

G4J - gel for prefilled joints

G4J is a Polymeric Gel on elastomeric cross linked base, chemically inert and absolutely no toxic.



G4J is UL Recognized Component

For additional information see the UL Online Certifications Directory at www.ul.com/database

G4J is used for the filling of **all RAYTECH PREFILLED joints**:

- HAPPY** and **HAPPY JOINT** in all packing options;
- GEL BOX LINE (ISAAC, PASCAL, WATT, JOULE, KELVIN)** in all packing options;
- GEL COVER LINE (OHM, BAR, MAMMUT GEL COVER)** in all packing options;
- NANO JOINT, NANO MAM** and **NANO FOR**,
- BRAVO** and **MINI BRAVO**,
- LITTLE JOINT (BARNEY, FRED, DINO, BARNEY Y, FRED Y, BOB4)** in all packing options,
- READY BOX IP68, FOX BOX**
- SUPER CLIK, RAPID JOINT IP68, RAPIDINO IP68,**
- KING JOINT, RAPID JOINT, CLIK FIRE,**
- RAPID JOINT IP68 System Fast RP** and **RAPID JOINT System Fast RP,**
- GALACTIC MAMMUT SECURITY, GALACTIC NANO JOINT,**
- MCA UNIVERSAL IP68** and **MCA-Y.**

PROPERTY		TEST METHOD / NOTE	UNIT	TYPICAL VALUE
Physical	Aspect	-	-	Gel
	Colour	-	-	Clear and transparent
	Initial Hardness	Penetration cone ASTM D 217/C	1/10 mm	340
	After aging hardness	Penetration cone ASTM D 217/C	1/10 mm	290
	Hardness	-	-	0 SHORE 00
	Density	-	g/cc	0,97
	Thermal conductivity	-	W/mK	Approx 0,2
	Continuous working temperature	-	°C	from -60 to +150
	Installation temperature	(related to joints)	°C	from -40 to + 50
	Water absorption after 30 days immersion	-	%	<< 0,05%
Flammability	Flame class	UL 94	-	HB
	Flammability point	-	°C	>200
	Auto-ignition temperature	-	°C	>400
Electrical	Dielectric strength	-	kV/mm	25
	Dielectric constant / Permittivity	@ 100Hz @ 100kHz	-	2.95 2.95
	Power factor / Tan δ	@ 100Hz @ 100kHz	-	0,0025 0,00015
	Volume resistivity	-	Ω cm	2,4 x 10exp 15
	Degree of protection	EN 60529	-	IPX8, IP68 (Depending on the envelopes)

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 R.E.A. 1458135 • Iscr. Reg. Imp. MI 11325760152 • Capitale Sociale € 78000,00 i.v. • Part. IVA e C.F. 11325760152

EXPOSITION TO CHEMICALS OF CROSSLINKED PRODUCT	
Salt, salty water etc	have no adverse effect.
Sea water or chlorine environments (swimming pools etc.)	have no adverse effect.
Inorganic acids in water solutions	have not visible effects.
Strong, pure acids or alkaline (not in solution)	The exposition has to be avoided, especially at high temperature.
Alkaline solutions and vinegar	could bring, after a long time of exposition, to a softening of the external surface.
Solutions of hydrocarbons in water	could give, after a long exposition at quite high temperatures, the hardening of the external surface of the products; of course nothing happens for temporary expositions
Pure hydrocarbons	Permanent immersion in strong and pure hydrocarbons has to be avoided.

SHELF LIFE	
The product has unlimited shelf life, if stored and used according to the relevant instructions.	

Settimo Milanese, 10/2018

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TDS_G4J_gel_prefilled - 2/2



POLYPROPYLENE AUTO-EXTINGUIBLE - UL94 V2


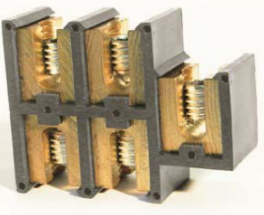

- Raw material for the moulding of the following lines of enclosures:
 - Materia prima per lo stampaggio dei seguenti accessori:
 - Matière première pour la fabrication des suivantes accessoires:
- **Gel Box Line, (ISAAC, PASCAL, WATT, JOULE, KELVIN), HAPPY** with coloured casing ;
Gel Box Line, (ISAAC, PASCAL, WATT, JOULE, KELVIN), HAPPY con involucri colorati ;
Gel Box Line, (ISAAC, PASCAL, WATT, JOULE, KELVIN), HAPPY avec boites colorées ;
 - **MAMMUT GEL COVER**
 - **NANO JOINT, NANO MAM , NANO FOR**
 - **LITTLE JOINT (BARNEY, FRED, DINO, BARNEY Y, FRED Y, BOB4)**
 - **SUPER CLIK**
 - **RAPID JOINT IP68, RAPIDINO IP68**
 - **KING JOINT**
 - **RAPID JOINT**
 - **CLIK FIRE**
 - **MAGIC JOINT FIRE**
 - **RAPID JOINT L RIP68 e RAPID JOINT RP**
 - **GALACTIC MAMMUT SECURITY**
 - **GALACTIC NANO JOINT 4**
 - **MCA Universal IP68**
 - **MCA-Y**

PROPERTIES – Proprietà - Propriétés	METHOD Metodo Méthode	UNIT Unità Unité	TYPICAL VALUE Valore tipico Valeur typique
• GENERAL – generali - général			
Density Densità Densité	ASTM D-792	g/ml	0.93
Melt volume rate Tasso volumetrico allo stato fuso Débit volumique à l'état fondu 230°C/2.16Kg	ISO-1133	cm ³ /10 min	16.0
Linear modul shrinkage Ritiro lineare Rétraite linéaire	ASTM D-955	%	1.5
Transversal mould shrinkage Ritiro trasversale Rétraite transversale	ASTM D-955	%	1.5
Water adsorption (24h-23°C) Assorbimento acqua (24h-23°C) Absorption de l'eau	ASTM D-570	%	0.02
• THERMAL – Termiche- Thermique			
Vicat B	ASTM D-1525	°C	80
HDT A	ASTM D-648	°C	55

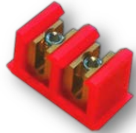
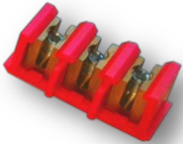


PROPERTIES – <i>Proprietà - Propriétés</i>	METHOD <i>Metodo Méthode</i>	UNIT <i>Unità Unité</i>	TYPICAL VALUE <i>Valore tipico Valeur typique</i>
• MECHANICAL – Meccaniche - Mécanique			
IZOD impact strength, notched <i>IZOD con intaglio IZOD avec entaille</i>	ISO-180/1A	KJ/m ²	9
IZOD impact strength, unnotched <i>IZOD senza intaglio IZOD sans entaille</i>	ISO-180/1U	KJ/m ²	NB
Tensile strength <i>Carico a trazione Charge à la traction</i>	ASTM D-638	MPa	20
Tensile elongation at break <i>Allungamento a rottura Allongement à rupture</i>	ASTM D-638	%	>100
Tensile modulus <i>Modulo elastico trazione Module d'élasticité traction</i>	ASTM D-638	MPa	1000
Flexural modulus <i>Modulo elastico a flessione Module d'élasticité à flexion</i>	ASTM D-790	MPa	-
Flexural strength <i>Carico massimo a flessione Charge maximale à flexion</i>	ASTM D-790	MPa	-
• ELECTRICAL – elettriche - électrique			
Comparative tracking index <i>CTI Indice d'alignement comparatif</i>	IEC 60112	V	-
Surface resistivity <i>Resistività di superficie Resistività de surface</i>	-	Ohm	-
• FLAME RESISTANCE - Resistenza alla fiamma – Resistività à la flamme			
Flame resistance (3.2 mm) <i>Resistenza alla fiamma (3.2 mm) Resistività à la flamme (3.2 mm)</i>	UL94	-	V2
Flame resistance (1.6 mm) <i>Resistenza alla fiamma (1.6 mm) Resistività à la flamme (1.6 mm)</i>	UL94	-	V2
Flame resistance (0.8 mm) <i>Resistenza alla fiamma (0.8 mm) Resistività à la flamme (0.8 mm)</i>	UL94	-	-
GWFI	IEC 60695-2-12	°C/mm	-
GWIT	IEC 60695-2-13	°C/mm	-

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Item	Shape	Description	Cable Section Range (mm ²)		Dimensions (mm)			Part of Jointing Kit	Selling Unit (SU)
			in line /straight	branch	L or Ø	W	H		
MORSETTIERA L16		INSULATED CONNECTION BLOCK L 5x16 for in line connections up to 5 core Grey polypropylene separator, with pre-assembled brass connectors with steel screw	1,5 - 16	na	31	24	-	KING JOINT 0, L6 & L10 RAPID JOINT L1,5-IP68 & L6-IP68 WONDER JOINT SP L16 MAGIC P JOINT SP L16 MAGIC JOINT SP L16 RAYCAST SP L16	polybag of 10 PCS
MORSETTIERA L25		INSULATED CONNECTION BLOCK L 5x25 for in line connections up to 5 core Grey polypropylene separator, with pre-assembled brass connectors with allen screw (Allen key size 2 not included)	4 - 25	na	34	39	-	KING JOINT L25 RAPID JOINT L10-IP68 WONDER JOINT SP L25 MAGIC P JOINT SP L25 MAGIC JOINT SP L25 RAYCAST SP L25	polybag of 10 PCS
MORSETTIERA Y6		INSULATED CONNECTION BLOCK Y 5x6 for branch connections up to 5 core Grey polypropylene separator, with pre-assembled brass connectors with allen screw (Allen key size 2 not included)	1,5 - 6	1,5-4	36	13	28	KING JOINT Y6 WONDER JOINT SP Y6 MAGIC P JOINT SP Y6 MAGIC JOINT SP Y6 RAYCAST SP D6	polybag of 10 PCS
MORSETTIERA Y16		INSULATED CONNECTION BLOCK Y 5x16 for branch connections up to 5 core Grey polypropylene separator, with pre-assembled brass connectors with allen screw (Allen key size 6 not included)	4 - 16	1,5-4	45	16	36	KING JOINT Y16 WONDER JOINT SP Y16 MAGIC P JOINT SP Y16 MAGIC JOINT SP Y16 RAYCAST SP D16	polybag of 10 PCS
MORSETTIERA T		INSULATED CONNECTION BLOCK Y 4x35 for branch connections up to 4 core Black polypropylene separator, with pre-assembled brass connectors with allen screw (Allen key size 6 not included)	10 - 35	1,5-6	50	24	36	KING JOINT Y35 MAGIC P JOINT SP T35 MAGIC JOINT SP T35 RAYCAST SP T 35 SUPER CLIK 3	polybag of 5 PCS
MORSETTIERA B1		INSULATED CONNECTION BLOCK LY 1x6 for branch or in line connections Red polypropylene separator, with pre-assembled brass connector with allen screw (Allen key size 2 not included)	1 x 1,5 - 6	1 x 1,5 - 6	17	14	15	BRAVO 1-6 MINIBRAVO 1 BARNEY Y RAPIDINO IP68 Y1	polybag of 30 PCS



Item	Shape	Description	Cable Section Range (mm ²)		Dimensions (mm)			Part of Jointing Kit	Selling Unit (SU)
			in line /straight	branch	L or Ø	W	H		
MORSETTIERA B2		INSULATED CONNECTION BLOCK LY 2x6 for branch or in line connections Red polypropylene separator, with pre-assembled brass connectors with allen screw (Allen key size 2 not included)	2 x 1,5 - 6	2 x 1,5 - 6	29	14	15	MINIBRAVO 2	polybag of 30 PCS
MORSETTIERA B3		INSULATED CONNECTION BLOCK LY 3x6 for branch or in line connections Red polypropylene separator, with pre-assembled brass connectors with allen screw (Allen key size 2 not included)	3 x 1,5 - 6	3 x 1,5 - 6	40	22	15	BRAVO 3-6 MINIBRAVO 3 FRED Y RAPIDINO IP68 Y3 BOB4	polybag of 30 PCS
MORSETTIERA 3-6		INSULATED CONNECTION BLOCK LY 3x6 for branch or in line connections up to 3 cores Red polypropylene separator, with pre-assembled brass connectors with steel screw	Straight: 1,5 - 6	Main: 4 Branch: 2,5	20	25,5	18	SUPER CLIK 0	polybag of 10 PCS
MORSETTIERA 4-6		INSULATED CONNECTION BLOCK LY 4x6 for branch or in line connections up to 4 cores Red polypropylene separator, with pre-assembled brass connectors with steel screw.	Straight: 1,5 - 6	Main: 4 Branch: 2,5	19	25,5	17,2	DINO RAPIDINO IP68 L4	-



Item	Shape	Description	Cable Section Range (mm ²)		Dimensions (mm)			Part of Jointing Kit	Selling Unit (SU)
			in line /straight	branch	L or Ø	W	H		
MORSETTIERA 5-6		INSULATED CONNECTION BLOCK LY 5x6 for branch or in line connections up to 5 cores Red polypropylene separator, with pre-assembled brass connectors with steel screw	Straight: 1,5 - 6	Main: 4 Branch: 2,5	31	25,5	18	SUPER CLIK 1	polybag of 10 PCS
MORSETTIERA 5-16		INSULATED CONNECTION BLOCK LY 5x16 mm² for branch or in line connections up to 5 cores Red polypropylene separator, with pre-assembled brass connectors with steel screw	Straight: 4 - 16	Main: 10 Branch: 6	38,5	28,5	23	SUPER CLIK 2	polybag of 10 PCS
MORSETTIERA 3x6		INSULATED CONNECTION BLOCK LY 3x6 mm² for branch or in line connections Grey polypropylene separator, with pre-assembled brass connectors with allen screw (Allen key size 2 not included)	3 x 1,5 - 6	3 x 1,5 - 6	37	14	22	READY BOX IP68 90	
MORSETTIERA 5x6		INSULATED CONNECTION BLOCK LY 5x6 mm² for branch or in line connections Grey polypropylene separator, with pre-assembled brass connectors with allen screw (Allen key size 2 not included)	5 x 1,5 - 6	5 x 1,5 - 6	59	14	22		READY BOX IP68 120

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GEL CONNECTION IP68
CABLE GLANDS METRIC PITCH

The cable glands in **LITTLE JOINT (BARNEY, FRED, DINO, BARNEY Y, FRED Y, BOB4)**, **MINIRAPID (RAPIDINO IP68)** and **READY BOX IP68, FOX BOX** accessories are made of a self-extinguishing compound, with high resistance to UV radiation and to ageing, also in the most severe conditions

Item	Pitch	Ø cable range		Ø tubes	Part of the kit IP68
	METRICO	Min (mm)	Max (mm)		
DADO M16	M16X1.5	6	10	-	BARNEY, BARNEY Y, RAPIDINO IP68 L2, RAPIDINO IP68 Y1
DADO M20	M20X1.5	8	13	-	FRED, FRED Y, BOB4, RAPIDINO IP68 L3, RAPIDINO IP68 Y3
DADO M25	M25X1.5	10	16	-	DINO, RAPIDINO IP68 L4
BULLONE (hole Ø 21)	M25X1.5	6*	18	16*, 20	READY BOX IP68 120, READY BOX IP68 90, FOX BOX

*for cable up to 13 mm, use the adaptors included in the kit

* use the adaptors included in the kit

PROPERTY	TEST METHOD	UNIT	TYPICAL VALUE
Protection degree	IEC 60529	-	IP 68
• MECHANICAL			
Tensile strength	ASTM D-638	MPa	20
Tensile elongation at break	ASTM D-638	%	>100
Tensile modulus	ASTM D-638	MPa	1000
RESISTENZA ALLA FIAMMA			
Flame resistance (3.2 mm)	UL94	-	V2
Flame resistance (1.6 mm)	UL94	-	V2
Flame resistance (0.8 mm)	UL94	-	V2

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