

KME- installation tubes for 120 bar highpressure refrigerants (page 1 of 3)

KME trade-name :	TECTUBE®_cips HP 120 bar
Material :	KME CL12 = CuFe2P acc. to DIN EN 12449 (Cu-Fe-alloy with 2 % Fe , P = 0,015 – 0,040 %)
Supply shape:	straight lengths
Tube sizes :	see Table 1
Tolerances:	<u>acc. to EN 12735-1</u>
Technical specification :	<u>acc. to EN 12735-1</u>
Tube- signature identification:	tube embossing acc. to <u>EN 12735-1</u>
Tube inside cleanliness :	max. 0,38 mg/dm ² <u>acc. to EN 12735-1</u>
Max. safeworking pressure :	max. 120 bar / see Table 1
Mill inspection certificates :	acc. to EN 10204 / 2.2
Packaging :	<ul style="list-style-type: none">▪ tube-ends tight closed by caps or plugs▪ Tubes in cartons, No. of tubes / carton see in Tab.1
Special remarks about installation :	Installation should be done by qualified installers having the necessary practical and theoretical knowledge about installation of refrigeration tube systems. <u>Important :</u> Before starting and also during hardbrazing operation the tube inside volume must be purged by oxygen-free gas to avoid re-oxidation in hot fitting-area.
Fittings / joints :	Hardbrazed-fittings are up to now the state-of-the art. Pls. use fittings mate of material CuFe2P and confirmed also for 120 bar. Further questions pls. address to fitting producers.
Braze material / filler material :	Questions pls. address to relevant producers.
Bending operations :	These tubes are prepared for bending. Minimum bending radii are not published up to now. Correlating bending pre-tests are recommended.
Relevant EN – specifications :	can be bought over Beuth-Verlag, Berlin
Support for technical questions before ordering:	Tel. : 0049 - 2373 / 161- 603 e-mail : ulrich.naumann@kme.com

This information is checked and refers to the knowledge at day of creation (02th Dec. 2013).
These information has not the intention to be complete in all details – this are only some answers about the main questions in this application and product.
Updates due to product improvements and / or processing improvements remains in our option.

KME installation-tubes for 120 bar highpressure refrigerants (page 2 of 3)**Sizes, working pressure, packaging****Table 1 :**

Standard- Sizes **TECTUBE®_cips_HP 120 bar** in **straight lengths**
(to supply via refrigeration-wholesalers)

	Tube size (in mm)	KME- Articel No.	kg / m	Small package VE	bigpack VE	Sizes at smallpack in mm B x H x L	Sizes at bigpack in mm B x H x L
3/8"	9,52 x 0,65	7129030	0,1613	120 m	1080 m	80 x 32 x 5020	240 x 196 x 5020
1/2"	12,70 x 0,85	7129031	0,282	50 m	1000 m	60 x 24 x 5020	300 x 204 x 5020
5/8"	15,88 x 1,05	7129032	0,435	50 m	600 m	80 x 32 x 5020	240 x 196 x 5020
3/4"	19,05 x 1,30	7129033	0,645	50 m	600 m	110 x 44 x 5020	440 x 232 x 5020
7/8"	22,22 x 1,50	7129034	0,869	25 m	450 m	110 x 44 x 5020	440 x 232 x 5020
1 1/8"	28,58 x 1,90	7129027	1,417	25 m	225 m	140 x 56 x 5020	420 x 268 x 5020
1 3/8"	34,93 x 2,30	7129028	2,098	15 m	150 m	110 x 68 x 5020	440 x 304 x 5020
1 5/8"	41,28 x 2,70	7129029	2,912	10 m	100 m	125 x 80 x 5020	500 x 340 x 5020

Max. safeworking pressure for all sizes : max. 120 bar **

Min. tensile strength acc. to EN 12449 : R300 bzw. Rm = min. 300 MPa

*All tubes acc. to EN 12735-1 (material acc. to EN 12449)

** referred to temper R300 (soft) und and nominal size

Calculated acc. to DKI – Infoschrift „coppertube installation – state of the art“

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Table 2 :

Technical Gases, confirmed for KME - coppertubes TECTUBE®_cips HP 120 bar :

Gas	chemical abbreviation	confirmed for :
Inert gases		
■ Nitrogen	N ₂	TECTUBE®_cips HP 120 bar
■ Helium/Argon	He / Ar	TECTUBE®_cips HP 120 bar
■ all other inert gases		TECTUBE®_cips HP 120 bar
■ carbon-dioxide (water-free carbonic acid)	CO ₂ ** (dry)	TECTUBE®_cips HP 120 bar
inflammable gases and refrigerants		
■ Hydrogen	H ₂	TECTUBE®_cips HP 120 bar
■ pure hydrocarbons		TECTUBE®_cips HP 120 bar
■ liquified hydrocarbons	(Propan/Butan)	TECTUBE®_cips HP 120 bar
Safety-refrigerants		
■ HFKW		TECTUBE®_cips HP 120 bar
■ CKW		TECTUBE®_cips HP 120 bar
■ FKW		TECTUBE®_cips HP 120 bar
Natural refrigerants		
■ carbon-dioxide	CO ₂ ** (dry)	TECTUBE®_cips HP 120 bar
■ liquified hydrocarbons	(Propan/Butan)	TECTUBE®_cips HP 120 bar
Welding gases :		
■ Argon / Helium	Ar/He	TECTUBE®_cips HP 120 bar
■ Nitrogen	N ₂	TECTUBE®_cips HP 120 bar
■ Oxygen	O ₂	TECTUBE®_cips HP 120 bar
■ air / compressed air	(trocken)	TECTUBE®_cips HP 120 bar
■ Vacuum		
■ carbon-dioxide	CO ₂ ** (dry)	TECTUBE®_cips HP 120 bar

Table 3:

Gases, not confirmed for coppertubes and CuFe2P = KME CL12 :

■ Azetylen	C ₂ H ₂	strictly forbidden
■ Ammoniak	NH ₃	
■ Chlogas	CL ₂	
■ Chlorwasserstoff	HCL	
■ Phosgen	COCL ₂	
■ Schwefeldioxid	SO ₂	
■ Schwefelwasserstoff	H ₂ S	