

Material Data Sheet Rev 0524



Product name: GelBlack



Copper: copper tube manufactured according to ASTM B280 / ASTM B1003 - C12200 DHP - 700 PSI - 99.9% pure

Insulation: closed cells expanded polyethylene + low density polyethylene film

Product Codes of the insulation: polyolefin products

Chemical family: polyolefin thermoplastics

Composition information on ingredients (Insulation)

Polyethylene	CAS 9002-88-4	85% - 100%
Other proprietary additives	N/A	0 - 15%

HAZARDOUS INGREDIENT		EXPOSURE LIMITS Wt %
Isobutane	CAS 0075-28-5	800 ppm TWA (ACGIH)



Insulation

Product made according to ASTM C 1427-21, type I (tubular), grade I (insulation material use for use on typical commercial system non-cross-linked).

Low-density polyethylene foam:

- closed cells foam, CFC and HCFC gas free

Water vapor permeability: according to ASTM E96-00

- $\rho = 4 \cdot 10^{-5}$ [mg/(h*m*Pa)]

Working temperature: according to ASTM C 1427-21 , type I (tubular) , grade I from -94 F to +250 F

Wall thickness available: 3/8", 1/2", 3/4"

Surface burning characteristics: **UL723 CLASSIFIED** R39562 (ASTM E84 25/50)

Flame Spread Index < 25

Smoke Development Index < 50

UL 94-5VA (Top Rated)

UV Resistance: **UL PERFORMANCE VERIFIED** A693219 - 71%

Retention of strength properties after 2000* hours of UV conditioning in Accelerated Weathering Test Machine.

*based on internal test performed at PDM labs, 2000 hours in Accelerated Weathering Test machine are comparable to a direct sunrays exposure for 5.66 years at a subtropical latitude.

Thermal conductivity according ASTM C 335-95

ASME B35 and ANSI B9.1 Compliant

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**PDM PRE INSULATED PIPES
R VALUES CALCULATION TABLE**

"k" at 75 °F, mean temperature = 0.252369 (Btu in.)/(sq.ft. °F h) for ½" ins.

copper tube		Insulation					
tube OD	tube OD	nominal insulation thickness	insulation thickness	OD	ID	k	R value
1/4	0.250	3/8	0.420	1.139	0.300	0.263	3
3/8	0.375	3/8	0.402	1.204	0.400	0.263	3
1/2	0.500	3/8	0.439	1.380	0.503	0.263	3
5/8	0.625	3/8	0.445	1.540	0.650	0.263	3
3/4	0.750	3/8	0.465	1.700	0.770	0.263	3
7/8	0.875	3/8	0.473	1.846	0.900	0.263	3

copper tube		Insulation					
tube OD	tube OD	nominal insulation thickness	insulation thickness	OD	ID	k	R value
1/4	0.250	1/2	0.509	1.318	0.300	0.263	4
3/8	0.375	1/2	0.520	1.440	0.400	0.263	4
1/2	0.500	1/2	0.547	1.596	0.503	0.263	4
5/8	0.625	1/2	0.577	1.804	0.650	0.263	4
3/4	0.750	1/2	0.665	2.100	0.770	0.263	4
7/8	0.875	1/2	0.680	2.260	0.900	0.263	4

copper tube		Insulation					
tube OD	tube OD	nominal insulation thickness	insulation thickness	OD	ID	k	R value
1/4	0.250	3/4	0.693	1.685	0.300	0.263	6
3/8	0.375	3/4	0.832	2.064	0.400	0.263	6
1/2	0.500	3/4	0.837	2.177	0.503	0.263	6
5/8	0.625	3/4	0.853	2.356	0.650	0.263	6
3/4	0.750	3/4	0.818	2.405	0.770	0.263	5
7/8	0.875	3/4	0.771	2.442	0.900	0.263	5

copper tube		Insulation					
tube OD	tube OD	nominal insulation thickness	insulation thickness	OD	ID	k	R value
1/4	0.250	1	1.000	2.300	0.300	0.27	9
3/8	0.375	1	1.000	2.400	0.400	0.27	8
1/2	0.500	1	1.024	2.550	0.503	0.27	8
5/8	0.625	1	1.125	2.900	0.650	0.27	8
3/4	0.750	1	1.115	3.000	0.770	0.27	8
7/8	0.875	1	1.150	3.200	0.900	0.27	8



Declaration of NO RED List Items:

PDM US LLC declares the polyethylene foam used in all its products to be cleared of all the RED LIST ITEMS, specifically:

- Asbestos • Cadmium • Chlorinated Polyethylene and Chlorosulfonated Polyethylene • Chlorofluorocarbons (CFCs) • Chloroprene (Neoprene)P • Formaldehyde (added) • Halogenated Flame Retardants • Hydro chlorofluorocarbons (HCFCs) • Lead (added) • Mercury • Petrochemical Fertilizers and Pesticides • Phthalates • Polyvinyl Chloride (PVC) • Wood treatments containing Creosote, Arsenic or Pentachlorophenol

California Proposition 65 Declaration

All PDM US LLC products do NOT contain chemicals listed on California's Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).

All PDM products are 100% recyclable.

All PDM products are in full compliance with the BABA Act



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