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Copper and copper alloy brazing
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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. Consequently **JIS Z 3262 : 1986** is replaced with **JIS Z 3262 : 1998**.

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4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

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Copper and copper alloy brazing filler metals

Introduction

This Japanese Industrial Standard is the revised version of JIS Z 3262-1986 *Copper and copper-zinc brazing filler metals*, after taking the contents of the second edition of ISO 3677 *Filler metal for soft soldering, brazing and braze welding—Designation* issued in 1992 into account. In addition to the items specified in the JIS, "Designation and Symbols" specified in ISO 3677 are adopted and coordinated without changing the technical contents.

1 Scope This Japanese Industrial Standard specifies the copper and copper alloy brazing filler metals used for brazing, hereinafter referred to as the "brazing filler metals".

2 Normative Reference The following standards are referred to in this Standard and constitute a part of this Standard. The latest versions of those standards shall be applied.

JIS H 0321 *General rules for inspection of non-ferrous metal materials*

JIS Z 3902 *Methods for chemical analysis of brass brazing filler metals*

3 Classification

- a) The brazing filler metals shall be classified into 9 classes on the basis of their chemical composition as shown in Table 1.
- b) Other impurities totals are 0.01 % or less for BCu-1, 0.30 % or less for BCu-1A and 0.50 % or less for BCu-2 to 8, containing Pb, Al, etc.

4 Quality The quality of the brazing filler metals shall be as follows :

- a) The brazing filler metal shall be uniform in quality and free from harmful defects in use.
- b) The chemical composition of the brazing filler metal shall comply with Table 1, when tested in accordance with the method specified in 6.

5 Shape, Dimension and Tolerance The shape, dimension and tolerance shall be as follows :

- a) The shapes of the brazing filler metals shall be ribbon, wire, bar, granule, powder and preformed types and they are represented by R, W, B, P (for granule and powder) and F respectively.
- b) The dimensions and tolerances of the brazing filler metal shall be agreed between the parties concerned with delivery.

Table 1 Classes

Symbol A	Class Symbol B (1)	Chemical composition (mass %)								Temperature (ref.) °C		
		Cu	Zn	Sn	Ni	Mn	P	Si	Other Elements Total (2)	Solidus Line Temp. (approx.)	Liquidus Line Temp. (approx.)	Brazing Temp.
BCu-1	B-Cu100-1083	99.99 or more	—	—	—	—	—	—	0.10 or less	1 083	1 083	1 095 to 1 150
BCu-1A	B-Cu99-1083	99.00 or more	—	—	—	—	—	—	0.30 or less	1 083	1 083	1 095 to 1 150
BCu-2 (2)	B-Cu87-1083	86.50 or more	—	—	—	—	—	—	0.50 or less	1 083	1 083	1 095 to 1 150
BCu-3	B-Cu94Sn(P)-910/1040	remainder	—	5.5 to 7.0	—	—	0.01 to 0.40	—	0.50 or less	910	1 040	1 040 to 1 100
BCu-4	B-Cu88Sn(P)-825/990	remainder	—	11.0 to 13.0	—	—	0.01 to 0.40	—	0.50 or less	825	990	990 to 1 050
BCu-5	B-Cu60Zn-900/905	58.0 to 62.0	remainder	—	—	—	—	0.2 to 0.4	0.50 or less	900	905	905 to 955
BCu-6	B-Cu59ZnSn-890/900	57.0 to 61.0	remainder	0.25 to 1.0	—	—	—	0.2 to 0.4	0.50 or less	890	900	900 to 955
BCu-7	B-Cu59ZnSnNi(Mn, Si)870/890	56.0 to 62.0	remainder	0.5 to 1.5	0.5 to 1.5	0.2 to 1.0	—	0.1 to 0.5	0.50 or less	870	890	890 to 955
BCu-8	B-Cu48ZnNi(Si)890/920	46.0 to 50.0	remainder	0.2 or less	8.0 to 11.0	0.2 or less	—	0.15 to 0.5	0.50 or less	890	920	920 to 980

Note: (1) Symbol B is the specification in accordance with ISO 3677 and is the designation of filler metals (denoting the basic composition, the chemical composition, solidus line temperature, and liquidus line temperature).

(2) For the main composition, the organic binder of oxide copper is excluded.

6 Chemical Analysis Test The chemical analysis test of the brazing filler metal shall be in accordance with JIS Z 3902. However, the total of other impurities specified in 3 b) shall be agreed between the parties concerned.

7 Inspection The inspection shall be conducted as follows :

- a) The quality, shape and dimension of the brazing filler metal shall meet the requirements of 4 and 5 above. However, a part of the chemical analysis test may be omitted subject to the agreement between the parties concerned with delivery.
- b) The other general matters shall be in accordance with JIS H 0321.

8 Packaging The brazing filler metals shall be packaged properly to prevent possible contamination and damage during transportation and storage.

9 Designation of Products The products shall be designated according to the classes (symbols), shapes and dimensions (thickness and width for ribbon type, diameter for wire type, diameter and length for rod type, and size for granule and powder types). The dimension of the preformed type shall be agreed between the parties concerned with delivery.

Example :

For ribbon type	<u>BCu-1-R</u>	<u>1.0</u> - <u>5.0</u>	and/or	<u>B-Cu100-1083-R</u>	<u>1.0</u> - <u>5.0</u>
	Class, Shape,	Thickness, Width (mm) (mm)		Class, Shape,	Thickness, Width (mm) (mm)
For wire type	<u>BCu-1-W</u>	<u>1.2</u>	and/or	<u>B-Cu100-1083-W</u>	<u>1.2</u>
	Class, Shape,	Dia. (mm)		Class, Shape,	Dia. (mm)
For bar type	<u>BCu-2-B</u>	<u>3.2</u> - <u>1000</u>	and/or	<u>B-Cu87-1083-B</u>	<u>3.2</u> - <u>1000</u>
	Class, Shape,	Dia., Length (mm) (mm)		Class, Shape,	Dia., Length (mm) (mm)
For granule and powder type	<u>BCu-2-P</u>	<u>250</u>	and/or	<u>B-Cu87-1083-P</u>	<u>250</u>
	Class, Shape,	Size (μ m)		Class, Shape,	Size (μ m)

10 Marking

10.1 Each package of the brazing filler metals shall be clearly marked with the following information :

- a) Class (to be designated by symbol A and/or B)
- b) Shape and dimension
- c) Mass (net mass)
- d) Manufacturing number
- e) Year and month of manufacture or its abbreviation
- f) Name of manufacturer or its abbreviation

10.2 Each package shall be marked with caution against fume generating at the time of brazing, and metal allergy.

Errata for JIS (English edition) are printed in *Standardization Journal*, published monthly by the Japanese Standards Association, and also provided to subscribers of JIS (English edition) in *Monthly Information*.

Errata will be provided upon request, please contact:
Standardization Promotion Department, Japanese Standards Association
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN
TEL. 03-3583-8002 FAX. 03-3583-0462