



Limitations

Respect the bending radius and work pressure established values.

Mind the chemical compatibility of the fluid with the silicone.

This product is not recommended for the transport of abrasive particles

Regulations

The inner layer of platinum cured silicone produced in compliance with:

- US FDA Standard 21 CFR 177.2600
- German BfR Standard part XV
- USP Class VI <88> in vivo tests
- ResAp 2004 (5), according to Reg 1935/2004/EEC, and Reg 10/2011/EEC

Silicone rubber used is in accordance with EU Directive 2002/95/ECC for Restriction of the use of hazardous substances (RoSH)

Applications

It is especially recommended for the transport of liquid or semi-liquid fluids in the food, cosmetic, chemical and pharmaceutical industries.

It is recommended especially when a smaller bending radius is required. These hoses are able to transport liquid or semi-liquid foodstuffs at high temperatures by impulsion or suction, since their design can resist pressure or vacuum.

Product specially indicated to avoid the accumulation of static electricity for use in potentially explosive atmospheres.

Properties

- Translucent and smooth inner appearance, black colored and smooth outer appearance.
- Not affected by anti-freeze or anti-rust liquids.
- Excellent resistance to thermal aging and oxidizing agents (oxygen, ozone, UV..)
- Can be equipped with 316L stainless steel fittings on each end with a roughness value of less than 0.8 µm (or 0.5 µm on request).
- Operational temperature range from -60°C (-75°F) to +180°C (356°F), it may reach up to +200°C (392°F) during short periods of time.
- The electrical surface resistance of the black silicone has been evaluated in a external laboratory set up to RD334/1992 and authorized by ENAC for the tests of materials for use in potentially explosive atmospheres (LOM 09NESP4322).
- Electrical Surface Resistance is <math><10^3</math> Ohm according to the specification indicated in part 26.13 of EN 60079-0:2006.

Construction

This reference is manufactured with three polyester fabric reinforcements and a stainless steel wire spring, everything encased inside the hose.

Technical information for explosive atmospheres

Obligations

- This reference is outside the scope of the ATEX Directive 94/9/EC due to the fact it's a product having not their own source of ignition.
- End-to-end electrical bonding to assure continuity is necessary; metal helix of the hose must be connected electrically to both end fittings.
- Properly connect of the hose to earth (is necessary earth the hose metal fittings or directly the wire of both ends of the hose).
- This hose cannot be used for transport of explosive materials.

Electrical properties

	Reference standards	Classification of hose grades
Electrical features information	ISO 8031:2009 / EN12115 (if is complete with end fittings) $R < 100\Omega$	Continuous electrically bonded
	ISO 8031:2009 & IEC/TS 60079-32-1:2013 Conductive only on outer cover (incorporating conductive only on outer cover, $R < 1M\Omega$)	Ω -C
Explosive Atmosphere inside the hose	ATEX ZONES Not applicable for dusts	Zones 0-1-2 (Class I D1 & D2) According to IEC/TS 60079-32-1:2013 the hose can classify as "Review each application ¹ " for flammable high ($> 10.000 \text{ pS/m}$), medium and low conductive liquids ($< 10.000 \text{ pS/m}$). It is necessary a specific analysis of the risk according to the point "Use precautions"
Explosive Atmosphere outside the hose	ATEX ZONES	Zone 0-20 (Class I & II D1) Zone 1-21 (Class I & II D1) Zone 2-22 (Class & II D2)

Use precautions

¹ "Review each application". Hazards may arise if the lining resistance is very high and the capacitance to the embedded conductor or conductive cover is low. Hazards can be mitigated by using a more conductivity lining or hybrid grade as M/ Ω -L or M/ Ω -CL.

In the case of flammable high conductive liquids ($> 10.000 \text{ pS/m}$), this hose is acceptable only if there is a continuous column of high conductivity liquid throughout the hose (point 7.7.3.5 of IEC/TS 60079-32-1:2013).

- The hose must be absolutely full of liquid.
- The flow speed cannot be higher than values indicated on bellow table according to diameter of the hose:

Pipe size (mm)	Flow velocity (m/s)
0-50	7.0
50-65	6.1
65-80	4.9
80-100	3.7
>100	1.0

- The MIE (Minimum Ignition Energy) of the liquid must be higher than 1mJ.
- For liquids with MIE < 1mJ should be necessary use inert atmosphere during the cleaning, charge, discharge or any interruption on process.
- This hose cannot be used with pneumatic transport of bulk materials. For such pneumatic transport the leakage resistance from any place of the inner wall of the hose has to be less than 100 MΩ (point 9.3.3 of IEC/TS 60079-32-1:2013).
- The end-to-end resistance of the hose should be checked regularly to ensure that this bonding remains intact. It's recommendable to perform this check before each use.
- The hose should be inspected over the entire length for signs of hardening, abrasion, cuts, kinking, crushing, cracks, scratches, breaks or tears. It's recommendable to perform this check before each use. These faults required the affected hose to be replaced.