# Magic Gel & Magic Fluid

Bicomponent gel with very high dielectric and thermal characteristics, ideal for connection systems (joint shells or enclosures) for power cables.

**Gel:** UL 94-HB

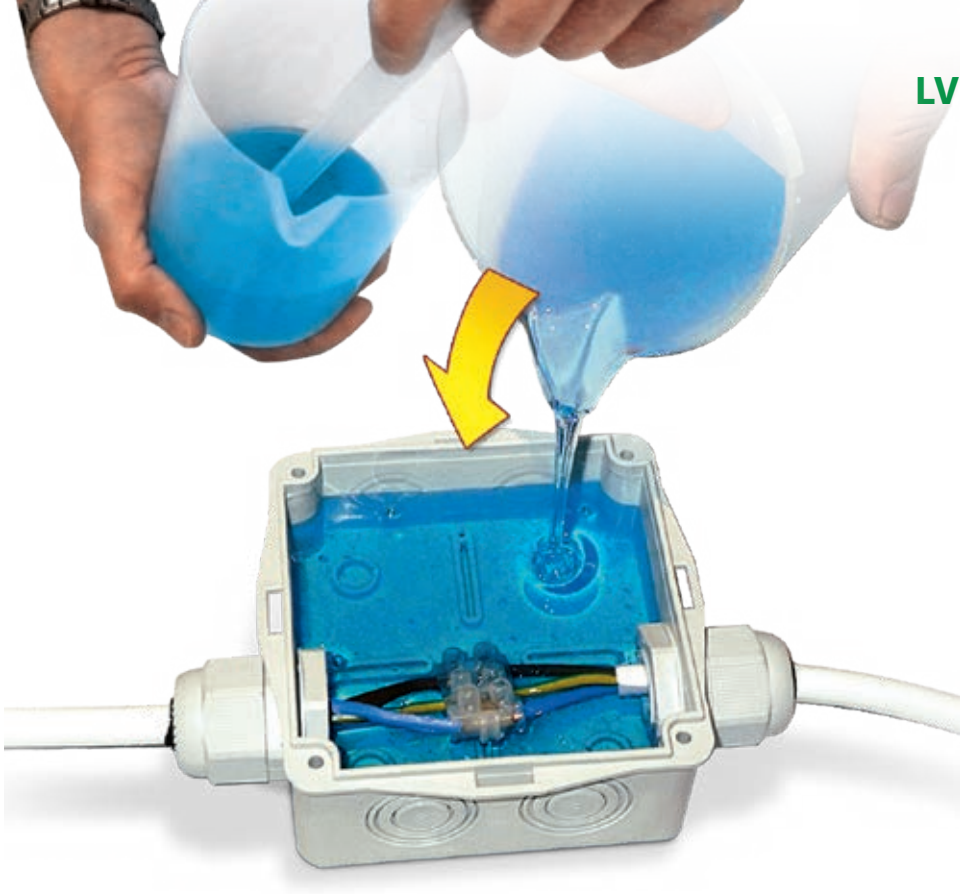
**Dielectric strength:**
>23 kV/mm
**Cross linking time:**
fast (about 10 min. at 23°C)
**Volume resistivity:**
>2 . $10^{15}$ Ω cm
**Working temperature:**
-60°C / +200°C
**Overload temperature for short periods:**
up to 250°C
**Stabilised for:**
mould - UV
**Degree of protection:**
IP68 (in proper casings)

IP68 OFFICIALLY TESTED | IMQ

Nonfood Compounds P1 NSF

The insulating and sealing gel, when cast in suitable casings, ensures an IP68 degree of protection and it is able to replace all types of resins. This is a self-polymer insulation in bottle or in a single use bag, with cold cross linking. Once poured, the insulation, characterized by very low viscosity, surrounds and envelopes any type of material, cross linking in less than 10 minutes. Cross linking with a very slow isothermal peak that does not thermally stress the materials it comes into contact with.

- For high temperature applications!
- Quick cross linking (only 10 minutes)
- Re-enterable also after long working periods
- The gel is not-classified as hazardous under the CLP Directive
- Low viscosity

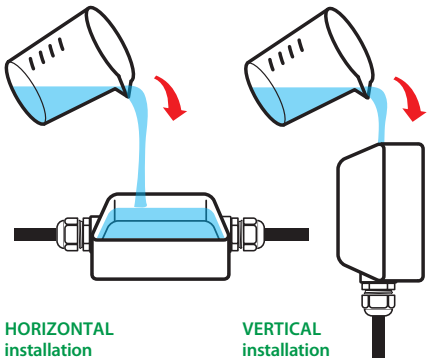


## *Problem* ENERGY

**What does a gel for this type of system have to give?**

- ☑ **INSULATION:** Elevated voltages (1 kV operating, 4 kV testing)
- ☑ **THERMAL PERFORMANCE:** Operating temperature 90°C, overload temperature 130°C, short circuit temperature 250°C
- ☑ **SEALING:** Installations also possible in humid environments, flooded wells
- ☑ **DEGREE OF PROTECTION:** Must also work with water between the cores of the cable
- ☑ **CERTIFIED SYSTEMS:** The combination of insulation gel + casing must comply with current standards CEI 20-33 and EN 50393

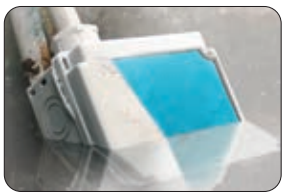
***Solution:* *Magic Gel*** meets all your Energy system requirements!



HORIZONTAL installation

VERTICAL installation

| Product | Colour | Package type | Total quantity |
|---|---|---|---|
| Magic Gel 300 | ● | 2 bottles | 300 ml |
| Magic Gel 420 | ● | 1 single, bi-component bottle<br>1 small basin - 1 mixing spoon | 420 ml |
| Magic Gel 1000 | ● | 2 bottles - 1 small basin - 1 mixing spoon | 1000 ml |
| Magic Gel 2000 | ● | 2 single, bi-component bottles<br>1 small basin - 1 mixing spoon | 2 x 1000 ml |
| Magic Gel 10000 | ● | 2 tanks - 1 small basin - 1 mixing spoon | 10 lt |
| Magic Fluid 90 | ● | Bicomponent single dose bag | 90 gr |
| Magic Fluid 110 | ● | Bicomponent single dose bag | 110 gr |
| Magic Fluid 170 | ● | Bicomponent single dose bag | 170 gr |
| Magic Fluid 210 | ● | Bicomponent single dose bag | 210 gr |
| Magic Fluid 420 | ● | Bicomponent single dose bag | 420 gr |
| Magic Fluid 550 | ● | Bicomponent single dose bag | 550 gr |

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Leader in Quality

# TECHNICAL DATA SHEET

## MAGIC GEL & MAGIC FLUID

### INSULATING AND SEALING FLUID

Insulating and sealing polymeric fluid with fast cross linking at room temperature, for filling of closures, boxes, terminal blocks etc.. Suitable for anticorrosion protection. Non toxic and safe. High resistance to natural ageing.

**MAGIC GEL & MAGIC FLUID are UL Recognized Components**
For additional information see the UL Online Certifications Directory at
www.ul.com/database

The product is available in following sizes:

- Bottles/single bi-component bottles/tanks, under trade name **MAGIC GEL**:
  Magic Gel 300, Magic Gel 420, Magic Gel 1000, Magic Gel 2000 e Magic Gel 10000
- In bicomponent sachets from 90 to 550 ml under the trade name **MAGIC FLUID**
- In KIT IP68 under the trade name **MAGIC BOX (containing MAGIC FLUID)**
- As filler for all joints type **MAGIC JOINT (containing MAGIC FLUID)**

| PROPERTY | | TEST METHOD / NOTE | UNIT | TYPICAL VALUE |
|---|---|---|---|---|
| Physical | Aspect | - | - | Fluid |
| | Colour | - | - | Blue transparent |
| | Viscosity at 23°C | On mixed product | - | Approx 1600 mPa.sec |
| | Gel time | - | Minutes | Approx 5 @ 25°C |
| | Setting time | | Minutes | < 10 @ 25°C |
| | | Higher temperatures ➔ lower setting time; Lower temperature ➔ higher setting time. | | |
| | Exothermic temperature | - | °C | Non exothermic reaction |
| | Hardness | Penetration cone ASTM D 217/C | 1/10 mm | Approx 200 |
| | | | | 0 shore 00 |
| | Density | - | g/cc | 0,96 |
| | Thermal conductivity | - | W/mK | Approx 0,2 |
| | Continuous working temperature | - | °C | -60 to +200°C |
| | Installation temperature | - | °C | -5 to +45°C |
| | 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 | >23 |
| | Dielectric constant / Permittivity | @ 1kHz | - | < 5 |
| | Power factor / Tan δ | @ 1kHz | - | < 5 exp -3 |
| | Volume resistivity | - | Ω cm | >2 x 10 exp 15 |
| | Degree of protection | EN 60529 | | IP 68 in proper casings |



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| PROPERTY | | TEST METHOD / NOTE | UNIT | TYPICAL VALUE |
|---|---|---|---|---|
| Use | Product removal facility after installation in casings | - | - | Very high |
| | "Self fusing" property of a new layer of product on the previous one | - | - | Very High |

## CHEMICAL COMPOSITION

Mixture of substances and ingredients not classified as hazardous under CLP regulation: organosiloxanes and additives.

## 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. |

## PRECAUTIONS FOR USE

| | |
|---|---|
| WARNING: TO BE POURED IN CLEAN AND DRY CLOSURES | Before opening and mixing the components, be sure that the closures are clean and dry, free from processing waste or powder or residues which can inhibit the correct cross linking<br>Be aware Latex gloves, heavy metal salts, amines, sulphur and derivates, catalysts of epoxy resins can inhibit the curing. |
| ATTENTION STAIN | If the product falls down on clothes or floor, it can stain and it is difficult to remove. |
| CLEANING OF THE STAINS ON THE FLOOR | if the product has fallen on the floor BEFORE CROSS LINKING, it is suggested to dry with a cloth the liquid, then strongly brush the floor with a normal, domestic floor cleaner (possibly "strong" type) and possibly finish the cleaning with the cloth moistened with a suitable chlorinated solvent, such as trichloroethylene; |
| | if the product is on the floor ALREADY CROSS LINKED, it is suggested to remove the gel with a spatula, and then strongly brush the floor with a normal, domestic floor cleaner (possibly "strong" type) and possibly finish the cleaning with the cloth moistened with a suitable chlorinated solvent, such as trichloroethylene; |
| | by experience products based on trichloroethylene could be suitable for removing, when available on the market and when used according to the relevant instructions. |

## SHELF LIFE

ATTENTION: The prolonged exposure to temperatures ≥ 40° C is not recommended

The product has unlimited shelf life, if it is stored in a suitable way, in the original closed packages.

For precautions we recommend the use within 5 years.

## SAFETY

The product has not been classified as hazardous according to the legislation in force. (Regulation (EC) No 1272/2008 as amended).

*Settimo Milanese, 01/2021*



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