

CRYOTEC

COMPOTEC®CRYOTEC hoses are designed for use with cryogenic products at temperatures down to -200°C and pressures up to 25 bar.

COMPOTEC®CRYOTEC hoses has been designed around multy-layers of Pol-
yimide films, polyester films, reinforced with inner & outer wire spirals in Stain-
less Steel. Additional Polyester and PP fabrics, and specific bi-oriented Polypro-
pilene films are provided to guarantee flexibility even at minus 200°C, ensuring
the assemblies better performances than other type of hoses or loading arms,
when accommodating for vessel movements during transfer operation. **COMPO-
TEC®CRYOTEC** hoses includes in the construction **FEP/Polyimide** and **Mylar®**
films, to provide excellent thermal, physical and chemicapl roperties over a wide
temperature range in a lightweight package making thema superior choice for
rigorous insulation applications. **COMPOTEC®CRYOTEC** hoses are manufactur-
ed according to EN 13766:2010, in 2 types: Type 1 for LPG and Typef o2r LNG,
each type is subdivided in two classes, one for onshore use (Class A), and one
for offshore use (Class B).

To transport LPG or LNG gases it is standard economic practice to liquefy them
either by means of pressure or refrigeration. Hoses for this application must be
ductile at low temperatures. **COMPOTEC®CRYOTEC** hoses for liquid gas
transfer form an important part of the extensive range on non-metallic flexible
hoses offered by the COMPOTEC®division of Matec group. The hoses are certi-
fied by DNV as complying the requirements of CE Directive 97/23 "PED" and are
made to comply the requirements of EN13766 Lloyd's Type approved; Para-
graphs 5:4 and 5:7 of the IMO Gas Carrier Code, and 5:3 and 5:7 of the IMO
Chemical Carrier Code. Meets EN, CE, PED, U.S. Coast Guard requirements.
ATEX Certification Directive 94/EC on request.

CRYOTEC 660 LG is suitable for transferring fully refrigerated conveyants such
as **LPG**, Propane and Buthane down to -105°C, as well as liquid Ethane at and
liquid Ethylene. Suitable for fluids included in Chap XIX, Gas carrier Code.

CRYOTEC 661 N hose is suitable for handling **LNG** Liquefied Natural Gas, Li-
quid Methane and liquid Nitrogen at -200°C.

COMPOTEC® CRYOTEC hoses assemblies are tested, in accordance with EN
ISO 1402. The ferrule is embossed, with manufacturer's name, nominal bore,
serial number and test date. Burst pressure indicated, is at ambient temperature
when tested in accordance with EN ISO 1402. Electrical continuity is achieved by
the two wires bonded to the end fittings, this helps dissipate accumulated charge
and to avoid static flash. The electric resistance of hose assemblies is less than
1 ohm/mt, as required by EN ISO 8031:2009 – 4.7.

CRYOTEC Nanogel®– Patented design by Matec® Group
**FLEXIBLE COMPOTEC®HOSE WITH INTEGRAL INSULATION VAPOR BAR-
RIER FOR SUB-AMBIENT AND CRYOGENIC APPLICATIONS.**

Nanogel® is a flexible aerogel blanket insulation with an integral vapor barrier. It
is engineered to deliver maximum thermal protection with minimal weight and
thickness, and zero water vapor permeability. **Nanogel®**'s unique properties,
extremely low thermal conductivity, superior flexibility, compression resistance,
hydrophobicity, and ease of use, make it essential for those seeking the ultimate
in thermal protection for cryogenic applications. Using patented nanotechnology,
Nanogel® insulation combines a silica aerogel with reinforcing fibers to deliver
industry-leading thermal performance in an easy-to-handle and environmentally
safe product. **Nanogel®**'s extremely low thermal conductivity reduces heat gain
and its inherent flexibility makes the product durable and resistant to mechanical
abuse. Additional protection (**ARAMEX** braid and **PU** Redthane cover) on the
outer diameter is available to minimize the abrasion damages and for further
protection and insulation. **CRYOTEC** Hoses with **Nanogel®** patented insulation,
can achieve an outer temperature of 23°C on hoses carrying **LNG** at -175 inside.

ADVANTAGES

- Superior Thermal Performance
- Up to 5 times better thermal performance than competing insulation products
- Reduced Thickness and Profile
- Equal thermal resistance at a fraction of the thickness
- Zero Permeability due to Integral Vapor Barrier
- Provides ice formation on outer diameter
- Physically Robust
- Soft and flexible but with excellent springback, **Nanogel®** recovers its thermal performance even after compression.
- Eliminates Expanction Joints because it remains flexible even at cryogenic tem-
peratures,
- Environmentally Safe
- Landfill disposable, shot-free, with no respirable fiber content
- Flexible hoses are usually uninsulated due to severe stresses of cycling betwe-
en ambient and **LNG** (-175°C) temperatures. This can result in heavy ice forma-
tion during operation, and dangerous ice falls during the subsequent warm up.
CRYOTEC hoses insulated with **Nanogel®** are impervious to cryogenic cycling.

COMPOTEC®



Patent Design Nr. RM2011V00197

Lloyd's
Register

Type
approved

www.lr.org

TYPE LG: Hoses for Liquid Petroleum Gas (LPG) handling - EN 13766:2015

Size		Maximum W.P.		Safety	Bend Radius (ENISO1746)		Weight	Maximum Lenght	
mm	Inch	Bar	P.S.I.	Factor	mm	Inch	Kg. / mt	Mt.	Feet
20	¾"	25	360	5:1	80	3	0,8	40	132
25	1"	25	360	5:1	100	4	1,0	40	132
32	1 ¼"	25	360	5:1	125	5	1,3	40	132
40	1 ½"	25	360	5:1	140	6	1,5	40	132
50	2"	25	360	5:1	180	7	2,5	40	132
65	2 ½"	25	360	5:1	200	8	3,3	40	132
75/80	3"	25	360	5:1	260	10	4,0	40	132
100	4"	25	360	5:1	380	15	6,8	40	132
125	5"	25	360	5:1	434	17	9,20	40	132
150	6"	25	360	5:1	500	20	13,2	40	132
200	8"	25	360	5:1	750	30	18,0	40	132
250	10"	15	200	5:1	900	36	26,0	25	82
300	12"	10	150	5:1	1500	60	34,0	25	82

CRYOTEC 660 LG

Code	CRYOTEC 660 ZZ	CRYOTEC 660 ZX	CRYOTEC 660 XX
Applications	Liquid Petroleum Gas LPG		
Colour	White		
Temperatures	-105 + 100°C		
Inner wire	Galv. Steel	Galv. Steel	Stain. Steel
Outer wire	Galv. Steel	Stain. Steel	Stain. Steel

TYPE N: Hoses for Liquefied Natural Gas (LNG) at extremely low temperatures

Size		Maximum W.P.		Safety	Bend Radius (ENISO1746)		Weight	Maximum Lenght	
mm	Inch	Bar	P.S.I.	Factor	mm	Inch	Kg. / mt	Mt.	Feet
20	¾"	16	230	8:1	80	3	0,8	40	132
25	1"	16	230	8:1	100	4	1,0	40	132
32	1 ¼"	16	230	8:1	125	5	1,3	40	132
40	1 ½"	16	230	8:1	140	6	1,5	40	132
50	2"	16	230	8:1	180	7	2,5	40	132
65	2 ½"	16	230	8:1	200	8	3,3	40	132
75/80	3"	16	230	8:1	260	10	4,0	40	132
100	4"	16	230	8:1	380	15	6,8	40	132
125	5"	16	230	8:1	434	17	9,2	40	132
150	6"	13	185	8:1	500	20	13,2	40	132
200	8"	13	185	8:1	750	30	18,0	40	132
250	10"	13	185	8:1	900	36	26,0	25	82
300	12"	10	150	8:1	1500	60	34,0	25	82

CRYOTEC 661 N

Code	CRYOTEC 661 ZZ	CRYOTEC 661 ZX	CRYOTEC 661 XX
Applications	Liquified Natural Gas LNG at extremely low temperatures		
Colour	White		
Temperatures	-200 + 80°C		
Inner wire	Galv. Steel	Galv. Steel	Stain. Steel
Outer wire	Galv. Steel	Stain. Steel	Stain. Steel

