

BRAZETEC Brazing Paste

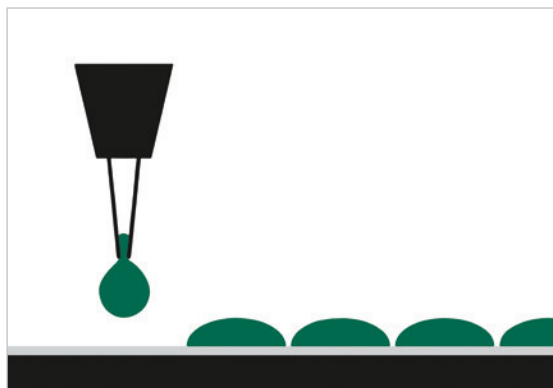


## / BRAZETEC Brazing Paste Systems

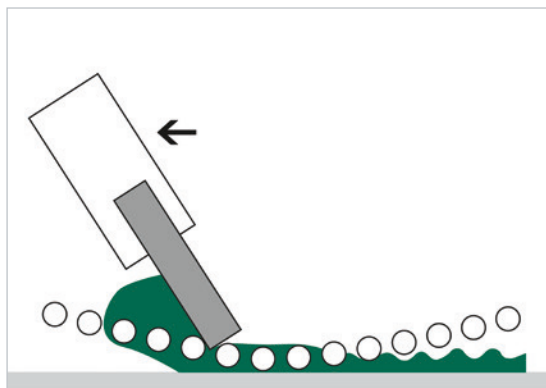
For innovative connection possibilities, BRAZETEC also offers brazing materials as pastes, in addition to the solid forms. A brazing paste is a homogenous, ready to use, mixture of metallic brazing powder, flux and solvents. Polymers and other additives prevent the settlement of the brazing powder and determine the application and flow characteristics of the brazing paste. The following processes are available for the application according to the task in hand.

BRAZETEC offers tailor-made brazing paste systems for these application processes. For this purpose, a wide range of binder systems and brazing paste formulations have been developed and can be further adapted for specific customer processes. Brazing pastes are particularly suitable for automated brazing processes, because they can be easily integrated into a production process. They enable the optimum use of materials for both small and large series production.

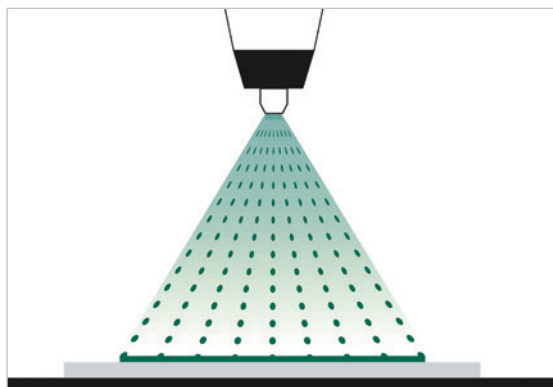
## / Application Processes



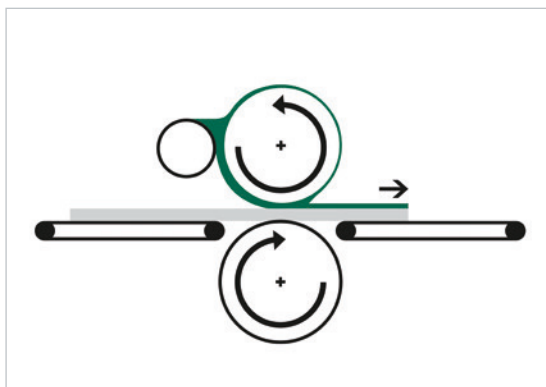
D = Dispensing



P = Screen-/Stencilprinting



S = Spraying



R = Rollercoating

## / BRAZETEC Silver Based Brazing Paste

The silver based BRAZETEC brazing pastes can be used to braze any steel, copper, nickel, and copper alloy. They can be applied with a dispenser or by screen printing. There is a risk of crevicecorrosion when brazing stainless steels if the braze contains zinc.

The brazing pastes shown below are available on a standard basis, and depending on the application, contain flux or are flux free. Additional alloys are available upon request.

Name	Composition by Weight-%						Melting Range acc. to DSC in °C	Melting Range acc. to ISO 17672 in °C	Brazing Temp. in °C	ISO 17672	Notes on Application
	Ag	Cu	Zn	Mn	Ni	Misc.					
BrazeTec D 7200	72	28	-	-	-	-	780	780	780	Ag 272	any steel, copper-Ni and Ni-alloys
BrazeTec D 6488	65	26	-	2	2	6 In	730 – 780	-	770	-	TiN- coatable
BrazeTec D 5600	56	22	17	-	-	5 Sn	630 – 655	620 – 655	655	Ag 156	any steel, copper-Ni and Ni-alloys
BrazeTec D 5081	50	20	28	-	2	-	670 – 730	660 – 715	700	Ag 450	cemented carbides
BrazeTec D 4900	49	16	23	7.5	4.5	-	680 – 705	680 – 705	690	Ag 449	cemented carbides
BrazeTec D 4576	45	27	25,5	-	-	2.5 Sn	645 – 695	640 – 680	695	Ag 145	any steel, copper-Ni and Ni-alloys

## / BRAZETEC Copper Based Brazing Paste

The CuproBraz®-Process was developed especially for the flux free brazing of copperbrass radiators in protective gas furnaces. The brazing material used in this process is a phosphorous containing copper alloy. The radiators are produced in a manner that displays high resistance with high working temperatures as

well. In addition the entire CuproBraz®-Process is also notable for its low costs. The different solvent based pastes can be applied by spraying onto the tubes (BrazeTec CST 600 TD) or through special roller-coating onto the fins. These pastes can also be used for Copper-Copper-Brazing.

Name	Composition by Weight-%					Melting Range acc. to DSC	Melting Range acc. to ISO 17672	Brazing Temp.	ISO 17672	Atmosphere <sup>11</sup>				Notes on Application
	Cu	Sn	Ni	P	Ag	in °C	in °C	in °C		A	B	C	D	
BrazeTec D 801	100	-	-	-	-	1,085	1,085	1,120	Cu 110	•	•	•	•	Any steel, Ni and Ni alloys
BrazeTec D 807	80	-	-	5	15	645 – 800	645 – 800	720	CuP 284	•	-	•	•	Cu and Cu alloys
BrazeTec D 810	92	-	-	8	-	710 – 770	710 – 770	750	CuP 182	•	•	•	-	Cu and Cu alloys
BrazeTec D 813	75	-	-	7	18	645	645	695	CuP 286	•	•	•	•	Cu and Cu alloys

### Brazing paste systems for the CuproBraz® process

BrazeTec CST 600 TD	76	15.6	4.2	5,3	-	590 – 610	-	650	-	•	-	•	-	Paste for preliminary brazing of tubes by means of spray application for the CuproBraz® process
BrazeTec CSF 600 TD	76	15.6	4.2	5,3	-	590 – 610	-	650	-	•	-	•	-	Paste for preliminary brazing of fin tips by means of roller application for the CuproBraz® process

<sup>11</sup> A = dry hydrogen B = vacuum C = H<sub>2</sub>N<sub>2</sub>-gas atmospheres (dew point -30 °C) D = Exogas

## / BRAZETEC Nickel Based Brazing Paste

Modern application-systems can be used for almost all known powder-type nickel-based brazing alloys. The products shown below are available as standard products from BRAZETEC.

Among others, the application of the BRAZETEC nickel-based brazing pastes is commonly practiced in heat exchangers and the automotive industry.

Name	Composition by Weight-%						Melting Range acc. to DSC	Melting Range acc. to ISO 17672	Brazing Temp.	ISO 17672	Atmosphere <sup>11</sup>			Application Processes <sup>21</sup>				
	Ni	Cr	Fe	Si	B	P	in °C	in °C	in °C		A	B	C	Solvent based Pastes		Water based Pastes		
														P	R	S	D	S
BrazeTec 897	76	14	-	-	-	10	890	890	980	Ni 710	•	•	•	•	-	•	•	•
BrazeTec 1002	82.4	7	3	4.5	3.1	-	970 – 1,000	970 – 1,000	1,050	Ni 620	•	•	-	•	•	•	•	•
BrazeTec 1090	60	30	-	4	-	6	980 – 1,040	-	1,090	-	•	•	•	-	•	-	•	•
BrazeTec 1130	72	18	-	8	-	2	1,050 – 1,090	-	1,080	-	•	•	•	-	-	-	•	-
BrazeTec 1135	70.9	19	-	10.1	-	-	1,080 – 1,135	1,080 – 1,135	1,190	Ni 650	•	•	•	•	•	•	•	•

<sup>11</sup> A = dry hydrogen B = vacuum C = H<sub>2</sub>N<sub>2</sub>-gas atmospheres (dew point -30 °C) <sup>21</sup> D = Dispensing P = Screen-/Stencilprinting S = Spraying R = Rollercoating

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# BRAZETEC Active Brazing Alloys and Active Brazing Paste



## / BRAZETEC Active Brazing Alloys

A minimal brazing temperature of 850 °C is necessary in order to achieve a bond with ceramics using BRAZETEC Active Brazing Alloys. Higher brazing temperatures can improve the wetting behaviour. Pure Argon (4.8) or vacuum (<math>10^{-3}</math>mbar) is used as the protective

brazing atmosphere. The temperature for a vacuum brazing should with CB4 should not be higher than 900 °C and for CB 2 and 6 not higher than 1,000 °C to avoid the evaporation of silver.

Name	Composition by Weight-%				Melting Range acc. to DSC	Melting Range acc. to ISO 17672	Brazing Temp. min.	Density	Notes on Application	Available Forms
	Ag	Cu	In	Ti	in °C	in °C	in °C	in g/cm <sup>3</sup>		
BrazeTec CB 2	96	-	-	4	970	-	1,000	10.3	ceramic, ceramic/metal-connections, graphite, diamond, sapphire, ruby	• • • •
BrazeTec CB 4	70.5	26.5	-	3	780 – 820	-	850	9.9	silicon nitride	• • • •
BrazeTec CB 6	98.4	-	1	0.6	950 – 960	-	1,000	10.3		• • • •

## / BRAZETEC Active Brazing Paste

BRAZETEC active brazing pastes have a high metal content, which is optimised for the application of the product.

Materials with different Ti-contents are also available on request.

Name	Composition by Weight-%				Melting Range acc. to DSC	Brazing Temp. min.	Notes on Application	Available Forms
	Ag	Cu	In	Ti	in °C	in °C		
BrazeTec CB 10	64.8	25.2	-	10	780 – 805	850	ceramic, ceramic/metal-connections, graphite, sapphire, ruby	• •
BrazeTec CB 11	90	-	-	10	970	1,000		• •
BrazeTec CB 12	55.1	39.9	-	5	780 – 855	>900	ceramic, ceramic/metal connections, PCD, CBN applications	• •
BrazeTec CB 17	59.1	27.2	12.5	1.2	605 – 720	780 – 800		• •

