

PRODUCTS GUIDE

Brazing Section

NIHON SUPERIOR (THAILAND) CO.,LTD

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NIHON SUPERIOR

NS Cadmium-Free Silver Brazing Alloy

Properties/ Products No.	NS-135	NS-44N	NS-433	NS-435	NS-530	NS-546	NS-722	NS-103	NS-104	
JIS-Z-3261	-	B _{Ag} -4	-	B _{Ag} -5	B _{Ag} -6	B _{Ag} -7	B _{Ag} -8	-	-	
Composition (%)	Ag	35	40	40	45	50	56	72	30	40
	Cu	33	30	30	30	34	22	28	38	30
	Zn	30	28	30	25	16	17		27	25
	In	2							5	5
	Other		Ni-2				SN·5			
Temperature	Solidus	680	670	670	675	690	620	780	640	635
	Liquidus	730	780	730	745	775	650	780	755	715
Specific Gravity (S.G.)	9.2	9.1	9.2	9.1	9.3	9.3	10.1	8.7	8.8	
Rework	Available in length Rod, Coil, wiring spool, and ring or pellet form.									

Standard package: 1Kg/Plastic bag (For 500mm Rod)

5Kg/Carton (For 500mm Rod)

Flux-Coating-Silver Brazing alloys (F/C Silver Brazing alloy)

Commodity	Temperature (°C)		Size (Before flux-coating)	Packing
	Solidus	Liquidus		
MOT	675	765	Approx. 1.5mm ϕ x500mm	1 Kg in plastic bag
One-touch silver Brazing alloy	675	765	Approx. 1.5mm ϕ x500mm	5pcs in plastic sack container

Bare Silver Brazing Alloy corresponds to B_{Ag}-20(Alloy composition: Ag 30/ Cu 38/ Zn 32%) and coated with flux in 28% W/W. (Diameter of pre-flux-coated is approx. 2.8mm ϕ)

NS Copper Phosphorus Brazing Alloy (For Copper and Copper alloy)

Properties/Products No.	NS-0	NS-1	NS-2	NS-5	NS-6F	NS-15	NS-30	
Specification	JIS-3264 BCuP-2	-	BCuP-6	BCuP-3	BCuP-4	BCuP-5	-	
Composition (%)	AWS 5.8-7.6 BCuP-2	-	BCuP-6	BCuP-3	BCuP-4	BCuP-5	-	
	Cu	Reminder	Reminder	Reminder	Reminder	Reminder	Reminder	
	P	7.0	6.5	7.0	6.0	7.2	5.0	7.5
	Ag	-	1	2.0	5.0	6.0	15.0	-
	Sn	-	-	-	-	-	-	7.0
Temperature (°C)	Solidus	705	645	640	640	640	640	665
	Liquidus	805	795	788	805	720	815	695
	Working	735-840	730-830	732-815	705-840	705-815	705-815	660-750
S.G.	8.0	8.0	8.0	8.1	8.1	8.5	7.8	
Fluidity	fast	Mode- rate	Mode- rate	Slow	fast	Slow	Very fast	
Joint clearance(mm)	0.03-0.08	0.03-0.13	0.03-0.13	0.03-0.13	0.03-0.08	0.03-0.13		
Remark	Copper phosphorus brazing alloy is primarily self-fluxing type so it does not require flux when applied to the pure copper. However, it is recommendable to use flux for brazing copper alloy for better brazing finish. Available in length rod, coil, wiring spool, and ring or pellet form. NS-211 and Gasflux are available when brazing this type of alloy.							

Standard package: 1kg/plastic bag (for 500mm rod)

5kg/carton (for 500mm rod)

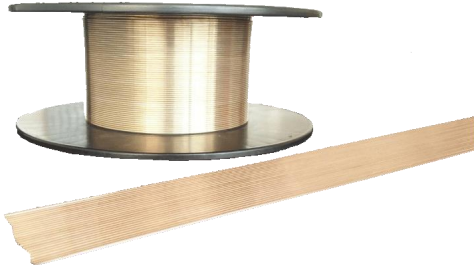
NS Copper Based Alloy

Commodity	Composition	Working temp.	Tensile strength (kgf/mm ²)	Flux	Dia (mm)	Properties
NS-BRONZE-N	CuZnNi	920°C	40-50	NS-800 Gas Flux W	1.2,1.6, 2.0,2.6, 3.2,4.0	Economic highly efficient copper based brazing rod, contains Nickel.
L.F.B. (Low Fuming Bronze)	CuZnSn	900°C	35-45	do	1.6,2.4	Copper based brazing rod especially prepared for brazing operation requiring fluidity.
NS-10 (Nickel-Silver)	CuZnNi	950°C	60-70	do	1.6,2.0, 2.4	Recommendable for brazing such sections where strength is specially required.
SM-5 (Silver Brass)	CuZnAg	860°C	40-50	do	1.6	Economical low temperature copper based brazing rod for use in lieu of silver brazing alloy contains 5% silver.
Available in 500/1000mm length rod, coil, spool, and ring or pellet.						

Standard Package: 1kg/Plastic bag (for 500mm Rod)
5kg/carton (for 500mm Rod)
10kg/carton (for 1000mm Rod)

Other Brazing Alloy

- Copper brazing alloy (oxygen free copper) Available in diameter recommended for brazing iron in furnace.
- Other Copper alloy such as QQ-R-571C, AWS A5.27-85 and copper pyrite brazing alloys are available. Please contact Nihon Superior for any question.



List of NS Brazing Flux

Classification	Product No.	Active temperature range (°C)	Recommended filler metals	Description	Physical properties	Standard	Packing
Paste Flux	NS-211	426-871	Silver Brazing Alloy, Copper phosphorus Brazing Alloy	The flux has wide range of working temperature and strong permeation effect. Spattering or formation of pinhole are extremely low. Applicable to any brazing filler metals. Recommended for nearly all brazing operation	PH: 7.2 S.G. 1.858 Boiling point: 100°C Melting point: 566°C Flash point: None	- FED SPEC O-F-499C Type B -AWS Type 3A -AMS 3410F	Approx. : 30kg/drum 2kg/bottle
Powder Flux	NS-F800	750-1200	Brass Brazing Alloy	For use for dipping dissolved in hot water, or formulated thinner as need. Highly recommendable for brazing bicycle frames.			20kg/poly Bag Diluted solution 18L/Poly Bottle
Vaporized Flux	Gas flux Type W	760-1205	Silver brazing alloy, copper phosphorus brazing alloy, Brass brazing alloy.	Applicable to brazing almost any metal. Less oxidization or welded section. The brazing finish will be lustrous. The flux is very effective to use with Gasfluxer, mixing and vaporizing equipment.(c.f. P.P.NS safety Brazing System)	S.G :0.855 Boiling Point: 58°C Flash point: -14.5°C		4Gallon/box



NS ALUMINUM BRAZING MATERIALS

Aluminum Brazing Alloy NS-12

NS-12 is an superb brazing alloy suitable for welding such as Tungsten Inert Gas (TIG),Metal Electrode Inert Gas(MIG),and/or Gas methods.

- **Application**

Recommendable for brazing aluminum-silicon casting alloy which contents 7% silicon or more. Also suitable when brazing aluminum alloy with different residual stress. Ex. AlMn, AlMgSi, AlMgMn, AlMg, etc.

- **Dimensions**

Dia 1.2mm, 1.6mm

Available in 500mm.length rod or in approx.5kg-spool forms.

Composition and Properties

Temperature	Solidus	573 °C
	Liquidus	585 °C
	Working temperature	590 °C
S.G.	2.65	
Composition	Si :11.0 – 13.5%, Al: Balance	
Electrical Conductivity (Cu=100%)	48%	
Tensile strength	26kg/mm ²	

Welding Method (In the case of Gas welding)

- (1) Apply NS-12F (Flux) to NS-12 Brazing Alloys slightly preheated, and then, start to braze the section to weld.
- (2) Heat with spread flame to minimize heat dispersion as much as possible. Jig to use for parent metals should be made from materials with lower thermal conduction.
- (3) Simultaneously NS-12F Flux becomes liquidity and parent metal reaches the melting point (Approx. 580°C) at which NS-12 Brazing alloy is molten, quickly apply NS-12 to the section to weld.
- (4) Avoid rapid cooling. Try natural cooling as much as possible.

Flux for Brazing Aluminum NS-12F

NS-12F Flux is a powder type flux for aluminum brazing, the active temperature ranges from 370 to 650 degrees. It smoothest the flow of molten alloy, provides brilliant brazing finish, and makes the operation more effectual.

- **Cleaning**

Remove residues with either fresh or warm water.

- **Packing**

Packaged in polyethylene containers.(Content 500g)

Ten containers are in each carton case.



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