-1-4	°C	-15	-15	-15

Footnotes:

1. The density and hardness will be decided as per customer's requirement.
2. The property can be adjusted to be higher than the value in the standard if customer requires
3. We have flame-retardant grades for fire-resistant cables according to IEC 60332 standard
4. Phthalate-free grades or other standards are available upon request

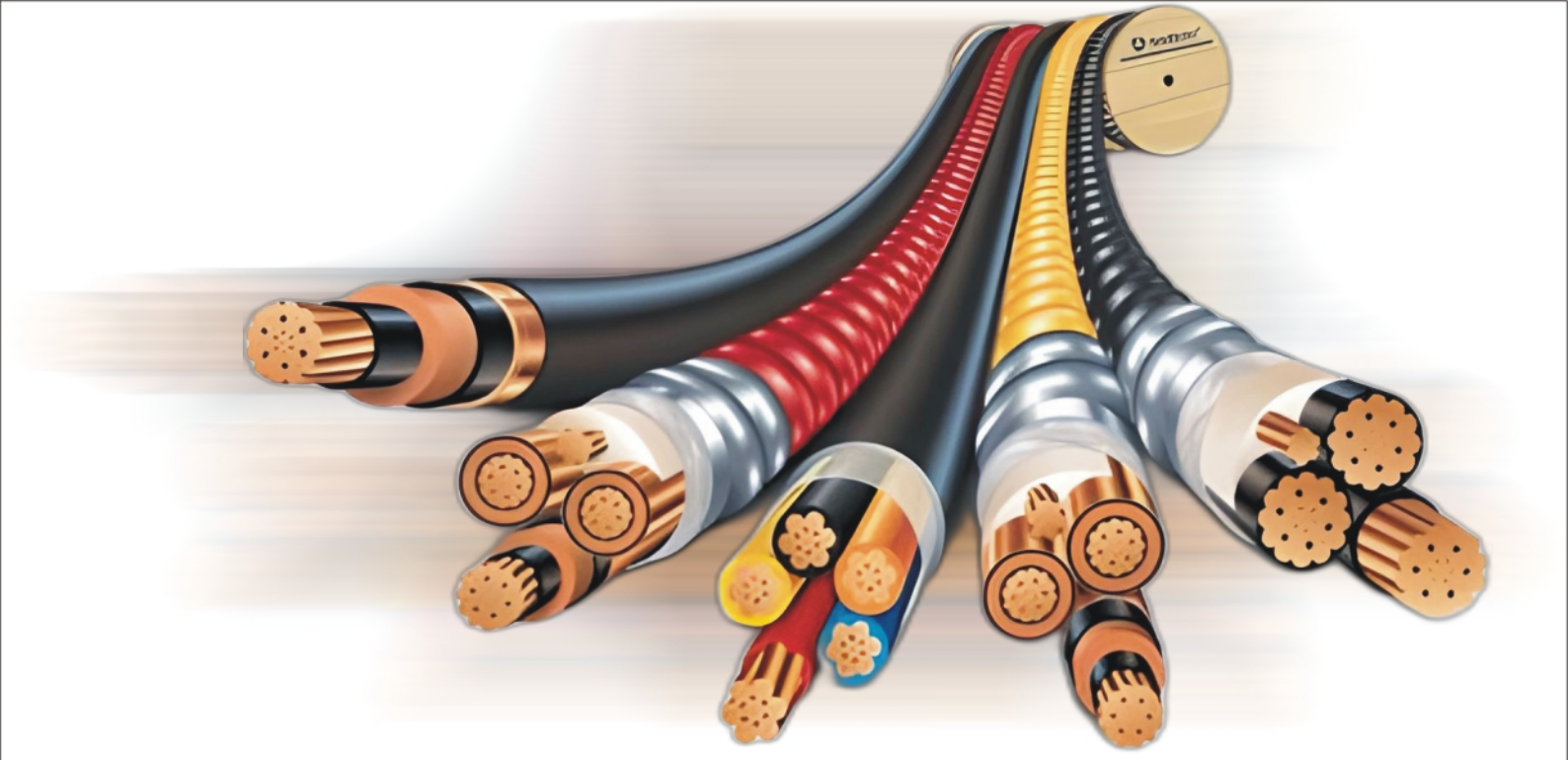
PVC COMPOUNDS FOR ELECTRIC WIRES & CABLES RoHS COMPLIANT

Standard: AS/NZS 3808

Properties	Test Method	Unit	Specification				
Application			Insulation	Insulation	Sheathing	Sheathing	Sheathing
Standard			**V-75**	**V-90**	**3V-75**	**3V-90**	**5V-90**
Density	ISO 1183	g/cm3	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55
Hardness	ASTM D 2240	Shore A	86 ÷ 90	86 ÷ 90	80 ÷ 85	80 ÷ 85	86 ÷ 90
Easy tear property			-	-	√	√	-
Tensile strength	IEC 60811-1-1	N/mm2	≥ 12.5	≥ 12.5	≥ 6.0	≥ 6.0	≥ 12.5
Elongation	IEC 60811-1-1	%	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150
Aging condition	IEC 60811-1-2		110°C x 10D	115°C x 21D	110°C x 7D	115°C x 21D	115°C x 21D
Retention of Tensile		%	≥ 75	≥ 75	≥ 75	≥ 75	≥ 75
Retention of Elongation		%	≥ 65	≥ 65	≥ 65	≥ 65	≥ 65
Heat shock test 150°C x 1hr	IEC 60811-3-1	-	No crack	No crack	No crack	No crack	No crack
Loss of mass	IEC 60811-3-2	mg/cm2	≤ 2.5	≤ 2.5	≤ 2.5	≤ 2.5	≤ 2.5
Aging condition			100°C x 5D	115°C x 5D	100°C x 5D	115°C x 5D	115°C x 5D
Volume resistivity at 27°C	ASTM D257	Ω.cm	≥ 10^{13}	≥ 10^{13}	-	-	-
Thermal stability at 200°C	IEC 60811-3-2	min	≥ 100	≥ 150	≥ 100	≥ 100	≥ 100

Footnotes:

1. The density and hardness will be decided as per customer's requirement.
2. The property can be adjusted to be higher than the value in the standard if customer requires
3. Phthalate-free grades or other standards are available upon request.



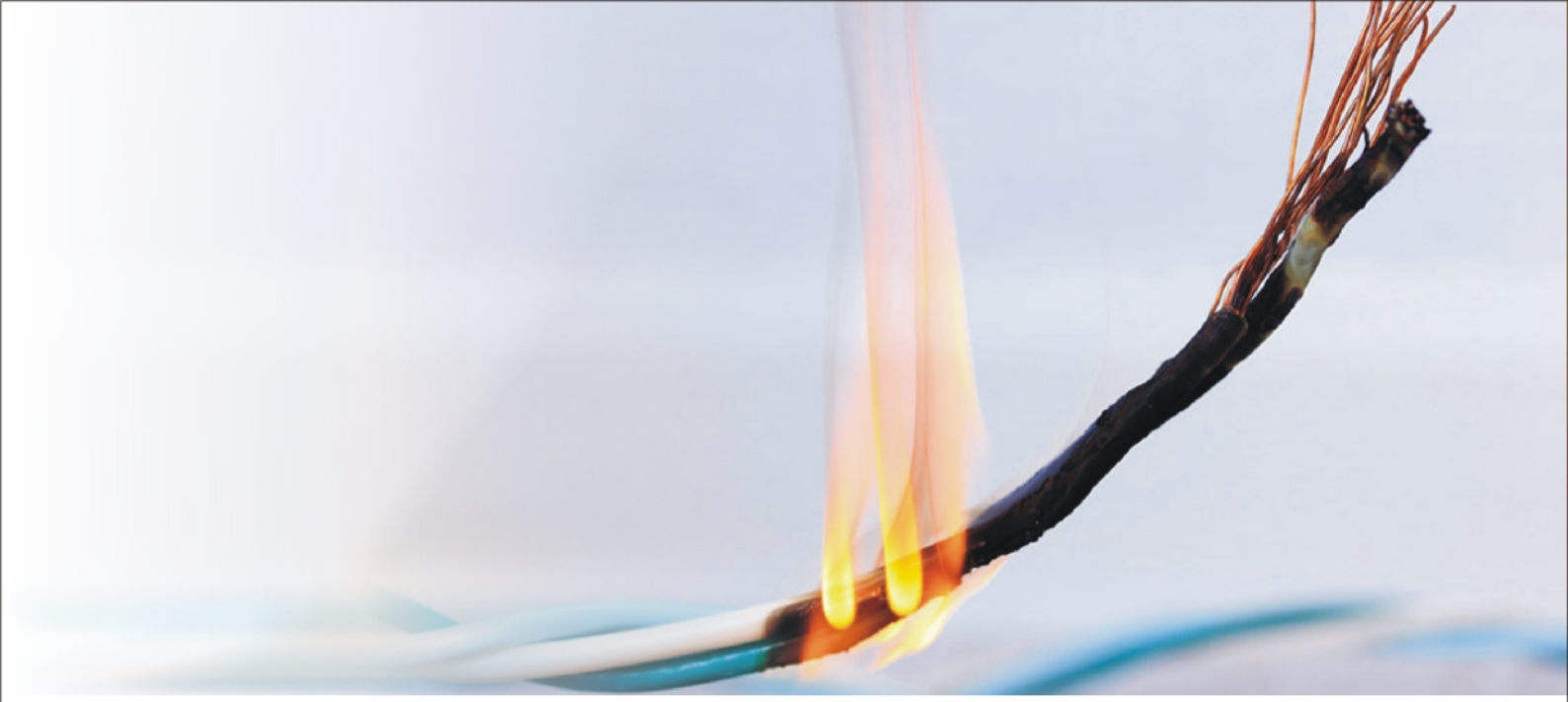
PVC COMPOUNDS FOR ELECTRIC WIRES & CABLES RoHS COMPLIANT

Standard: BS 6746

Properties	Test Method	Unit	Specification								
Application			Insulation	Insulation	Insulation	Sheathing	Sheathing	Insulation	Insulation	Sheathing	Sheathing
Standard			TI1	TI2	TI3	TM1	TM2	Type 2	Type 5	Type 6	Type 9
Density	ISO 1183	g/cm3	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55
Hardness	ASTM D 2240	Shore A	87 ÷ 90	80 ÷ 85	88 ÷ 90	87 ÷ 90	80 ÷ 85	90 ÷ 92	90 ÷ 92	80 ÷ 85	88 ÷ 90
Tensile strength	IEC 60811-1-1	N/mm2	≥ 12.5	≥ 10.0	≥ 15.0	≥ 12.5	≥ 10.0	≥ 18.5	≥ 12.5	≥ 6.0	≥ 12.5
Elongation	IEC 60811-1-1	%	≥ 125	≥ 150	≥ 150	≥ 125	≥ 150	≥ 125	≥ 125	≥ 125	≥ 150
Aging condition	IEC 60811-1-2		80°C x 7D	80°C x 7D	135° x 14D	80°C x 7D	80°C x 7D	-	135°C x 10D	-	100°C x 7D
Tensile strength after aging		N/mm2	≥ 12.5	≥ 10.0	≥ 15.0	≥ 12.5	≥ 10.0	-	≥ 12.5	-	≥ 12.5
Variation		%	≤ ±20	≤ ±20	≤ ±25	≤ ±20	≤ ±20	-	≤ ±25	-	≤ ±25
Elongation after aging		%	≥ 125	≥ 150	≥ 150	≥ 125	≥ 150	-	≥ 125	-	≥ 150
Variation		%	≤ ±20	≤ ±20	≤ ±25	≤ ±20	≤ ±20	-	≤ ±25	-	≤ ±25
Heat shock test 150°C x 1hr	IEC 60811-3-1	-	No crack	No crack	No crack	No crack	No crack	No crack	No crack	No crack	No crack
Loss of mass	IEC 60811-3-2	mg/cm2	≤ 2.0	≤ 2.0	≤ 1.5	≤ 2.0	≤ 2.0	≤ 2.0	≤ 1.5	≤ 2.0	≤ 1.5
Aging condition			80°C x 7D	80°C x 7D	115°C x 10D	80°C x 7D	80°C x 7D	80°C x 7D	115°C x 10D	80°C x 7D	100°C x 7D
Volume resistivity at 27°C	ASTM D257	Ω.cm	≥ 10^{13}	≥ 10^{13}	≥ 10^{14}	-	-	≥ 10^{14}	≥ 10^{14}	-	-
Thermal stability at 200°C	IEC 60811-3-2	min	≥ 60	≥ 60	≥ 240	≥ 60	≥ 60	≥ 60	≥ 60	≥ 60	≥ 60
Low temperature test	IEC 60811-1-4	°C	-15	-15	-15	-15	-15	-15	-15	-15	-15

Footnotes:

1. The density and hardness will be decided as per customer's requirement.
2. The property can be adjusted to be higher than the value in the standard if customer requires
3. Phthalate-free grades or other standards are available upon request
4. We have grades to meet the BS 7655 standard
5. We have oil-resistant compounds for welding cables



FLAME-RETARDANT PVC COMPOUNDS FOR FR WIRES & CABLES RoHS COMPLIANT

Standard: IEC 60502 and IEC 60332-1/60332-3

Properties	Test Method	Unit	Specification					
Application			Insulation	Insulation	Sheathing	Sheathing	Sheathing	Sheathing
Standard			**PVC/A IEC 60332-1 ©**	**PVC/A IEC 60332-3 ©**	**ST2 IEC 60332-3 ©**	**ST2 IEC 60332-3 (A)**	**ST2 IEC 60332-3 (A)**	**ST2 IEC 60332-3 (A)**
Density	ISO 1183	g/cm3	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55
Hardness	ASTM D 2240	Shore A	88 ÷ 92	88 ÷ 92	88 ÷ 92	88 ÷ 92	88 ÷ 92	88 ÷ 92
Tensile strength	IEC 60811-1-1	N/mm2	≥ 12.5	≥ 12.5	≥ 12.5	≥ 12.5	≥ 12.5	≥ 12.5
Elongation	IEC 60811-1-1	%	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150
Oxygen index	ASTM D2863	%	≥ 31	≥ 31	≥ 31	≥ 35	≥ 38	≥ 40
Aging condition	IEC 60811-1-2		100°C x 7D	100°C x 7D	100°C x 7D	100°C x 7D	100°C x 7D	100°C x 7D
Tensile strength after aging		N/mm2	≥ 12.5	≥ 12.5	≥ 12.5	≥ 12.5	≥ 12.5	≥ 12.5
Variation		%	≤ ±25	≤ ±25	≤ ±25	≤ ±25	≤ ±25	≤ ±25
Elongation after aging		%	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150
Variation		%	≤ ±25	≤ ±25	≤ ±25	≤ ±25	≤ ±25	≤ ±25
Heat shock test 150°C x 1hr	IEC 60811-3-1	-	No crack	No crack	No crack	No crack	No crack	No crack
Loss of mass	IEC 60811-3-2	mg/cm2	-	-	≤ 1.5	≤ 1.5	≤ 1.5	≤ 1.5
Aging condition					100°C x 7D	100°C x 7D	100°C x 7D	100°C x 7D
Volume resistivity at 27°C	ASTM D257	Ω.cm	≥ 10^{13}	≥ 10^{13}	-	-	-	-
Thermal stability at 200°C	IEC 60811-3-2	min	≥ 80	≥ 80	≥ 80	≥ 80	≥ 80	≥ 80
Low temperature test	IEC 60811-1-4	°C	-15	-15	-15	-15	-15	-15

Footnotes:

1. Category A and C are in compliance to IEC 60332.
2. The density and hardness will be decided as per customer's requirement.
3. The property can be adjusted to be higher than the value in the standard if customer requires
4. Phthalate-free grades or other standards are available upon request
5. Anti-Termite or/and Anti-Rodent properties can be incorporated.
6. We have grades to meet the requirements of fire-resistant cables under UL 1581

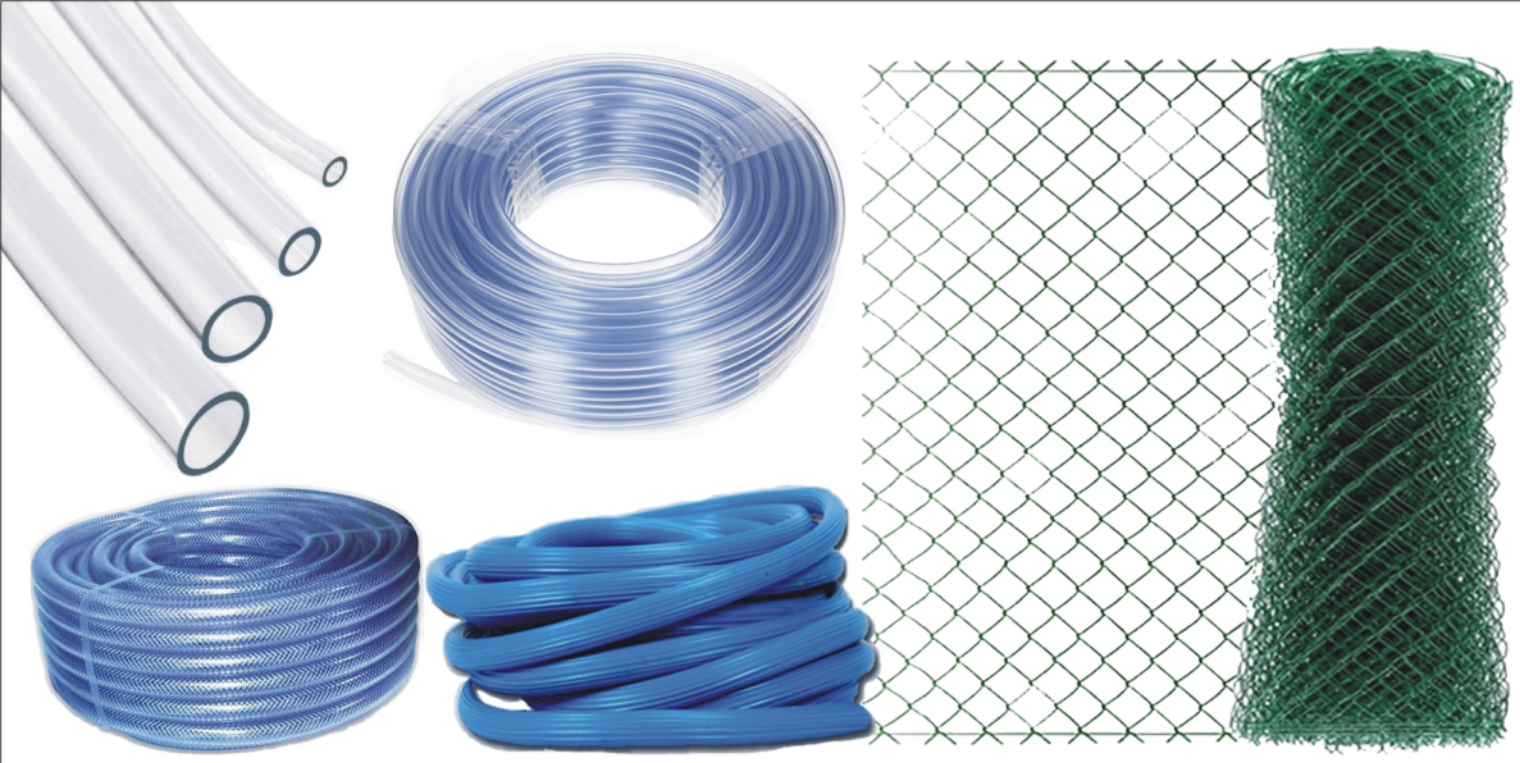
LOW SMOKE LOW HALOGEN FLAME-RETARDANT PVC COMPOUNDS FOR WIRES & CABLES

Standard: IEC 60502 and IEC 60332-1/60332-3

Properties	Test Method	Unit	Specification		
Application			Insulation	Insulation	Sheathing
Standard			**PVC/A IEC 60332-1 ©**	**PVC/A IEC 60332-3 ©**	**ST2 IEC 60332-3 (A)**
Density	ISO 1183	g/cm3	1.45 ÷ 1.55	1.45 ÷ 1.55	1.45 ÷ 1.55
Hardness	ASTM D 2240	Shore A	88 ÷ 92	88 ÷ 92	88 ÷ 92
Tensile strength	IEC 60811-1-1	N/mm2	≥ 12.5	≥ 12.5	≥ 12.5
Elongation	IEC 60811-1-1	%	≥ 150	≥ 150	≥ 150
Oxygen index	ASTM D2863	%	≥ 31	≥ 31	≥ 31
Smoke density (Non-flamming mode	ASTM E662	Dmc	≤ 350	≤ 350	≤ 350
Aging condition	IEC 60811-1-2		100°C x 7D	100°C x 7D	100°C x 7D
Tensile strength after aging		N/mm2	≥ 12.5	≥ 12.5	≥ 12.5
Variation		%	≤ ±25	≤ ±25	≤ ±25
Elongation after aging		%	≥ 150	≥ 150	≥ 150
Variation		%	≤ ±25	≤ ±25	≤ ±25
Heat shock test 150°C x 1hr	IEC 60811-3-1	-	No crack	No crack	No crack
Loss of mass	IEC 60811-3-2	mg/cm2	-	-	≤ 1.5
Aging condition					100°C x 7D
Volume resistivity at 27°C	ASTM D257	Ω.cm	≥ 10^{13}	≥ 10^{13}	-
Thermal stability at 200°C	IEC 60811-3-2	min	≥ 80	≥ 80	≥ 80
Low temperature test	IEC 60811-1-4	°C	-15	-15	-15

Footnotes:

1. Category A and C are in compliance to IEC 60332.
2. The density and hardness will be decided as per customer's requirement.
3. The property can be adjusted to be higher than the value in the standard if customer requires
4. Phthalate-free grades or other standards are available upon request



PVC COMPOUNDS FOR HOSES AND FENCE WIRES

Technical Data

Properties	Test method	Unit	Specification
Specific gravity	ISO 1183	g/cm3	1.23 ÷ 1.42
Hardness	ASTM D 2240	Shore A	65 ÷ 78
Tensile strength	IEC 811 1:1	MPa	12 ÷ 25
Elongation at break	IEC 811 1:1	%	270 ÷ 350
Thermal stability at 200°C	IEC 811 3:2	minute	30 ÷ 50

The range covers flexible PVC compounds for extrusion of hoses, fence wires and automotive trimmings. Compounds with special properties such as UV, fungus and migration resistance are available upon request

- Transparent hose for outdoor use (Cd free)
- Economic grades for garden hose
- Low hardness grades for garden hose
- Oil & gas resistant grades for outer layer of pressure hoses
- General purpose fence wires sheathing
- Gabion wires sheathing grade with good weather resistance
- Lateral protector for automotive

PVC Compound will be designed in accordance to Hardness, Colour and Application.

Footnotes:

- For other properties, please contact us for detailed TDS
- Phthalate-free grades are available upon request

PVC COMPOUNDS FOR GASKETS

Technical Data

Properties	Test method	Unit	Specification
Specific gravity	ISO 1183	g/cm3	1.28 ÷ 1.42
Hardness	ASTM D 2240	Shore A	53 ÷ 76
Tensile strength	IEC 811 1:1	MPa	9 ÷ 18
Elongation at break	IEC 811 1:1	%	200 ÷ 380
Thermal stability at 200°C	IEC 811 3:2	minute	30 ÷ 50

PVC compounds for seals & gaskets for the following applications

- Very soft, UV resistant grades for gaskets to be used in aluminum or PVC windows
- Medium soft, UV resistant grades for general extrusion of gasket
- Fridge gaskets
- Anti-fungus property gaskets
- Gaskets for automotive sector
- Gaskets for table edge

PVC Compound will be designed in accordance to Hardness, Colour and Application.

Footnotes:

- For other properties, please contact us for detailed TDS
- Phthalate-free grades are available upon request

PVC COMPOUNDS FOR FOOTWEAR

Technical Data

Properties	Test method	Unit	Specification
Specific gravity	ISO 1183	g/cm3	1.18 ÷ 1.36
Hardness	ASTM D 2240	Shore A	50 ÷ 80
Tensile strength	IEC 811 1:1	MPa	7 ÷ 18
Elongation at break	IEC 811 1:1	%	200 ÷ 400
Thermal stability at 200°C	IEC 811 3:2	minute	30 ÷ 50

PVC compounds for footwear, including:

- Compact shoe sole and sandal
- General boots and oil-resistant safety boots
- Foamed sole for sport shoes and military shoes
- Transparent slipper's upper
- Low foamed sole

PVC Compound will be designed in accordance to Hardness, Colour and Application.

Footnotes:

- For other properties, please contact us for detailed TDS

PVC COMPOUNDS FOR VARIOUS FLEXIBLE INJECTION PARTS

Technical Data

Properties	Test method	Unit	Specification
Specific gravity	ISO 1183	g/cm3	1.27 ÷ 1.36
Hardness	ASTM D 2240	Shore A	62 ÷ 81
Tensile strength	IEC 811 1:1	MPa	30 ÷ 50
Elongation at break	IEC 811 1:1	%	270 ÷ 380
Thermal stability at 200°C	IEC 811 3:2	minute	30 ÷ 50

PVC compounds are commonly used in many other applications such as motor-bike parts and construction, many grades of PVC compounds for the demand of these markets.

- Soft grades for grip handle for bicycles and motorcycles with matt surface and weather resistance
- Grades for motorcycle footrest
- Grades for injection moulding of big and complicated parts
- Very soft grades for general purpose injection moulding application

PVC Compound will be designed in accordance to Hardness, Colour and Application.

Footnotes:

- For other properties, please contact us for detailed TDS
- Phthalate-free grades are available upon request

PVC COMPOUNDS FOR FITTINGS AND RIGID INJECTION MOULDED PARTS

Technical Data

Properties	Test method	Unit	Specification
Specific gravity	ISO 1183	g/cm3	1.43 ÷ 1.52
Vicat point	ISO 306	°C/5kg	72 ÷ 75
Thermal stability at 200°C	IEC 811 3:2	minute	30 ÷ 40

uPVC Fitting Compounds in accordance to customer's Injection Moulding Machine:

- General purpose grades for PVC fittings which are used for water pipe connection
- High flow grades for fitting
- Special grades for large fitting or flange
- High impact grades for fitting with glossy surface
- Special grades for fitting which are used for electrical conduit connection

PVC Compound will be designed in accordance to Hardness, Colour and Application.

Footnotes:

- For other properties, please contact us for detailed TDS

PVC COMPOUNDS FOR PIPES & PROFILES AND FOR VARIOUS RIGID EXTRUSION PRODUCTS

Technical Data

Properties	Test method	Unit	Specification
Specific gravity	ISO 1183	g/cm3	1.48 ÷ 1.60
Vicat point	ISO 306	°C/5kg	75 ÷ 80
Thermal stability at 200°C	IEC 811 3:2	minute	25 ÷ 35

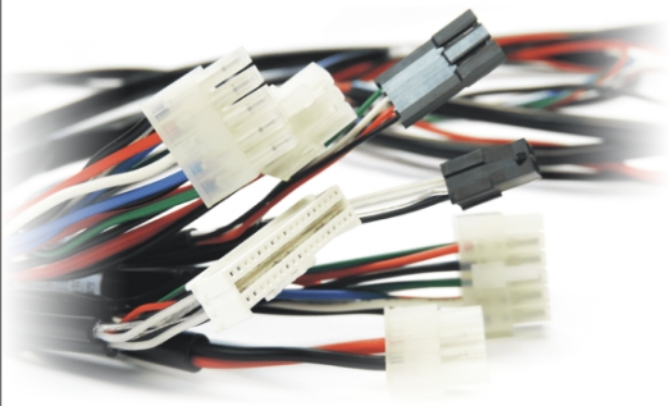
Rigid PVC compounds which are are used for the building materials such as window & door frame, ceiling profile and other construction materials. Our typical grades are:

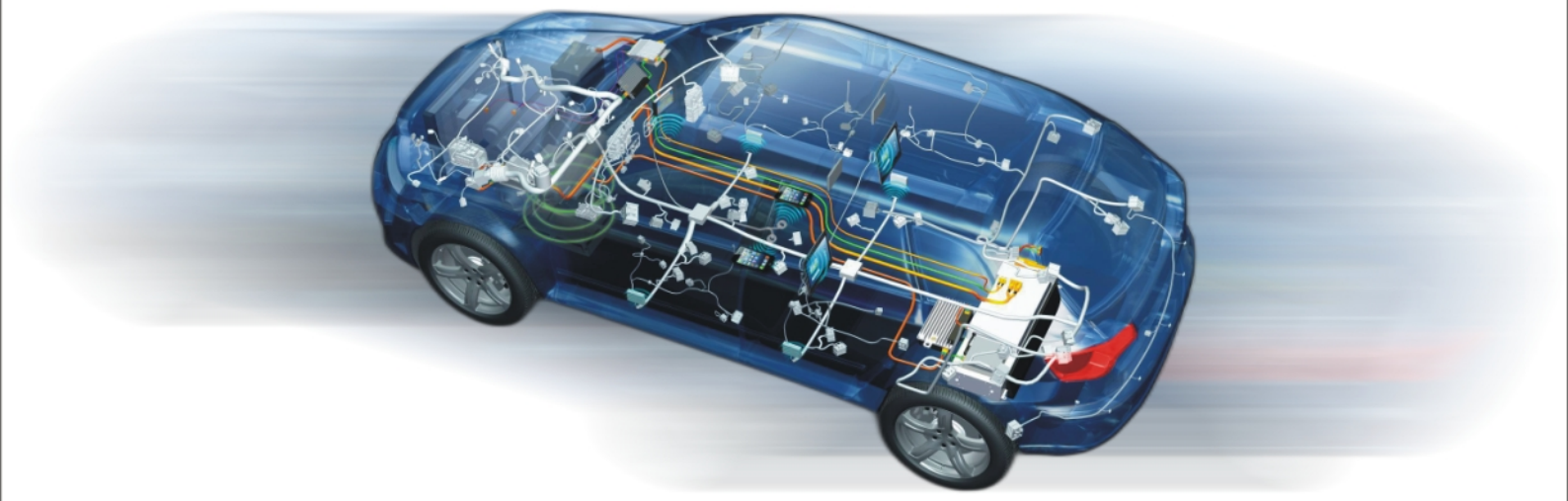
- High impact strength grades for ceiling profiles and floor profiles
- Expanded grades for extrusion or co-extrusion of foamed profiles
- Weatherability and UV resistant grades for window profiles
- Corrugated pipes to BS EN 61386-22:2004 standard
- Electrical conduits to BS EN 61386-21:2004 standard
- Electrical trunking and cable tray

PVC Compound will be designed in accordance to Hardness, Colour and Application.

Footnotes:

- For other properties, please contact us for detailed TDS





PVC COMPOUNDS FOR AUTOMOTIVE WIRES

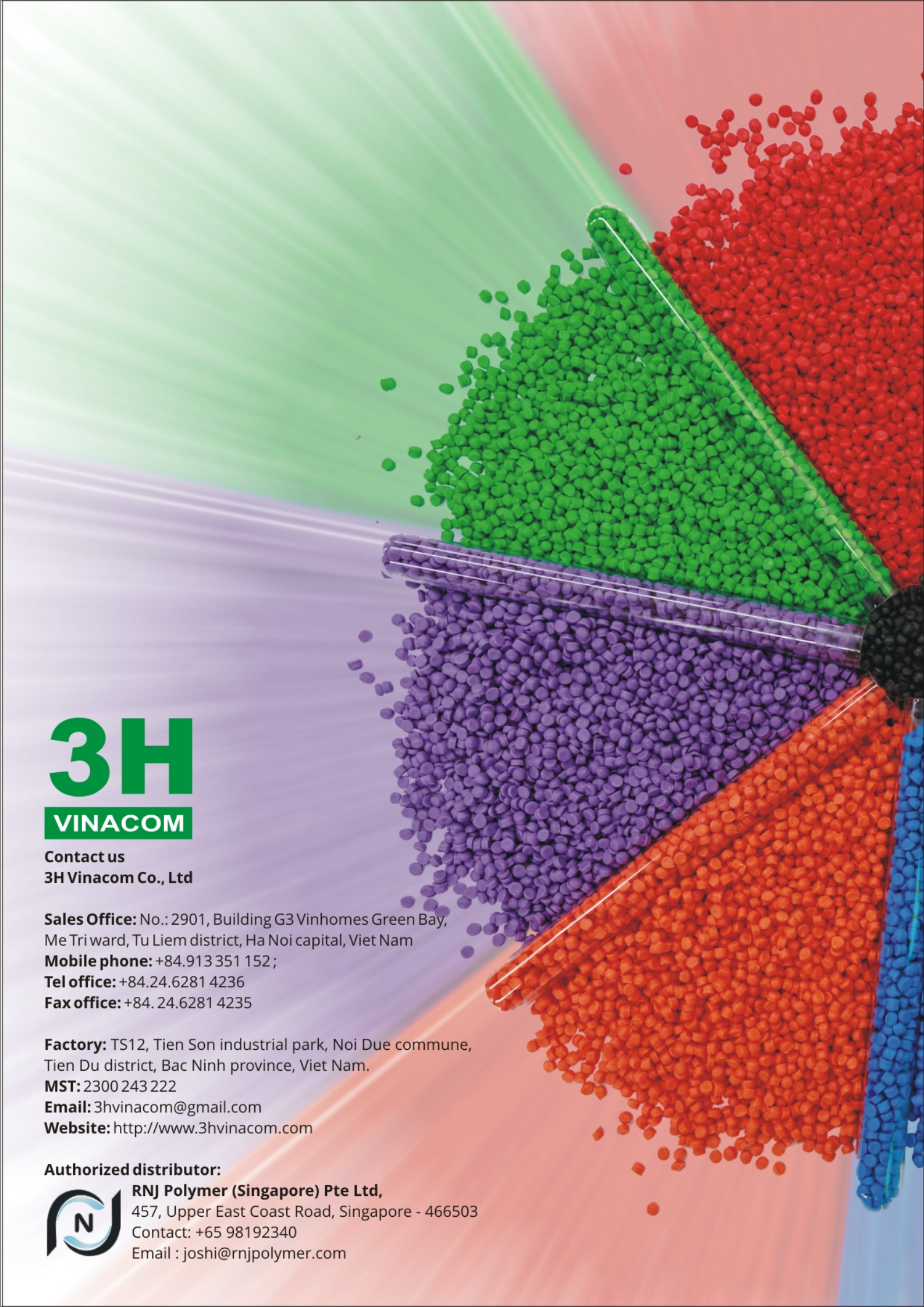
Technical Data

Properties	Test Method	Unit	Specification			
Standard			JASO D611	JASO D611	JASO D611	ISO 6722-1 : Class B
Symbol			AV	AVS	AVSS, CAVS	FLRY
Temperature rating			-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +105°C
Density	ISO 1183	g/cm3	1.30 ÷ 1.35	1.30 ÷ 1.35	1.30 ÷ 1.35	1.30 ÷ 1.35
Hardness	ASTM D 2240	Shore D	40 ÷ 45	40 ÷ 45	40 ÷ 45	40 ÷ 45
Tensile strength	JASO D618 – 5.3	MPa	≥ 15.7	≥ 18.5	≥ 20.5	≥ 22.5
Elongation at break	JASO D618 – 5.3	%	≥ 125	≥ 150	≥ 150	≥ 150
Heat resistance	JASO D618 – 5.8.1		121°C x 120hrs	121°C x 120hrs	121°C x 120hrs	125°C x 240hrs
Low temperature test	JASO D618 – 5.6	-	-40°C x 4hrs	-40°C x 4hrs	-40°C x 4hrs	-40°C x 4hrs
Winding test	JASO D618 – 5.6.2		√	√	√	√
Impact test	JASO D618 – 5.6.2		√	√	√	√
Oil-resistant test	JASO D618 – 5.11.2	-	50°C x 20hrs	50°C x 20hrs	50°C x 20hrs	50°C x 20hrs
Volume resistivity at 27°C	ASTM D257	Ω.cm	≥ 10^{12}	≥ 10^{12}	≥ 10^{12}	≥ 10^{12}
Thermal stability at 200°C	IEC 60811-3-2	min	≥ 100	≥ 100	≥ 100	≥ 100

Footnotes:

1. The density and hardness will be decided as per customer's requirement.
2. The property can be adjusted to be higher than the value in the standard if customer requires
3. Other standards are available upon request

OUR RELIABLE CUSTOMERS



3H
VINACOM

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