VIPA

VIPApolimeri

COMPANY PROFILES

Technology and innovation for a **sustainable** future

VIPA S.r.l. [*beginnings*]

Vipa is a leading company in the field of **PVC compound** since 1969, when it was founded by Mr Vincenzo Paolini in Porto D' Ascoli, and then moved one year later to the new plant in Ancarano, in the centre of Italy near the Adriatic sea, when the company was already registering 3.000 tons of production per year.

VIPA S.r.l. [*development*]

- First "*gravity*" PVC production in Italy
- Considerable investments in laboratory & research starting from 1980
- Enlargement of the production area and stock capacity of raw materials

VIPA S.r.l. *[today]*

- 9.000 m2 of production area
- 2.500 tons of solid components stock / 1.200 tons of liquid components stock
- Fully automated production
- 9 production lines
- Highly developed R&D department and completely equipped laboratory
- Production capacity: 35 000 tons per year
- Among the 10 biggest European PVC producers




VIPA S.r.l. [today]

QUALITY

- ISO 9001 certificate – Since 1994
- Responsible Care – Since 2007

Responsible Care®

DNV BUSINESS ASSURANCE

MANAGEMENT SYSTEM CERTIFICATE

Certificato No. / Certificate No. CERT-00447-95-ITA-ACCREDIA-SINCERT

Si attesta che / This is to certify that

VI.PA. S.r.l.

Via della Bonifica, Km. 13,400 - 64010 Ancarano (TE) - Italy

è conforme ai requisiti della norma per i sistemi di gestione:
has been found to conform to the management system standard:

UNI EN ISO 9001:2008 (ISO 9001:2008)

Questa Certificazione è valida per il seguente campo applicativo:
This Certificate is valid for the following product or service ranges:

Progettazione e produzione di compounds di PVC rigidi e plastificati, in granuli e dry-blend.
(Settore EA : 12)

Design and production of rigid and plasticized PVC compounds in granules and dry-blend.
(Sector EA : 12)

Data Prima Emissione/Initial Certification Date: 1995-04-18

Il Certificato è valido fino al: / This Certificate is valid until: 2015-07-01

L'audit è stato eseguito sotto la supervisione di/ The audit has been performed under the supervision of

Augusto Cerina
Lead Auditor

ACCREDIA

Luogo e Data/Place and Date: Agrate Brianza (MB), 2012-06-06

Per l'Organismo di Certificazione: / For the Accredited Unit:

Zeno Beltrami
Management Representative

La validità del presente Certificato è subordinata al rispetto delle condizioni contenute nel Contratto di Certificazione.
Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.

SISTEMA DI GESTIONE PER LA QUALITÀ CERTIFICATO
UNI EN ISO 9001:2008
SINCERT DNV

c UL us

Underwriters Laboratories Inc.®

VIPA s.r.l. [*the offer*]

- Thousands of formulations, including blends of PVC with other polymers in order to achieve special properties.
- Customized offers according to specific requirements
- Fully automated production plant with accurate systems of process control
- Qualified and experienced staff. Reliability and high quality product constancy
- Efficient logistic solutions (organized directly by Vipa trucks or by reliable logistic partners).

Rigid PVC

Flexible PVC

VIPA S.r.l. [*the offer*]

PVC COMPOUNDS RANGE FOR WIRE AND CABLES

Our wide production range includes rigid and flexible **PVC compounds** for many fields of application; among these, surely the sector of wire and cables is the most important for us: for this final application, we produce and supply among our customers many important European cables producers.

We do not have a fixed list of materials as we have thousands of formulations in our database, including many grades with special characteristics for example:

- Low smoke
- Low HCl emission,
- High temperature
- Low temperature resistance,
- Flame resistance,
- Oil resistance,
- Low permittivity,
- Etc;

Moreover, we are always ready to study and supply new products complying with international standards and/or customer's specific or special requests.
We usually receive technically detailed enquiries from the customers, if possible together with a small quantity (3/400 grams) of the competitor's compound actually used and a sample of the finished cable to be produced. After proper technical and laboratory analysis, we will quote our proper counter-type, and then -eventually- we could dispatch a compound sample for testing purposes.

VIPA Polimeri S.r.l. *[beginnings]*

• Established in 2004 by the same owners of VI.PA srl
• **Halogen Free Flame Retardant (HFFR)** and **Polyethylene (PE)** materials production dedicated for manufacturing of cables and wires, pipes, coated nets and others
• Production capacity: 15.000 tons/year




VIPA Polimeri S.r.l. [*development*]

R&D department / Production plant, warehouse, office space summary area of 6.000 m2 (located next to VIPA)

VIPA Polimeri

HFFR COMPOUNDS FOR WIRE & CABLE

HFFR COMPOUNDS

Please find attached a list of our more representative grades of Halogen Free Flame Retardant compounds. The materials listed below are all thermoplastic, halogen free, low smoke and flame retardant. They can be delivered in different colors, UV-resistant, rodent and termite resistant. Additional formulations are available, especially according to customer's specific requirements. Their application is either insulation or sheathing of power and telecommunication cables, according to the mentioned International Standards.

These thermoplastic compounds can be processed on extruders with a low compression ratio or on PVC extruders, using a temperature profile set between 140-170°C. The materials must be stored in closed and unbroken bags, avoiding direct exposure to sunlight and weathering. Due to water absorption, it is preferable to use the LSZH compounds within 3 months from the production date.

	Description	Density	Shore D Hardness	Tensile Strength	Elongation at Break	Oxygen Index	Material standard compliance*
		gr/cm³	points	N/mm²	%	%	
HM2 standard grades							
TV 5036	General purpose, low die-drool, high speed extrusion	1.50	50	11	160	36	M1, TI6, TI7, TM7, HM2, LTS 1-3
TV 5235	Optimized formulation	1.51	51	11	160	35	M1, HM2
V 5040-1	High flame retardancy	1.57	51	11	150	40	M1, HM2, ST8

	Description	Density	Shore D Hardness	Tensile Strength	Elongation at Break	Oxygen Index	Material standard compliance*
		gr/cm³	points	N/mm²	%	%	
HM4 standard grades							
AP 5136	General purpose	1.52	53	12	180	36	HM4, HM5, LTS2, SHF1, ST8
AP 52A35834	Optimized formulation	1.56	53	12	180	36	HM4, LTS2
P 5040	High flame retardancy	1.54	52	12	160	40	HM4, LTS1-2-3-4, ST8
GT 50A27535	High temperatures	1.54	52	12	160	35	M1, HM4, LTS2

	Description	Density	Shore D Hardness	Tensile Strength	Elongation at Break	Oxygen Index	Material standard compliance*
		gr/cm^3	points	N/mm^2	%	%	
Flexible grades							
GF 31A35037	Outstanding flexibility	1.48	31	8	250	37	TI6, TM7
GF 34A35136	Outstanding flexibility	1.49	34	8	250	36	TI6, TM7
GF 3831	Highly flexible	1.46	36	10	250	32	TI6, TI7, TM7, HM4, LTS2
GF 38A31131	Highly flexible, increased flame retardancy	1.49	37	10	250	40	TI6, TI7, TM7, HM4, LTS2
GP 4034	Multi-bending cycles	1.48	40	8	200	34	TI6, TM7
V 4035	General purpose	1.46	42	10	200	33	TI6, TM7, HM2
FV 4038	Flexibility and flame retardancy	1.50	42	10	200	39	M1, TI6, TM7, HM2
V 4332-7	General purpose, high speed extrusion	1.48	45	10	200	32	M1, TI6, TI7, TM7, HM2, HJ2

	Description	Density	Shore D Hardness	Tensile Strength	Elongation at Break	Oxygen Index	Material standard compliance*
		gr/cm^3	points	N/mm^2	%	%	
Special flame retardant grades for CPR							
VS 52A27038	Superior flame retardancy	1.55	50	10	150	41	M1, HM2
SP 52A28045	Low die-drool, superior flame retardancy	1.54	52	11	150	40	HM4, LTS2, SHF1
AL 50A27645	Highly flame retardant, good processability	1.59	51	10	150	42	HM2
AL 5042	Highly flame retardant, good processability	1.57	50	10	160	42	HM2, TI7
AL 5045	Highly flame retardant	1.57	50	10	170	44	HM2
AL 50A39545	Highly flame retardant	1.56	52	10	160	42	HM4, LTS 1-2-3-4
AL 50A28245	Top flame retardancy	1.65	54	11	140	50	M1, HM2

VIPA Polimeri

PE COMPOUNDS FOR WIRE & CABLE

POLYETHYLENE COMPOUNDS

We are attaching the Technical Information Sheets of our following products:

• BPD 7100 NATURAL, an high density polyethylene compound suitable for cellular **insulation** of communication cables (gas injection process);

• BPD 4077 NATURAL, a MDPE compound for **jacketing** – outdoor weather ability- for telecommunication, particularly fibre optic cables, and power cables applications (available natural or coloured);

• LDE 35 BLACK, a compound based on LDPE co-polymers for **cable sheathing** (also available natural or coloured).

TECHNICAL PROPERTIES / PRODUCT CODE: BPD 7100

TEST	UNIT	TYPICAL VALUE	TEST METHOD
Melt Flow Rate 140°C/Kg 5	g/10 min	8.5	ISO 1133
Conventional Density (conditioning ISO 1872/1)	kg/m^3	946	ISO 1183
Shore D 15”	points	58	ISO 868
Tensile strength at yield	N/mm2	22	ISO 527
Elongation at break	%	250	ISO 527
Dieletric loss angle @ 1 MHz	microrad	60	ASTM D 1531
Dieletric constant @ 1 MHz	-	2.35	ASTM D 1531
DC volume resistivity @ 23°C	□ x cm	$> 10^{15}$	ASTM D 257
Dielectric strength, short time	KV/mm	> 22	ASTM D 149
Oxidation Induction time test (OIT) @ 200°C/Al	Min	16	EN 728

BPD 7100 is a high-density polyethylene compound suitable for cellular insulation of communication cables produced by the **gas injection** process.
Specification:
BPD 7100 meets the following material classifications:
ASTM D 1248: Type III, Class A, Category 3
ISO 1872-PE, KGHN, 45-D045

TECHNICAL PROPERTIES / PRODUCT CODE: BPD 4077 NATURAL

TEST	UNIT	TYPICAL VALUE	TEST METHOD
Melt Flow Rate 190°C/2.16kg	g/10 min	**0.7**	**ISO 1133**
Density	kg/m^3	**935**	**ISO 1183**
Tensile strength at yield	N/mm^2	**16**	**ISO 527**
Tensile strength at break	N/mm^2	**30**	**ISO 527**
Elongation at break	%	**> 600**	**ISO 527**
Variation of mechanical properties after air ageing @ 110°C/14days	%	**< ± 30**	**ISO 527**
Heat deformation resistance @ 115°C/6hours	%	**< 50**	**IEC 60811-3-1**
Environmental Stress Cracking Resistance, 10% "Igepal" F_0	hours	**> 1000**	**IEC 60811-4-1**
Artificial weathering test: UV radiation resistance	\	**passed**	**HD 605 S2:2008**
Shore D 1"	points	**58**	**ISO 868**

BPD 4077 is a natural, medium density, polyethylene compound. It contains a UV stabiliser and an antioxidant package designed to give complete outdoor weatherability.
In addition to its excellent mechanical properties, BPD 4077 meets the thermal ageing required for HDPE materials.
Combined with its ease of processability, this makes BPD 4077 suitable for the **jacketing** of cables for telecommunication, particularly fibre optic cables and power cable applications

TECHNICAL PROPERTIES / PRODUCT CODE: LDE 35 BLACK

TEST	UNIT	TYPICAL VALUE	TEST METHOD
Melt flow index (190°C/2.16Kg)	g/10 min	**0.4**	ISO 1133
Conventional density (ISO 1872/1)	kg/m^3	**935**	ISO 1183
Tensile strength at yield	N/mm^2	**9**	ISO 527
Tensile strength at break	N/mm^2	**16**	ISO 527
Elongation at break	%	**> 650**	ISO 527
Tensile strength at break after ageing 100°C/10days	N/mm^2	**14**	ISO 527
Elongaton at break after ageing 100°C/10days	%	**> 600**	ISO 527
Vicat softening point	°C	**90**	ISO 306
Low temperature brittleness	°C	**- 76**	ASTM D 746-07
Shore D 15”	points	**45**	ISO 868
ESCR, 10% “Igepal” F0	h	**> 1000**	ASTM D 1693
Carbon black content	%	**2.5**	IEC 60811-4-1
Artificial weathering test: UV radiation resistance	\	**passed**	HD 605 S2:2008
Thermocompression resistance @ 85°C/24h	%	**< 15**	CEI 20-34 / 3-1
Impact strength @ -15°C	\	**No breaks**	CEI 20-34 / 1-4
Volume resistivity	Ωcm	**$> 10^{16}$**	ASTM D 257

LDE 35 BLACK is a black compound of polyethylene copolymers for **cable sheathing**, also available in different colours.

VIPA | VIPA Polimeri [why us?]

- Almost 50 years market presence and significant experience
- Lots of tuned and tested formulations

- Customized offers according to customer's requests
- Possibility of combined deliveries (PVC / HFFR / PE)

- Sales and logistic network developed over the years
- Organizational structure for fast and efficient operations

- Private ownership
- Financial stability

Technology and innovation for a sustainable future

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