Selectarc BRAZING

TECHNICAL DATA SHEET N°145

PAG 60

CuP-Ag 6% Manual brazing

Certified A.T.G.

Specifications:

Alloy	Working Temperature (˚C)	NF EN ISO 17672	NF A81 362	DIN 8153	EN ISO 3677	ATG
Cu-P-Ag-Ni	690	CuP 283a	CuP291	-	BCu87PAg(Ni)645-725	-

Characteristics:

PAG 60 is a brazing alloy with 6.0% Silver. An addition of 0.1 % Nickel is done to improve the ductility of the brazed joint. This addition also refines the alloy, increasing the brazed joints mechanical characteristics and improving electrical conductivity. This special alloy certified by **A.T.G. (French Ministry of Industry)** in conjunction with **AGFLUX** on checking number **A.T.G. 1530** is recommended for high strength capillary brazing. This brazing alloy is not recommended to be used for the media having sulphur. Also it is not allowed to use for joining steels (Fe) or materials containing Iron (Fe), Nickel (Ni), Cobalt (Co) as it will form brittle phase in the joint. The corrosion resistance of this alloy is comparable to that of copper excepts, when the joint is exposed to sulphur containing gas or at elevated temperatures. Under these conditions, it is expected that, this alloy will undergo progressive deterioration as other copper phosphorus alloy with Silver or without Silver.

Applications:

PAG 60 It is recommended for hard brazing of copper and optionally copper brass pipes of combustible installations. As well as all low temperature applications. In Air conditioning and refrigeration application, **PAG 60** can be used for the service temperature between +150˚C (without loss in strength) to -50˚C. This alloy can be used with flame.

Typical Chemical Compositions (%):

Cu	P	Ag	Ni	Si	Bi	Cd	Pb	Zn	Al	Zn + Cd	Max. impurities
Reminder	7.30	6.00	0.10	0.1	<0.03	<0.01	<0.020	<0.050	<0.010	<0.05	<0.10
Si as per ATG B.524.3 0.05-0.15%											

Typical Physical Properties

Colour	Solidus (˚C)	Liquidus (˚C)	Density g/cm³	Elongation %	Tensile strength (MPa)	Electrical Conductivity (%IACS)	Electrical Resistivity (Micro-ohm-cm)
Copper	645	725	8.2	4%	450	-	-

Properties of Brazed Joint:

The properties of a brazed joint dependent upon numerous factors including base metal properties, joint design, metallurgical interactions between the base metal and the filler metal.

Standard Size, Types and Heat Source Recommendations :

Size (mm)	Type				OXY/ACETYLÈNE	INDUCTION	AÉRO-PROPANE	FOUR/OVEN
	Bare	Coated	Coil	Preforms				
1.50, 2.00, 2.50, 3.00	√	√	–	√	√	√	√	√

Preform sizes and other type other than above standard dimensions are solicited case to case basis

PHOSBRAZ AG4

CuP-Ag 0.4% Manual brazing

TECHNICAL DATA SHEET 105

Specifications:

Alloy	Working Temperature (˚C)	NF EN ISO 17672	AWS A-5.8	DIN EN 1044	DIN 8513	AMS
Cu-P-Ag	730	-	-	-	-	-

Characteristics:

PHOSBRAZ AG4 is CuP alloy with Silver, which lowers the liquidus point, refines the alloy, improving electrical conductivity and increasing ductility. Also increase its resistance to vibration and cyclic pressure Polyvalent alloy suitable for copper brazing, without need of using a flux, Good fluidity when brazing sleeves/tubes and copper connections, machine junctions, and so forth, which produce strong leak proof joints. This alloy has good gap filling properties and is well suited to bridge wide gaps. Its low melting temperature gives very good resistance.

This brazing alloy is not recommended to be used for the media having sulphur. Also it is not allowed to use for joining steels (Fe) or materials containing Iron (Fe), Nickel (Ni), Cobalt (Co) as it will form brittle phase in the joint. The corrosion resistance of this alloy is comparable to that of copper excepts, when the joint is exposed to sulphur containing gas or at elevated temperatures.. Under these conditions, it is expected that, this alloy will undergo progressive deterioration as other copper phosphorus alloy with Silver or without Silver.

Applications:

PHOSBRAZ AG4 is mainly used in Plumbing, Electrical components, Refrigeration and Heating/Ventilation. An economical alloy used in joining copper to copper. It can also use to join coper to low zinc brasses with Phosbraz flux. In Air conditioning and refrigeration application, **PHOSBRAZ AG4 can** be used for the service temperature between +150 ˚C (without loss of Strength) upto -20˚C. This alloy can be used with flame.

Typical Chemical Compositions (%):

Cu	P	Ag	Al	Bi	Cd	Pb	Zn	Zn + Cd	Max. impurities
Reminder	6.50	0.40	<0.01	<0.030	<0.01	<0.025	<0.050	<0.050	<0.25

Typical Physical Properties:

Colour	Solidus (˚C)	Liquidus (˚C)	Density g/cm³	Elongation %	Tensile strength (MPa)	Electrical Conductivity (%IACS)	Electrical Resistivity (Micro-ohm-cm)
Copper	650	825	8.1	6%	550	8.00	21.50

Properties of Brazed Joint:

The properties of a brazed joint dependent upon numerous factors including base metal properties, joint design, metallurgical interactions between the base metal and the filler metal.

Standard Size, Types and Heat Source Recommendations:

Size (mm)	Type				OXY/ACETYLÈNE	INDUCTION	AÉRO-PROPANE	FOUR/OVEN
	Bare	Coated	Coil	Preforms				
1.50,2.00,2.50,3.00	√	√	–	√	√	√	X	X

Preform sizes and other type other than above standard dimensions are solicited case to case basis

PHOSBRAZ AG10

CuP-Ag 1.0 % Manual brazing

TECHNICAL DATA SHEET 110

Specifications:

Alloy	Working Temperature (˚C)	NF EN ISO 17672	AWS A-5.8	DIN 8513	EN ISO 3677	AMS
Cu-P-Ag	740	-	-	-	-	-

Characteristics:

PHOSBRAZ AG10 is CuP alloy with Silver, which lowers the liquidus point, refines the alloy, improving electrical conductivity and increasing ductility. Also increase its resistance to vibration and cyclic pressure Polyvalent alloy suitable for copper brazing, without need of using a flux, Good fluidity when brazing sleeves/tubes and copper connections, machine junctions, and so forth, which produce strong leak proof joints. This alloy has good gap filling properties and is well suited to bridge wide gaps. Its low melting temperature gives very good resistance.

This brazing alloy is not recommended to be used for the media having sulphur. Also it is not allowed to use for joining steels (Fe) or materials containing Iron(Fe), Nickel (Ni), Cobalt (Co) as it will form brittle phase in the joint. The corrosion resistance of this alloy is comparable to that of copper excepts, when the joint is exposed to sulphur containing gas or at elevated temperatures.. Under these conditions, it is expected that, this alloy will undergo progressive deterioration as other copper phosphorus alloy with Silver or without Silver.

Applications:

PHOSBRAZ AG10 is mainly used in Plumbing, Electrical components, Refrigeration and Heating/Ventilation. An economical alloy used in joining copper to copper. It can also use to join coper to low zinc brasses with Phosbraz flux. In Air conditioning and refrigeration application, **PHOSBRAZ AG10** can be used for the service temperature between +150 ˚C upto -20˚C. This alloy can be used with flame.

Typical Chemical Compositions (%):

Cu	P	Ag	Al	Bi	Cd	Pb	Zn	Zn + Cd	Max. impurities
Reminder	6.70	1.00	<0.01	<0.030	<0.01	<0.020	<0.050	<0.05	<0.25

Typical Physical Properties:

Colour	Solidus (˚C)	Liquidus (˚C)	Density g/cm³	Elongation %	Tensile strength (MPa)	Electrical Conductivity (%IACS)	Electrical Resistivity (Micro-ohm-cm)
Copper	650	820	8.1	6%	550	8.40	20.50

Properties of Brazed Joint:

The properties of a brazed joint dependent upon numerous factors including base metal properties, joint design, metallurgical interactions between the base metal and the filler metal.

Standard Size, Types and Heat Source Recommendations :

Size (mm)	Type				OXY/ACETYLÈNE	INDUCTION	AÉRO-PROPANE	FOUR/OVEN
	Bare	Coated	Coil	Preforms				
1.50, 2.00, 2.50, 3.00	√	√	–	–	√	√	X	X

Preform sizes and other type other than above standard dimensions are solicited case to case basis

Selectarc BRAZING

PHOSBRAZ AG20

CuP-Ag 2% Manual brazing

TECHNICAL DATA SHEET 115

Specifications:

Alloy	Working Temperature (˚C)	NF EN ISO 17672	AWS A-5.8	DIN 8513	EN ISO 3677	AMS
Cu-P-Ag	740	CuP 279	-	L-Ag2 P	B Cu 92 P Ag 645-825	-

Characteristics:

PHOSBRAZ AG20 is CuP alloy with Silver, which lowers the liquidus point, refines the alloy, improving electrical conductivity and increasing ductility. Also increase its resistance to vibration and cyclic pressure Polyvalent alloy suitable for copper brazing, without need of using a flux, Good fluidity when brazing sleeves/tubes and copper connections, machine junctions, and so forth, which produce strong leak proof joints. This alloy has good gap filling properties and is well suited to bridge wide gaps. Its low melting temperature gives very good resistance.

This brazing alloy is not recommended to be used for the media having sulphur. Also it is not allowed to use for joining steels (Fe) or materials containing Iron (Fe), Nickel (Ni), Cobalt (Co) as it will form brittle phase in the joint. The corrosion resistance of this alloy is comparable to that of copper excepts, when the joint is exposed to sulphur containing gas or at elevated temperatures.. Under these conditions, it is expected that, this alloy will undergo progressive deterioration as other copper phosphorus alloy with Silver or without Silver.

Applications:

PHOSBRAZ AG20 It is mainly used in Plumbing, Electrical components, Refrigeration and Heating/Ventilation. An economical alloy used in joining copper to copper. It can also use to join coper to low zinc brasses with Phosbraz flux. In Air conditioning and refrigeration application, **PHOSBRAZ AG20 can** be used for the service temperature between +150 ˚C (without loss in strength) to -20˚C. This alloy can be used with flame.

Typical Chemical Compositions (%):

Cu	P	Ag	Al	Bi	Cd	Pb	Zn	Zn + Cd	Max. impurities
Reminder	6.60	2.00	<0.010	<0.030	<0.01	<0.020	<0.050	<0.05	<0.25

Typical Physical Properties:

Colour	Solidus (˚C)	Liquidus (˚C)	Density g/cm³	Elongation %	Tensile strength (MPa)	Electrical Conductivity (%IACS)	Electrical Resistivity (Micro-ohm-cm)
Copper	645	825	8.1	6%	550	9.1	18.95

Properties of Brazed Joint:

The properties of a brazed joint dependent upon numerous factors including base metal properties, joint design, metallurgical interactions between the base metal and the filler metal.

Standard Size, Types and Heat Source Recommendations ::

Size (mm)	Type				OXY/ACETYLÈNE	INDUCTION	AÉRO-PROPANE	FOUR/OVEN
	Bare	Coated	Coil	Preforms				
1.50 ,2.00,2.50,3.00	√	√	√	√	√	√	**X**	**X**

Preform sizes and other type other than above standard dimensions are solicited case to case basis

PHOSBRAZ AG20+

CuP-Ag 2% Manual brazing

TECHNICAL DATA SHEET 120

Specifications:

Alloy	Working Temperature (˚C)	NF EN ISO 17672	AWS A-5.8	DIN 8513	EN ISO 3677	AMS
Cu-P-Ag	740	CuP 280	B CuP-6	-	B Cu 91 P Ag 643-780	-

Characteristics:

PHOSBRAZ AG20+ is CuP alloy with Silver, which lowers the liquidus point, refines the alloy, improving electrical conductivity and increasing ductility. Also increase its resistance to vibration and cyclic pressure Polyvalent alloy suitable for copper brazing, without need of using a flux, Good fluidity when brazing sleeves/tubes and copper connections, machine junctions, and so forth, which produce strong leak proof joints. This alloy has good gap filling properties and is well suited to bridge wide gaps. Its low melting temperature gives very good resistance.

This brazing alloy is not recommended to be used for the media having sulphur. Also it is not allowed to use for joining steels (Fe) or materials containing Iron (Fe), Nickel (Ni), Cobalt (Co) as it will form brittle phase in the joint. The corrosion resistance of this alloy is comparable to that of copper excepts, when the joint is exposed to sulphur containing gas or at elevated temperatures. Under these conditions, it is expected that, this alloy will undergo progressive deterioration as other copper phosphorus alloy with Silver or without Silver.

Applications:

PHOSBRAZ AG20+ It is mainly used in Plumbing, Electrical components, Refrigeration and Heating/Ventilation. An economical alloy used in joining copper to copper. It can also use to join coper to low zinc brasses with Phosbraz flux. In Air conditioning and refrigeration application, **PHOSBRAZ AG20+** can be used for the service temperature between +150˚C (without loss in strength) to -20˚C. This alloy can be used with flame.

Typical Chemical Compositions (%):

Cu	P	Ag	Al	Bi	Cd	Pb	Zn	Zn + Cd	Max. impurities
Reminder	7.00	2.00	<0.010	<0.030	<0.01	<0.020	<0.050	<0.05	<0.15

Typical Physical Properties:

Colour	Solidus (˚C)	Liquidus (˚C)	Density g/cm³	Elongation %	Tensile strength (MPa)	Electrical Conductivity (%IACS)	Electrical Resistivity (Micro-ohom-cm)
Copper	643	788	8.1	6%	550	8.9	19.37

Properties of Brazed Joint:

The properties of a brazed joint dependent upon numerous factors including base metal properties, joint design, metallurgical interactions between the base metal and the filler metal.

Standard Size, Types and Heat Source Recommendations :

Size (mm)	Types				OXY/ACETYLÈNE	INDUCTION	AÉRO-PROPANE	FOUR/OVEN
	Bare	Coated	Coil	Preforms				
1.50,2.00,2.50,3.00	√	√	–	√	√	√	X	X

Preform sizes and other type other than above standard dimensions are solicited case to case basis

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Rev 09/2016

PHOSBRAZ AG50

Cu-P-Ag 5% Manual brazing

TECHNICAL DATA SHEET 125

Specifications:

Alloy	Working Temperature (˚C)	NF EN ISO 17672	AWS A-5.8	DIN 8513	EN ISO 3677	AMS
Cu-P-Ag	710	CuP 281	BCuP3	L-Ag5P	B Cu 89 P Ag 645-815	-

Characteristics:

PHOSBRAZ AG50 is CuP alloy with Silver and lowers the liquids point, the greater the ductility of the brazed joint. This addition also refines the alloy, increasing the brazed joints mechanical characteristics and improving electrical conductivity. This is special alloy for high strength capillary brazing.

This brazing alloy is not recommended to be used for the media having sulphur. Also it is not allowed to use for joining steels (Fe) or materials containing Iron (Fe), Nickel (Ni), Cobalt (Co) as it will form brittle phase in the joint. The corrosion resistance of this alloy is comparable to that of copper excepts, when the joint is exposed to sulphur containing gas or at elevated temperatures.. Under these conditions, it is expected that, this alloy will undergo progressive deterioration as other copper phosphorus alloy with Silver or without Silver.

Applications:

PHOSBRAZ AG50 is recommended for hard brazing of copper and optionally copper brass pipes of combustible installations. As well as all low temperature applications. In Air conditioning and refrigeration application, **PHOSBRAZ AG50** can be used for the service temperature between +150˚C (without loss in strength) to -50˚C. This alloy can be used with flame.

Typical Chemical Compositions (%):

Cu	P	Ag	Bi	Cd	Pb	Zn	Al	Zn + Cd	Max. impurities
Reminder	6.00	5.00	<0.030	<0.01	<0.025	<0.050	<0.01	<0.05	<0.25

Typical Physical Properties:

Colour	Solidus (˚C)	Liquidus (˚C)	Density g/cm³	Elongation %	Tensile strength (MPa)	Electrical Conductivity (%IACS)	Electrical Resistivity (Micro-ohm-cm)
Copper	645	815	8.2	8%	650	9.6	18.1

Properties of Brazed Joint:

The properties of a brazed joint dependent upon numerous factors including base metal properties, joint design, metallurgical interactions between the base metal and the filler metal.

Standard size and types:

Size (mm)	Type				OXY/ACETYLÈNE	INDUCTION	AÉRO-PROPANE	FOUR/OVEN
	Bare	Coated	Coil	Preforms				
1.50 , 2.00, 2.50, 3.00	√	√	–	√	√	√	X	X

Preform sizes and other type other than above standard dimensions are solicited case to case basis

PHOSBRAZ AG50+

Cu-P-Ag 5% Manual brazing

TECHNICAL DATA SHEET 130

Specifications:

Alloy	Working Temperature (˚C)	EN ISO 17672	AWS A-5.8	DIN 8513	EN ISO 3677	AMS
Cu-P-Ag	710	CuP 282	BCuP-7	-	BCu88P Ag 643/771	-

Characteristics:

PHOSBRAZ AG50+, the higher the silver content, the greater the ductility of the brazed joint. This addition also refines the alloy, increasing the brazed joints mechanical characteristics and improving electrical conductivity. This is special alloy for high strength capillary brazing.

PHOSBRAZ AG50+This brazing alloy is not recommended to be used for the media having sulphur. Also it is not allowed to use for joining steels (Fe) or materials containing Iron (Fe), Nickel (Ni), Cobalt (Co) as it will form brittle phase in the joint. The corrosion resistance of this alloy is comparable to that of copper accepts, when the joint is exposed to sulphuric containing gas or at elevated temperatures. Under these conditions, it is expected that, this alloy will undergo progressive deterioration as other copper phosphorus alloy with Silver or without Silver.

Applications:

PHOSBRAZ AG50+ It is recommended for hard brazing of copper and optionally copper brass pipes of combustible installations. As well as all low temperature applications. In Air conditioning and refrigeration application, **PHOSBRAZ AG50+** can be used for the service temperature between +150˚C (without loss in strength) to -50˚C.

Typical Chemical Compositions (s%):

Cu	P	Ag	Bi	Cd	Pb	Zn	Al	Zn + Cd	Max. impurities
Reminder	6.60	5.00	<0.03	<0.01	<0.025	<0.050	<0.01	<0.050	<0.25

Typical Physical Properties:

Colour	Solidus (˚C)	Liquidus (˚C)	Density g/cm³	% Elongation	Tensile strength (MPa)	Electrical Conductivity (%IACS)	Electrical Resistivity (Micro-ohm-cm)
Copper	643	771	8.2	7%	600	9.6	18.1

Properties of Brazed Joint:

The properties of a brazed joint dependent upon numerous factors including base metal properties, joint design, metallurgical interactions between the base metal and the filler metal.

Standard size and types :

Size (mm)	Type				OXY/ACETYLÈNE	INDUCTION	AÉRO-PROPANE	FOUR/OVEN
	Bare	Coated	Coil	Preforms				
1.50,2.00,2.50,3.00	√	√	√	√	√	√	X	X

Preform sizes and other type other than above standard dimensions are solicited case to case basis

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Rev 09/2016

PHOSBRAZ AG60

CuP-Ag 6% Manual brazing

TECHNICAL DATA SHEET 138

Specifications:

Alloy	Working Temperature (˚C)	NF EN ISO 17672	AWS A-5.8	EN 1044	EN ISO 3677	AMS
Cu-P-Ag-Ni	690	CuP 283a	-	CP 103	-	-

Characteristics:

PHOSBRAZ AG60, with higher the silver content, the greater the ductility of the brazed joint. Besides addition Silver, Nickel is also added to further refine the alloy, improve the brazed joints mechanical characteristics and improving electrical conductivity. This is special alloy for high strength capillary brazing.

PHOSBRAZ AG60 brazing alloy is not recommended to be used for the media having sulphur. Also it is not allowed to use for joining steels (Fe) or materials containing Iron (Fe), Nickel (Ni), Cobalt (Co) as it will form brittle phase in the joint. The corrosion resistance of this alloy is comparable to that of copper excepts, when the joint is exposed to sulphur containing gas or at elevated temperatures. Under these conditions, it is expected that, this alloy will undergo progressive deterioration as other copper phosphorus alloy with Silver or without Silver.

Applications:

PHOSBRAZ AG60 is recommended for hard brazing of copper and optionally copper brass pipes of combustible installations. As well as all low temperature applications. In Air conditioning and refrigeration application, **PHOSBRAZ AG60** can be used for the service temperature between +150˚C (without loss in strength) to -50˚C. This alloy can be used with flame.

Typical Chemical Compositions (%):

Cu	P	Ag	Ni	Bi	Cd	Pb	Zn	Al	Zn + Cd	impurities
Reminder	7.30	6.00	0.10	<0.030	<0.01	<0.020	<0.050	<0.01	<0.05	< 0.25

Typical Physical Properties:

Colour	Solidus (˚C)	Liquidus (˚C)	Density g/cm³	Elongation %	Tensile strength (MPa)	Electrical Conductivity (%IACS)	Electrical Resistivity (Micro-ohm-cm)
Copper	650	720	8.2	4%	450	-	-

Properties of Brazed Joint:

The properties of a brazed joint dependent upon numerous factors including base metal properties, joint design, metallurgical interactions between the base metal and the filler metal.

Standard Size, Types and Heat Source Recommendations:

Size (mm)	Type				OXY/ACETYLÈNE	INDUCTION	AÉRO-PROPANE	FOUR/OVEN
	Bare	Coated	Coil	Preforms				
1.50 ,2.00,2.50,3.00	√	√	–	√	√	√	√	X

Preform sizes and other type other than above standard dimensions are solicited case to case basis

PHOSBRAZ AG61

CuP-Ag 6% Manual brazing

TECHNICAL DATA SHEET 139

Specifications:

Alloy	Working Temperature (˚C)	NF EN ISO 17672	AWS A-5.8	EN ISO 3677	AMS
Cu-P-Ag	710	CuP 283	BCuP-4	BCu87PAg 643/813	-

Characteristics:

PHOSBRAZ AG61 The higher the silver content, the greater the ductility of the brazed joint. This addition also refines the alloy, increasing the brazed joints mechanical characteristics and improving electrical conductivity. This is special alloy for high strength capillary brazing.

PHOSBRAZ AG61 This brazing alloy is not recommended to be used for the media having sulphur. Also it is not allowed to use for joining steels (Fe) or materials containing Iron (Fe), Nickel (Ni), Cobalt (Co) as it will form brittle phase in the joint. The corrosion resistance of this alloy is comparable to that of copper excepts, when the joint is exposed to sulphur containing gas or at elevated temperatures. Under these conditions, it is expected that, this alloy will undergo progressive deterioration as other copper phosphorus alloy with Silver or without Silver.

Applications:

PHOSBRAZ AG61 is recommended for hard brazing of copper and optionally copper brass pipes of combustible installations. As well as all low temperature applications. In Air conditioning and refrigeration application, **PHOSBRAZ AG61** can be used for the service temperature between +150˚C (without loss in strength) to -50˚C.

Typical Chemical Compositions (%):

Cu	P	Ag	Bi	Cd	Pb	Zn	Al	Zn + Cd	Max. impurities
Reminder	7.30	6.00	<0.03	<0.01	<0.025	<0.05	<0.01	<0.05	<0.25

Typical Physical Properties:

Colour	Solidus (˚C)	Liquidus (˚C)	Density g/cm³	Elongation %	Tensile strength (MPa)	Electrical Conductivity (%IACS)	Electrical Resistivity (Micro-ohm-cm)
Copper	643	813	8.2	4%	450	-	-

Properties of Brazed Joint:

The properties of a brazed joint dependent upon numerous factors including base metal properties, joint design, metallurgical interactions between the base metal and the filler metal.

Standard Size, Types and Heat Source Recommendations :

Size (mm)	Type				OXY/ACETYLÈNE	INDUCTION	AÉRO-PROPANE	FOUR/OVEN
	Bare	Coated	Coil	Preforms				
1.50 ,2.00,2.50,3.00	√	√	–	√	√	√	√	**X**

Preform sizes and other type other than above standard dimensions are solicited case to case basis

PHOSBRAZ AG 100

Cu-P-Ag 10% Manual brazing

TECHNICAL DATA SHEET 135

Specifications:

Alloy	Working Temperature (˚C)	NF EN ISO 17672	AWS A-5.8	DIN 8513	EN ISO 3677	AMS
Cu-P-Ag	700	-	-		B Cu 84 P Ag 650-750	-

Characteristics:

PHOSBRAZ AG100 is with higher the silver content, the greater the ductility of the brazed joint. This addition also refines the alloy, increasing the brazed joints mechanical characteristics and improving electrical conductivity. This is special alloy for high strength capillary brazing.

This brazing alloy is not recommended to be used for the media having sulphur. Also it is not allowed to use for joining steels (Fe) or materials containing Iron (Fe), Nickel (Ni), Cobalt (Co) as it will form brittle phase in the joint. The corrosion resistance of this alloy is comparable to that of copper excepts, when the joint is exposed to sulphur containing gas or at elevated temperatures.. Under these conditions, it is expected that, this alloy will undergo progressive deterioration as other copper phosphorus alloy with Silver or without Silver.

Applications:

PHOSBRAZ AG100 It is recommended for hard brazing of copper and optionally copper brass pipes of combustible installations. As well as all low temperature applications. In Air conditioning and refrigeration application, **PHOSBRAZ AG100** can be used for the service temperature between +150˚C (without loss in strength) to -50˚C. This alloy can be used with flame.

Typical Chemical Compositions (%):

Cu	P	Ag	Bi	Cd	Pb	Zn	Al	Zn + Cd	Max. impurities
Reminder	6.20	10.00	<0.030	<0.01	<0.020	<0.050	<0.01	<0.05	<0.25

Typical Physical Properties:

Colour	Solidus (˚C)	Liquidus (˚C)	Density g/cm³	Elongation %	Tensile strength (MPa)	Electrical Conductivity (%IACS)	Electrical Resistivity (Micro-ohm-cm)
Copper	650	750	8.3	8%	650	-	-

Properties of Brazed Joint:

The properties of a brazed joint dependent upon numerous factors including base metal properties, joint design, metallurgical interactions between the base metal and the filler metal.

Standard Size, Types and Heat Source Recommendations:

Size (mm)	Type				OXY/ACETYLÈNE	INDUCTION	AÉRO-PROPANE	FOUR/OVEN
	Bare	Coated	Coil	Preforms				
1.50, 2.00, 2.50, 3.00	√	√	–	√	√	√	√	X

Preform sizes and other type other than above standard dimensions are solicited case to case basis

PHOSBRAZ AG150

CuPAg 15% Manual brazing

TECHNICAL DATA SHEET 140

Specifications:

Alloy	Working Temperature (˚C)	NF EN ISO 17672	AWS A-5.8	DIN 8153	EN ISO 3677	AMS
Cu-P-Ag	700	CuP 284	BCuP-5	L-Ag 15P	B Cu80 Ag P 645-800	-

Characteristics:

PHOSBRAZ AG150 is CuP alloy with Silver, which lowers the liquidus point, refines the alloy, improving electrical conductivity and increasing ductility due to high % of Ag. Also increase its resistance to vibration and cyclic pressure Polyvalent alloy suitable for copper brazing, without need of using a flux, Good fluidity when brazing sleeves/tubes and copper connections, machine junctions, and so forth, which produce strong leak proof joints. This alloy has good gap filling properties and is well suited to bridge wide gaps. Its low melting temperature gives very good resistance.

This brazing alloy is not recommended to be used for the media having sulphur. Also it is not allowed to use for joining steels (Fe) or materials containing Iron (Fe), Nickel (Ni), Cobalt (Co) as it will form brittle phase in the joint. The corrosion resistance of this alloy is comparable to that of copper excepts, when the joint is exposed to sulphur containing gas or at elevated temperatures.. Under these conditions, it is expected that, this alloy will undergo progressive deterioration as other copper phosphorus alloy with Silver or without Silver.

Applications:

PHOSBRAZ AG 150 is mainly used in Plumbing, Electrical components, Refrigeration and Heating/Ventilation. An economical alloy used in joining copper to copper. It can also use to join coper to low zinc brasses with Phosbraz flux.In the electric and electromechanic Industry In Air conditioning and refrigeration application, **PHOSBRAZ AG 150** can be used for the service temperature between +150˚C (without loss in strength) to -70˚C. This alloy can be used with flame.

Typical Chemical Compositions (%):

Cu	P	Ag	Al	Bi	Cd	Pb	Zn	Zn + Cd	Max. impurities
Balance	5.00	15.00	<0.01	<0.030	<0.01	<0.020	<0.050	<0.05	<0.25

Typical Physical Properties:

Colour	Solidus (˚C)	Liquidus (˚C)	Density g/cm³	Elongation %	Tensile strength (MPa)	Electrical Conductivity (%IACS)	Electrical Resistivity (Micro-ohm-cm)
Copper	645	800	8.4	10%	530	9.90	17.40

Properties of Brazed Joint:

The properties of a brazed joint dependent upon numerous factors including base metal properties, joint design, metallurgical interactions between the base metal and the filler metal.

Standard Size, Types and Heat Source Recommendations:

Size (mm)	Type				OXY/ACETYLÈNE	INDUCTION	AÉRO-PROPANE	FOUR/OVEN
	Bare	Coated	Coil	Preforms				
1.50, 2.00, 2.50, 3.00	√	√	–	√	√	√	√	X

Preform sizes and other type other than above standard dimensions are solicited case to case basis

PHOSBRAZ AG180

CuP-Ag 18% Manual brazing

TECHNICAL DATA SHEET 141

Specifications:

Alloy	Working Temperature (˚C)	DIN EN ISO 17672	AWS A-5.8	DIN 8513	EN ISO 3677	AMS
Cu-P-Ag	650	CuP 286	-	L-Ag 18 P	B Cu 75 Ag P 645-645	-

Characteristics:

PHOSBRAZ AG180 is CuP alloy with Silver, which lowers the liquidus point, refines the alloy, improving electrical conductivity and increasing ductility due to high % of Ag. Also increase its resistance to vibration and cyclic pressure Polyvalent alloy suitable for copper brazing, without need of using a flux, Good fluidity when brazing sleeves/tubes and copper connections, machine junctions, and so forth, which produce strong leak proof joints. This alloy has good gap filling properties and is well suited to bridge wide gaps. Its low melting temperature gives very good resistance.

This brazing alloy is not recommended to be used for the media having sulphur. Also it is not allowed to use for joining steels (Fe) or materials containing Iron (Fe), Nickel (Ni), Cobalt (Co) as it will form brittle phase in the joint. The corrosion resistance of this alloy is comparable to that of copper excepts, when the joint is exposed to sulphur containing gas or at elevated temperatures.. Under these conditions, it is expected that, this alloy will undergo progressive deterioration as other copper phosphorus alloy with Silver or without Silver.

Applications:

PHOSBRAZ AG180 is mainly used in Plumbing, Electrical components, Refrigeration and Heating/Ventilation. An economical alloy used in joining copper to copper. It can also use to join coper to low zinc brasses with Phosbraz flux.In the electric and electromechanic Industry In Air conditioning and refrigeration application, **PHOSBRAZ AG180** can be used for the service temperature between +150˚C (without loss in strength) to -70˚C. This alloy can be used with flame.

Typical Chemical Compositions (%):

Cu	P	Ag	Al	Bi	Cd	Pb	Zn	Zn + Cd	Max. impurities
Reminder	7.00	18.00	<0.01	<0.030	<0.01	<0.025	<0.050	<0.05	<0.25

Typical Physical Properties:

Colour	Solidus (˚C)	Liquidus (˚C)	Density g/cm³	Elongation %	Tensile strength (MPa)	Electrical Conductivity (%IACS)	Electrical Resistivity (Micro-ohm-cm)
Copper	645	645	8.4	10%	480	-	-

Properties of Brazed Joint:

The properties of a brazed joint dependent upon numerous factors including base metal properties, joint design, metallurgical interactions between the base metal and the filler metal.

Standard Size, Types and Heat Source Recommendations:

Size (mm)	Type							
	Bare	Coated	Coil	Preforms	OXY/ACETYLÈNE	INDUCTION	AÉRO-PROPANE	FOUR/OVEN
1.50 , 2.00, 2.50, 3.00	√	√	–	√	√	√	√	X

Preform sizes and other type other than above standard dimensions are solicited case to case basis

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Rev 09/2016

PHOSBRAZ CPA 2

CuP-Ag 2% without Silicium Manual brazing

TECHNICAL DATA SHEET 116

Specifications:

Alloy	Working Temperature (˚C)	NF EN ISO 17672	AWS A-5.8	DIN 8513	EN ISO 3677	AMS
Cu-P-Ag	740	CuP 279	-	L-Ag2 P	B Cu 92 P Ag 645-825	-

Characteristics:

PHOSBRAZ CPA 2 is CuP alloy with Silver, without Silicon which lowers the liquids point, refines the alloy, improving electrical conductivity and increasing ductility. Also increase its resistance to vibration and cyclic pressure Polyvalent alloy suitable for copper brazing, without need of using a flux, Good fluidity when brazing sleeves/tubes and copper connections, machine junctions, and so forth, which produce strong leak proof joints. This alloy has good gap filling properties and is well suited to bridge wide gaps. Its low melting temperature gives very good resistance.

This brazing alloy is not recommended to be used for the media having sulphur. Also it is not allowed to use for joining steels (Fe) or materials containing Iron (Fe), Nickel (Ni), Cobalt (Co) as it will form brittle phase in the joint. The corrosion resistance of this alloy is comparable to that of copper excepts, when the joint is exposed to sulphuric containing gas or at elevated temperatures.. Under these conditions, it is expected that, this alloy will undergo progressive deterioration as other copper phosphorus alloy with Silver or without Silver.

Applications:

PHOSBRAZ CPA 2 It is mainly used in Plumbing, Electrical components, Refrigeration and Heating/Ventilation. An economical alloy used in joining copper to copper. It can also use to join coper to low zinc brasses with Phosbraz flux. In Air conditioning and refrigeration application, **PHOSBRAZ CPA 2** can be used for the service temperature between +150 ˚C (without loss in strength) to -20˚C. This alloy can be used with flame.

Typical Chemical Compositions (%):

Cu	P	Ag	Si	Al	Bi	Cd	Pb	Zn	Zn + Cd	Max. impurities
Reminder	6.40	2.00	<0.005	<0.010	<0.030	<0.01	<0.020	<0.050	<0.005	<0.25

Typical Physical Properties:

Colour	Solidus (˚C)	Liquidus (˚C)	Density g/cm³	Elongation %	Tensile strength (MPa)	Electrical Conductivity (%IACS)	Electrical Resistivity (Micro-ohm-cm)
Copper	645	825	8.1	6%	550	9.1	18.95

Properties of Brazed Joint:

The properties of a brazed joint dependent upon numerous factors including base metal properties, joint design, metallurgical interactions between the base metal and the filler metal.

Standard Size, Types and Heat Source Recommendations ::

Size (mm)	Type				OXY/ACETYLÈNE	INDUCTION	AÉRO-PROPANE	FOUR/OVEN
	Bare	Coated	Coil	Preforms				
1.50 ,2.00,2.50,3.00	√	-	-	-	√	√	X	X

Preform sizes and other type other than above standard dimensions are solicited case to case basis

PHOSBRAZ CPA 4.5

CuP-Ag 4.5% without Silicon Manual brazing

TECHNICAL DATA SHEET 121

Specifications:

Alloy	Working Temperature (˚C)	NF EN ISO 17672	AWS A-5.8	DIN 8513	EN ISO 3677	AMS
Cu-P-Ag	710	-	-	-	-	-

Characteristics:

PHOSBRAZ CPA 4.5 is CuP alloy with Silver, without Silicon which lowers the liquids point, refines the alloy, improving electrical conductivity and increasing ductility. Also increase its resistance to vibration and cyclic pressure Polyvalent alloy suitable for copper brazing, without need of using a flux, Good fluidity when brazing sleeves/tubes and copper connections, machine junctions, and so forth, which produce strong leak proof joints. This alloy has good gap filling properties and is well suited to bridge wide gaps. Its low melting temperature gives very good resistance.

This brazing alloy is not recommended to be used for the media having sulphur. Also it is not allowed to use for joining steels (Fe) or materials containing Iron (Fe), Nickel (Ni), Cobalt (Co) as it will form brittle phase in the joint. The corrosion resistance of this alloy is comparable to that of copper excepts, when the joint is exposed to sulphur containing gas or at elevated temperatures. Under these conditions, it is expected that, this alloy will undergo progressive deterioration as other copper phosphorus alloy with Silver or without Silver.

Applications:

PHOSBRAZ CPA 4.5 is mainly used in Plumbing, Electrical components, Refrigeration and Heating/Ventilation. An economical alloy used in joining copper to copper. It can also use to join coper to low zinc brasses with Phosbraz flux. In Air conditioning and refrigeration application, **PHOSBRAZ CPA 4.5** can be used for the service temperature between +150˚C (without loss in strength) to -20˚C. This alloy can be used with flame.

Typical Chemical Compositions (%):

Cu	P	Ag	Si	Al	Bi	Cd	Pb	Zn	Zn + Cd	Max. impurities
Reminder	6.40	4.50	<0.05	<0.010	<0.030	<0.01	<0.020	<0.050	<0.05	<0.25

Typical Physical Properties:

Colour	Solidus (˚C)	Liquidus (˚C)	Density g/cm³	Elongation %	Tensile strength (MPa)	Electrical Conductivity (%IACS)	Electrical Resistivity (Micro-ohm-cm)
Copper	645	815	8.2	8%	650	-	-

Properties of Brazed Joint:

The properties of a brazed joint dependent upon numerous factors including base metal properties, joint design, metallurgical interactions between the base metal and the filler metal.

Standard Size, Types and Heat Source Recommendations:

Size (mm)	Type				OXY/ACETYLÈNE	INDUCTION	AÉRO-PROPANE	FOUR/OVEN
	Bare	Coated	Coil	Preforms				
1.50 ,2.00,2.50,3.00	√	-	-	-	√	√	X	X

Preform sizes and other type other than above standard dimensions are solicited case to case basis

PHOSBRAZ CPA5

Cu-P-Ag 5% Manual brazing

TECHNICAL DATA SHEET 117

Specifications:

Alloy	Working Temperature (˚C)	NF EN ISO 17672	AWS A-5.8	DIN 8513	EN ISO 3677	AMS
Cu-P-Ag	710	CuP 281	BCuP3	L-Ag5P	B Cu 89 P Ag 645-815	-

Characteristics:

PHOSBRAZ CPA5 is CuP alloy with Silver, without Silicon which lowers the liquids point, the greater the ductility of the brazed joint. This addition also refines the alloy, increasing the brazed joints mechanical characteristics and improving electrical conductivity. This is special alloy for high strength capillary brazing.

This brazing alloy is not recommended to be used for the media having sulphur. Also it is not allowed to use for joining steels (Fe) or materials containing Iron (Fe), Nickel (Ni), Cobalt (Co) as it will form brittle phase in the joint. The corrosion resistance of this alloy is comparable to that of copper excepts, when the joint is exposed to sulphur containing gas or at elevated temperatures.. Under these conditions, it is expected that, this alloy will undergo progressive deterioration as other copper phosphorus alloy with Silver or without Silver.

Applications:

PHOSBRAZ CPA5 is recommended for hard brazing of copper and optionally copper brass pipes of combustible installations. As well as all low temperature applications. In Air conditioning and refrigeration application, **PHOSBRAZ CPA5** can be used for the service temperature between +150˚C (without loss in strength) to -50˚C. This alloy can be used with flame.

Typical Chemical Compositions (%):

Cu	P	Ag	Si	Bi	Cd	Pb	Zn	Al	Zn + Cd	Max. impurities
Reminder	6.00	5.00	<0.05	<0.030	<0.01	<0.025	<0.050	<0.01	<0.05	<0.25

Typical Physical Properties:

Colour	Solidus (˚C)	Liquidus (˚C)	Density g/cm³	Elongation %	Tensile strength (MPa)	Electrical Conductivity (%IACS)	Electrical Resistivity (Micro-ohm-cm)
Copper	645	815	8.2	8%	650	9.6	18.1

Properties of Brazed Joint:

The properties of a brazed joint dependent upon numerous factors including base metal properties, joint design, metallurgical interactions between the base metal and the filler metal.

Standard size and types:

Size (mm)	Type							
	Bare	Coated	Coil	Preforms				
1.50 , 2.00, 2.50, 3.00	√	√	–	√	√	√	X	X

Preform sizes and other type other than above standard dimensions are solicited case to case basis

PHOSBRAZ CPA14.5

CuPAg 14.5% Manual brazing

TECHNICAL DATA SHEET 97

Specifications:

Alloy	Working Temperature (˚C)	NF EN ISO 17672	AWS A-5.8	DIN 8153	EN ISO 3677	AMS
Cu-P-Ag	700	-	-	-	-	-

Characteristics:

PHOSBRAZ CPA14.5 is CuP alloy with Silver, without Silicon which lowers the liquids point, refines the alloy, improving electrical conductivity and increasing ductility due to high % of Ag. Also increase its resistance to vibration and cyclic pressure Polyvalent alloy suitable for copper brazing, without need of using a flux, Good fluidity when brazing sleeves/tubes and copper connections, machine junctions, and so forth, which produce strong leak proof joints. This alloy has good gap filling properties and is well suited to bridge wide gaps. Its low melting temperature gives very good resistance.

This brazing alloy is not recommended to be used for the media having sulphur. Also it is not allowed to use for joining steels (Fe) or materials containing Iron (Fe), Nickel (Ni), Cobalt (Co) as it will form brittle phase in the joint. The corrosion resistance of this alloy is comparable to that of copper excepts, when the joint is exposed to sulphur containing gas or at elevated temperatures.. Under these conditions, it is expected that, this alloy will undergo progressive deterioration as other copper phosphorus alloy with Silver or without Silver.

Applications:

PHOSBRAZ CPA 14.5 is mainly used in Plumbing, Electrical components, Refrigeration and Heating/Ventilation. An economical alloy used in joining copper to copper. It can also use to join coper to low zinc brasses with Phosbraz flux.In the electric and electromechanic Industry In Air conditioning and refrigeration application, **PHOSBRAZ CPA 14.5** can be used for the service temperature between +150˚C (without loss in strength) to -70˚C. This alloy can be used with flame.

Typical Chemical Compositions (%):

Cu	P	Ag	Si	Al	Bi	Cd	Pb	Zn	Zn + Cd	Max. impurities
Balance	5.00	14.50	<0.05	<0.01	<0.030	<0.01	<0.025	<0.050	<0.05	<0.25

Typical Physical Properties:

Colour	Solidus (˚C)	Liquidus (˚C)	Density g/cm³	Elongation %	Tensile strength (MPa)	Electrical Conductivity (%IACS)	Electrical Resistivity (Micro-ohm-cm)
Copper	645	800	8.4	10%	500	-	-

Properties of Brazed Joint:

The properties of a brazed joint dependent upon numerous factors including base metal properties, joint design, metallurgical interactions between the base metal and the filler metal.

Standard Size, Types and Heat Source Recommendations:

Size (mm)	Type				OXY/ACETYLÈNE	INDUCTION	AÉRO-PROPANE	FOUR/OVEN
	Bare	Coated	Coil	Preforms				
1.50, 2.00, 2.50, 3.00	√	√	–	√	√	√	√	X

Preform sizes and other type other than above standard dimensions are solicited case to case basis

PHOSBRAZ CPA15

CuPAg 15% Manual brazing

TECHNICAL DATA SHEET 118

Specifications:

Alloy	Working Temperature (˚C)	NF EN ISO 17672	AWS A-5.8	DIN 8153	EN ISO 3677	AMS
Cu-P-Ag	700	CuP 284	BCuP-5-	L-Ag 15P	B-Cu80AgP-645-800	-

Characteristics:

PHOSBRAZ CPA15 is CuP alloy with Silver, without Silicon which lowers the liquids point, refines the alloy, improving electrical conductivity and increasing ductility due to high % of Ag. Also increase its resistance to vibration and cyclic pressure Polyvalent alloy suitable for copper brazing, without need of using a flux, Good fluidity when brazing sleeves/tubes and copper connections, machine junctions, and so forth, which produce strong leak proof joints. This alloy has good gap filling properties and is well suited to bridge wide gaps. Its low melting temperature gives very good resistance.

This brazing alloy is not recommended to be used for the media having sulphur. Also it is not allowed to use for joining steels (Fe) or materials containing Iron (Fe), Nickel (Ni), Cobalt (Co) as it will form brittle phase in the joint. The corrosion resistance of this alloy is comparable to that of copper excepts, when the joint is exposed to sulphur containing gas or at elevated temperatures.. Under these conditions, it is expected that, this alloy will undergo progressive deterioration as other copper phosphorus alloy with Silver or without Silver.

Applications:

PHOSBRAZ CPA 15 is mainly used in Plumbing, Electrical components, Refrigeration and Heating/Ventilation. An economical alloy used in joining copper to copper. It can also use to join coper to low zinc brasses with Phosbraz flux.In the electric and electromechanic Industry In Air conditioning and refrigeration application, **PHOSBRAZ CPA 15** can be used for the service temperature between +150˚C (without loss in strength) to -70˚C. This alloy can be used with flame.

Typical Chemical Compositions (%):

Cu	P	Ag	Si	Al	Bi	Cd	Pb	Zn	Zn + Cd	Max. impurities
Balance	5.00	15.00	<0.05	<0.01	<0.030	<0.01	<0.025	<0.050	<0.05	<0.25

Typical Physical Properties:

Colour	Solidus (˚C)	Liquidus (˚C)	Density g/cm³	Elongation %	Tensile strength (MPa)	Electrical Conductivity (%IACS)	Electrical Resistivity (Micro-ohm-cm)
Copper	645	800	8.4	10%	530	9.90	17.40

Properties of Brazed Joint:

The properties of a brazed joint dependent upon numerous factors including base metal properties, joint design, metallurgical interactions between the base metal and the filler metal.

Standard Size, Types and Heat Source Recommendations:

Size (mm)	Type				OXY/ACETYLÈNE	INDUCTION	AÉRO-PROPANE	FOUR/OVEN
	Bare	Coated	Coil	Preforms				
1.50, 2.00, 2.50, 3.00	√	√	–	√	√	√	√	X

Preform sizes and other type other than above standard dimensions are solicited case to case basis

PHOSBRAZ M68

CuP-Ag (0.2%) Manual brazing Alloy

TECHNICAL DATA SHEET 56

Specifications:

Alloy	Working Temperature (˚C)	NF EN ISO 17672	AWS A-5.8	DIN 8513	EN ISO 3677	AMS
Cu-P-Ag	730	-	-	-	-	-

Characteristics:

PHOSBRAZ M68 is CuP alloy with standard fluidity (%P 6.8) and 0.2% Silver addition, which lowers the liquidus point, refines the alloy, improving electrical conductivity and increasing ductility. Also increase its resistance to vibration and cyclic pressure Polyvalent alloy suitable for copper brazing, without need of using a flux, Good fluidity when brazing sleeves/tubes and copper connections, machine junctions, and so forth, which produce strong leak proof joints. This alloy has good gap filling properties and is well suited to bridge wide gaps. Its low melting temperature gives very good resistance.
This brazing alloy is not recommended to be used for the media having sulphur. Also it is not allowed to use for joining steels (Fe) or materials containing Iron (Fe), Nickel (Ni), Cobalt (Co) as it will form brittle phase in the joint. The corrosion resistance of this alloy is comparable to that of copper except, when the joint is exposed to sulphur containing gas or at elevated temperatures. Under these conditions, it is expected that, this alloy will undergo progressive deterioration as other copper phosphorus alloy with Silver or without Silver.

Applications:

PHOSBRAZ M68 is mainly used in Plumbing, Electrical components, Refrigeration and Heating/Ventilation. An economical alloy used in joining copper to copper. It can also use to join coper to low zinc brasses with Phosbraz flux. In Air conditioning and refrigeration application, **PHOSBRAZ M68** can be used for the service temperature between +150 ˚C (without loss in strength) up to -10˚C. This alloy can be used with flame.

Typical Chemical Compositions (%):

Cu	P	Ag	Al	Bi	Cd	Pb	Zn	Zn + Cd	Max. impurities
Reminder	6.80	0.20	<0.01	<0.030	<0.01	<0.025	<0.050	<0.05	<0.25

Typical Physical Properties:

Colour	Solidus (˚C)	Liquidus (˚C)	Density g/cm³	Elongation %	Tensile strength (MPa)	Electrical Conductivity (%IACS)	Electrical Resistivity (Micro-ohm-cm)
Copper	710	815	8.1	5%	500	7.80	22.10

Properties of Brazed Joint:

The properties of a brazed joint dependent upon numerous factors including base metal properties, joint design, metallurgical interactions between the base metal and the filler metal.

Standard Size, Types and Heat Source Recommendations:

Size (mm)	Type				OXY/ACETYLÈNE	INDUCTION	AÉRO-PROPANE	FOUR/OVEN
	Bare	Coated	Coil	Preforms				
1.50 , 2.00, 2.50, 3.00	√	√	–	√	√	√	X	X

Preform sizes and other type other than above standard dimensions are solicited case to case basis

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