

Industrial Tubes

TECTUBE®_cips hp120

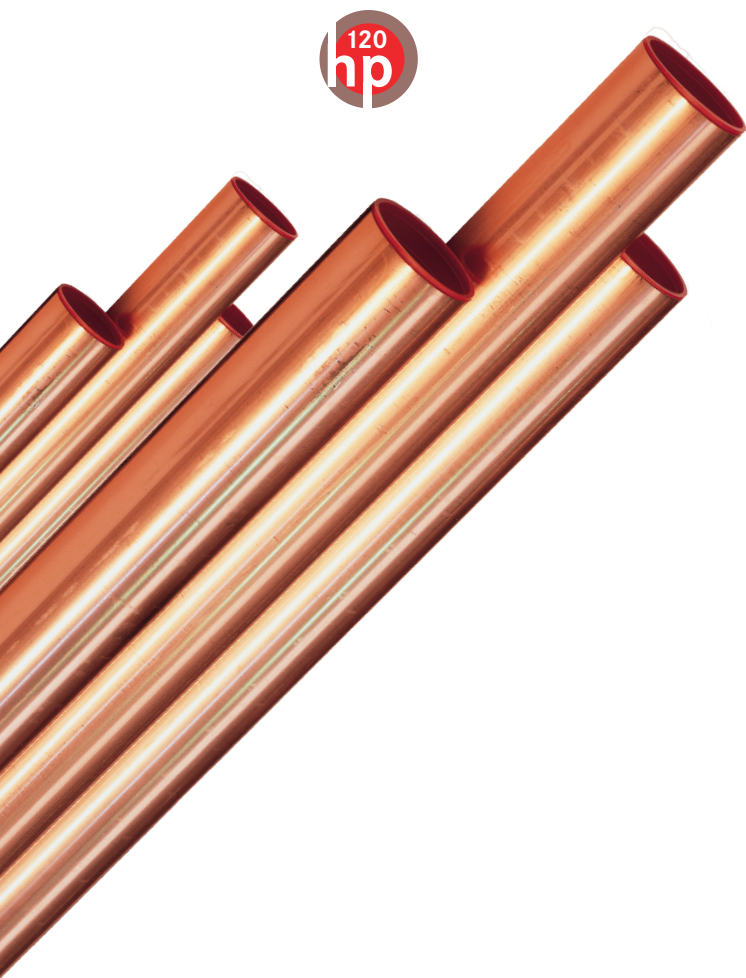
High-pressure ecological cooling
with cost-effective quality tubing



TECTUBE®_cips hp120

Copper tubes for transport of eco-friendly refrigerants that need system pressures of up to 120 bar in the cooling circuit for best results.

The strength of the material CuFe2P (KME CL 12) ensures total pressure stability for applications of this kind. The fact that there is no need to increase the thickness of the tube wall as is necessary with conventional tubing reduces costs and increases the overall economics of the product.



Cooling – an environmental perspective

A new era has begun in many of the sectors in which cooling technologies are used. Today, modern environmental criteria are being applied to assess supermarket cold chains, beverage refrigerators, pharmaceutical temperature regulators and many other cooling systems.

The two most important criteria refrigerants need to meet before they can be categorized as unproblematic in terms of their environmental impact are their GWP (Global Warming Potential) and ODP (Ozone Depleting Potential). Many refrigerants that were widely used in the past due to their excellent physical properties exceed threshold values for these criteria and have now been completely abolished.

Carbon dioxide (CO₂), one of the few refrigerants categorized under both criteria as environmentally friendly, is considered an ideal cooling solution. CO₂ (R744) is operationally safe, has a neutral impact on the environment, is energy efficient, non-combustible, ecologically harmless and, as a natural resource, is practically inexhaustible.

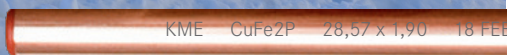
Cooling tmp.	9°C
Chilling tmp.	-19°C
Humidity rate	96%
Coolant type	R744
Pressure rate	120 bar



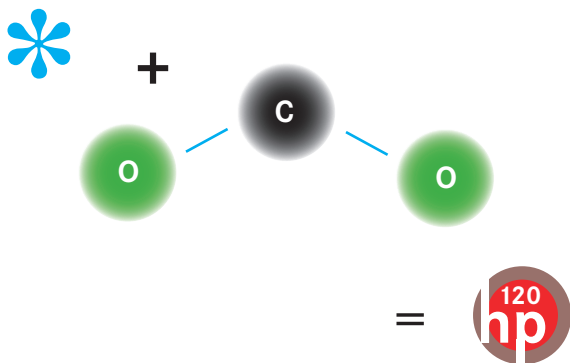
CO₂ – Cooling under high pressure

Modern, eco-friendly refrigerants place completely new demands on the manufacture and design of tube connection lines used in air-conditioning and refrigeration systems. In particular, CO₂ (R744) requires a much higher working pressure than all previously used refrigerants. A maximum pressure of 45 bar was absolutely sufficient for the refrigerants used up to now, but CO₂ needs up to 120 bar in most applications for optimal refrigeration processes.

The copper-iron alloy KME CL 12 used in **TECTUBE®_cips hp 120** is well able to withstand the stresses and strains caused by pressure ratios of this magnitude on the tubing system.



Optimal refrigerant, best tube solution



Traditional tube materials used in refrigeration systems such as Cu-DHP need greater wall thickness to withstand higher pressures. This means that more material is needed and tube manufacturing is more expensive.

However, the new high-strength copper alloy KME CL12 offers clear cost advantages when prices per meter of installed tubes are compared. The reasons are obvious; by using high-strength copper materials the necessary pressure stability is attained with a relatively low wall thickness and consequently with less copper weight per meter of tube.

That means attractive savings for users of **TECTUBE®_cips hp120** in comparison to tubes made of Cu-DHP.



Sizes and Packaging

Tube Size		KME Article No.	Weight per meter	Small Bundle		Big Bundle	
OD x Wall (mm)	inch		kg/m	pieces of tubes	Meter	pieces of small bundles	Meter
9.52 x 0.65	3/8"	7129030	0.16	22	110	20	2200
12.70 x 0.85	1/2"	7129031	0.28	12	60	20	1200
15.87 x 1.05	5/8"	7129032	0.44	9	45	20	900
19.05 x 1.30	3/4"	7129033	0.65	9	45	12	540
22.23 x 1.50	7/8"	7129034	0.87	5	25	16	400
28.57 x 1.90	11/8"	7131571	1.42	5	25	9	225
34.92 x 2.30	13/8"	7129028	2.10	3	15	12	180
41.27 x 2.70	15/8"	7129029	2.91	2	10	12	120

Material	CuFe2P (KME CL 12)
Temper	R 300
Characteristics	Tube properties = EN 12735-1; Material properties = EN 12449
Tubes length	Each size 5m straight length
Packing	All bundles are wrapped in PE-foil
Tube ends	Closed with caps at both ends
Traceability	All tubes signed with all information to guarantee traceability

Availability and Packing Units

KME permanently maintains adequate levels of stock of all the most-used tube sizes of **TECTUBE®_cips hp120**. This stock is used to support established wholesalers of ACR components, who are well-known partners to ACR installers and ACR construction companies.

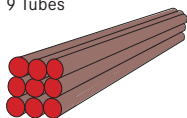
TECTUBE®_cips hp120 tubes are available in big bundles for easy whole-sale handling, whereby every big bundle contains individually packed ready-for-sale small bundles of 2 to 22 tubes, depending on the tube diameter (see table).

To ensure full traceability in accordance with EC Pressure Equipment Directive 97/23/EC, the day of manufacture, tube diameter and other details are engraved on each tube.

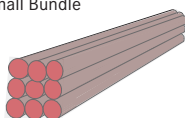
Example for Packing Units

Tube size 19.05 x 1.30

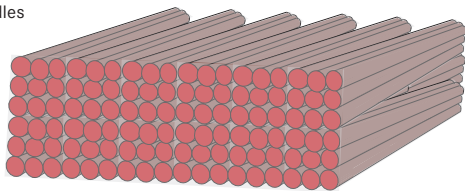
9 Tubes



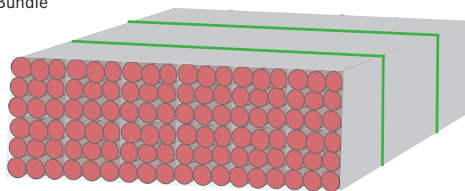
= 1 Small Bundle



12 Small Bundles



= 1 Big Bundle



Packing units for other dimensions see table *Sizes and Packaging*.

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