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Contact

#### SENJU METAL INDUSTRY CO., LTD.

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Counterfeit SMIC solder products of various kinds have been circulating abroad.

Always purchase genuine SMIC products from SMIC subsidiaries or authorized distributors







In 2000, Senju Metal Industry commercialized M705, a standard alloy for lead-free solder.

It has played a major role in making electronic components and devices lead-free.

Today, there is a strong demand to minimize solder joints, improve joint reliability in strained environments for on-board electrical components, and support carbon neutrality.

Senju Metal Industry has focused on the development of soldering materials suitable for various needs, expanded its product lineup, and is continuing to contribute to improving the reliability of electronic devices through continuous verification, assuming the operating environments of semiconductors, industrial equipment, and on-board electrical components.

Senju Metal Industry will continue to further develop soldering materials and pioneer the future of the global environment and connections.

We are pioneering the future of joints and connections with a "Total Solution" by providing various forms of soldering materials.



All the solder alloy products are eco-friendly and in harmony with the global environment. We offer an extensive product lineup, allowing our clients to choose the product that best suits their purpose and application.



A product made by mixing fine solder powder and high-viscosity flux to form a paste. This is an essential material for surface mounting.



**Packaging** 

2000

2010

trends

This product contains flux in the center of a coil of solder. It is widely used in construction methods that use soldering irons.



A liquid flux product for use with flux-free solder materials. It improves solderability.



Solder worked into various structures and shapes. It has been used in recent years for power semiconductor packaging in xEVs.



A spherical product used for semiconductor bumping. We can also manufacture micro balls with a diameter of 100 m or less



This is a highly viscous flux product mainly used with solder balls. It provides excellent ball retention and solderability.



A unique low-temperature soldering solution that integrates materials, equipment, and methods. It contributes to carbon neutrality.



**Used solder amount** 

We will contribute to building a sustainable society by working towards a zero-emission society through our business activities.



3D / Fine connections

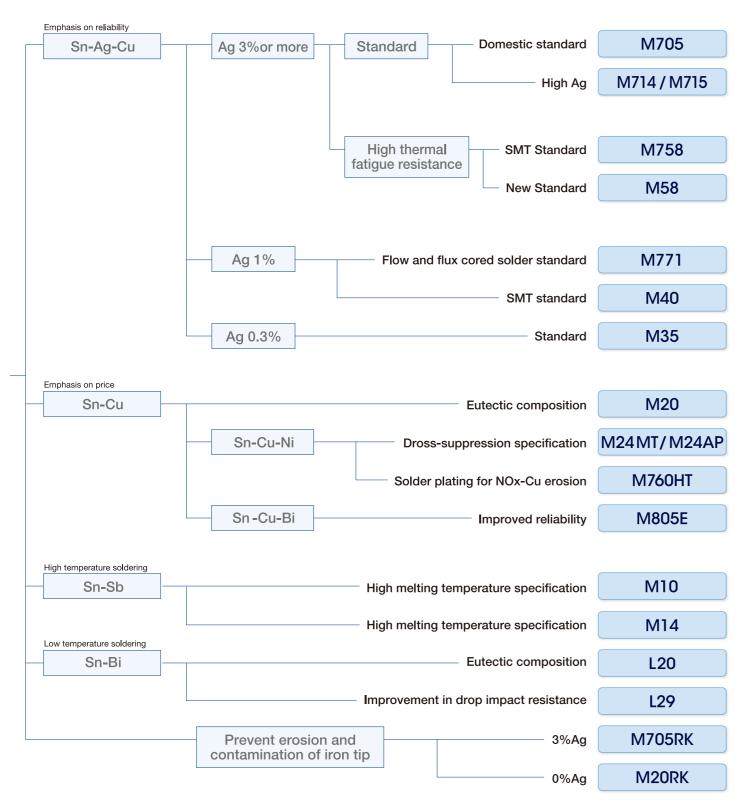
SMIC SOLDERING MATERIALS CATALOGUE 2

M705





We offer an extensive product lineup for customers to choose from according to their requirements.



		Melting temperature(°C)			Form					
	Alloy composition(wt%)	Solidus line	Peak	Liquidus line	BAR	PASTE	FLUX CORED	PREFORM	BALL	Overview
		lii le		ECOSC	LDER		CONLD			
M705	Sn-3.0Ag-0.5Cu	217	219	220	•	•	•	•	•	
M31	Sn-3.5Ag-0.75Cu	217	219	219	•	•	•	•	•	Pb-free
M714	Sn-3.8Ag-0.7Cu	217	219	220	•	•	•	•	•	general-purpose
M715	Sn-3.9Ag-0.6Cu	217	219	226	•	•	•	•	•	solder alloys
M710	Sn-4.0Ag-0.5Cu	217	219	229	•	•	•	•	•	
M771	Sn-1.0Ag-0.7Cu	217	219	224	•	•	•	•	•	
M35	Sn=0.3Ag=0.7Cu	217	219	227	•	•	•	•	•	
M20	Sn-0.75Cu	227	229	229	•	•	•	•	•	
M24MT	Sn-0.7Cu-Ni-P-Ge	228	230	230	•	•	•	•	•	Low Ag/No Ag solder alloys
M24AP	Sn-0.6Cu-Ni-P-Ge	227	228	228	•	•	•	•	•	
M805E	Sn-0.3Bi-0.7Cu-P	225	229	229	•	•	•	•	•	
M40	Sn-1.0Ag-0.7Cu-Bi-In	211	222	222		•	•	•	•	
M814	Sn-3.4Ag-0.7Cu-Bi-Sb-Ni-Co	201	222	222	•	•	•	•	•	
M58	Sn-3.4Ag-0.7Cu-Bi-Sb-Fe-Co	210	221	221	•	•	•	•	•	
M731	Sn=3.9Ag=0.6Cu=3.0Sb	221	224	226	•	•	•	•	•	High reliability solder alloys
M716	Sn=3.5Ag=0.5Bi=8.0In	196	208	214		•	•	•		,
M725	Sn=0.7Cu=Ni=P	228	230	230	•	•	•	•	•	
M10	Sn-5.0Sb	240	243	243	•	•	•	•	•	Solder alloys
M14	Sn-10Sb	245	248	266	•	•	•	•	•	for power
M754	Sn-0.6Cu-7Sb	235	239	242	•	•	•	•	•	semiconductors
M709	Sn=0.5Ag=6.0Cu	217	226	378	•					Solder alloys for
M760HT	Sn-5.0Cu-0.15Ni-P-Ga	228	229	365	•					terminal processing
M770	Sn-2.0Ag-Cu-Ni	218	220	224	•	•	•	•	•	
M850	Sn-3.5Ag-0.8Cu-Bi-Ni-Co-Ge	217	221	221	•	•	•	•	•	Highly reliable
M758	Sn-3.0Ag-0.8Cu-Bi-Ni	205	215	215		•	•	•	•	solder alloys for semiconductor
M832	Sn-3.5Ag-0.8Cu-Bi-Ni	203	214	214		•	•	•	•	PKG
M807	Sn-3.5Ag-0.8Cu-Bi-Ni	214	219	219		•	•	•	•	
M705RK	Sn-3.0Ag-0.5Cu-Fe-Zr	219	221	221			•			Flux cored solder
M20RK	Sn-0.75Cu-Fe-Zr	227	229	229			•			alloys to prevent iron tip corrosion
M35RK	Sn=0.3Ag=0.7Cu=Fe=Zr	217	219	227			•			iron tip corrosion
				MILAT	TERA					
L20	Sn-58Bi	139	141	141	•	•	•	•	•	
L23	Sn-57Bi-1Ag	138	140	204	•	•				Low tomporation
L27	Sn-40Bi-Cu-Ni	139	140	174		•				Low temperature solder alloys
L28	Sn-35Bi-Cu-Ni	141	143	182		•				
L29	Sn-58Bi-Sb-Ni	140	145	145		•				

Peak temperature: Endothermic peak on a DSC (Differential Scanning Calorimetry) curve
Some alloy compositions may not be available in certain forms with special product size and grade.
For inquiries regarding alloy compositions not listed, contact our sales representative or visit our website (https://www.senju.com/).

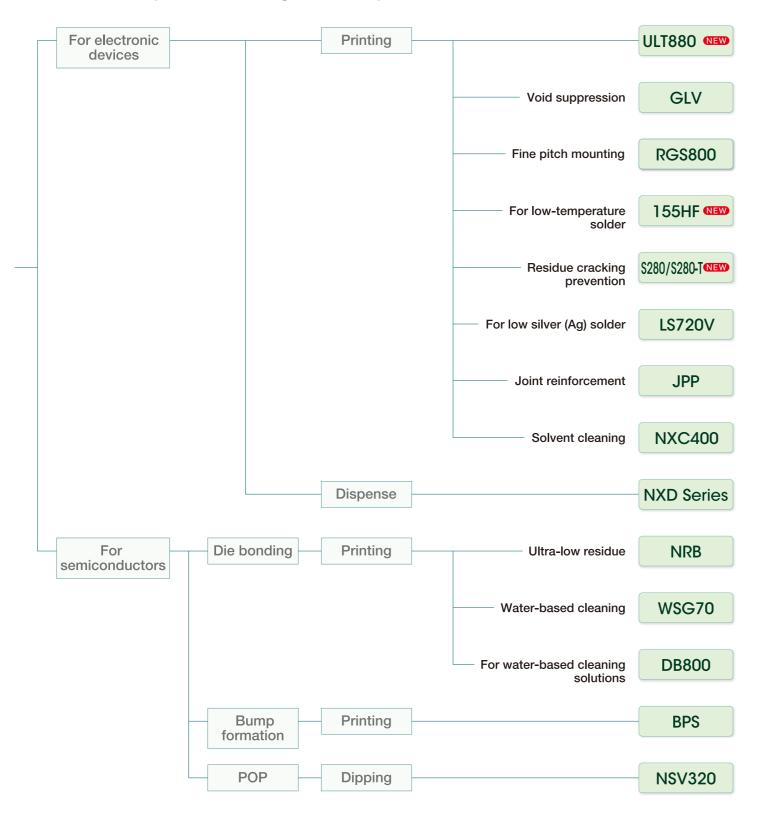
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Sb	Cu	Bi	Zn	Fe	Al	As	Cd	Ag	ln	Ni	Au	Pb
0.07 or less	0.05 or less	0.05 or less	0.001 or less	0.02 or less	0.001 or less	0.03 or less	Less than 0.002	0.03 or less	0.02 or less	0.01 or less	0.005 or less	Less than 0.05

## **SOLDER PASTE**

Solder paste is a product made by mixing fine solder alloy powder and flux components

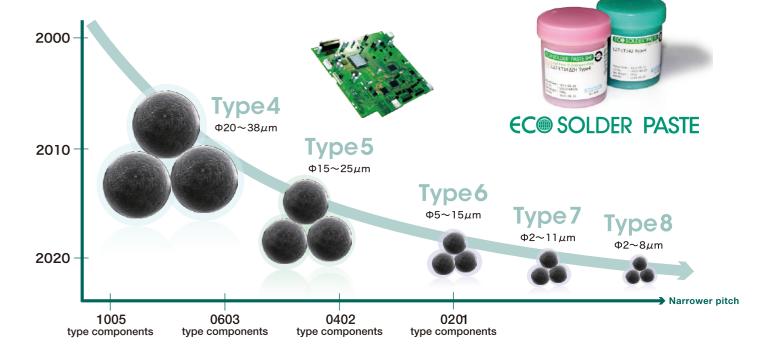


## Select the best solder paste for your purpose and application in the development of next-generation products

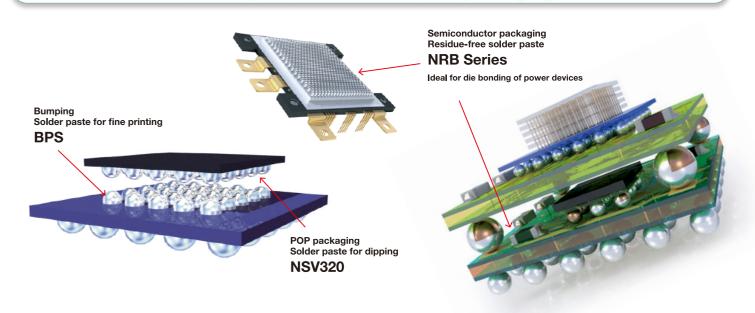


#### ■ Development of new fluxes for finer powders

The finer the powder, the greater the surface area and the greater the amount of oxidation, requiring high-activity fluxes that suppress re-oxidation during reflow.



#### Solder paste for semiconductor packaging







## **FLUX CORED**

Flux-cored solder is a wire solder that has flux in the center of the wire



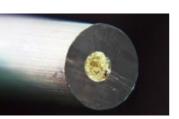
## **POST FLUX**

Post flux is a liquid mixture of rosin and other resins with activators and solvents



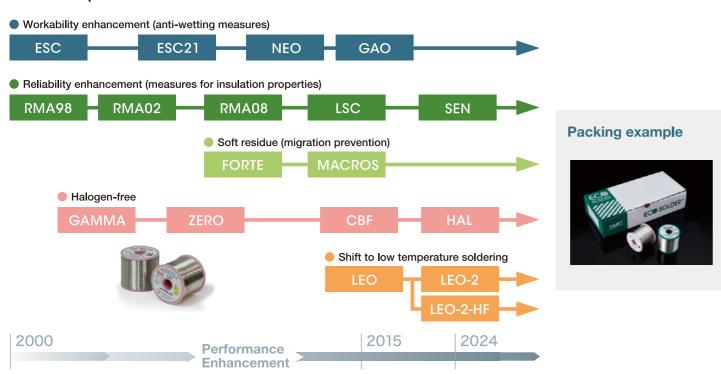
We are continuing to develop a diverse product lineup of flux-cored solders.

Select the type that best suits your purpose and application

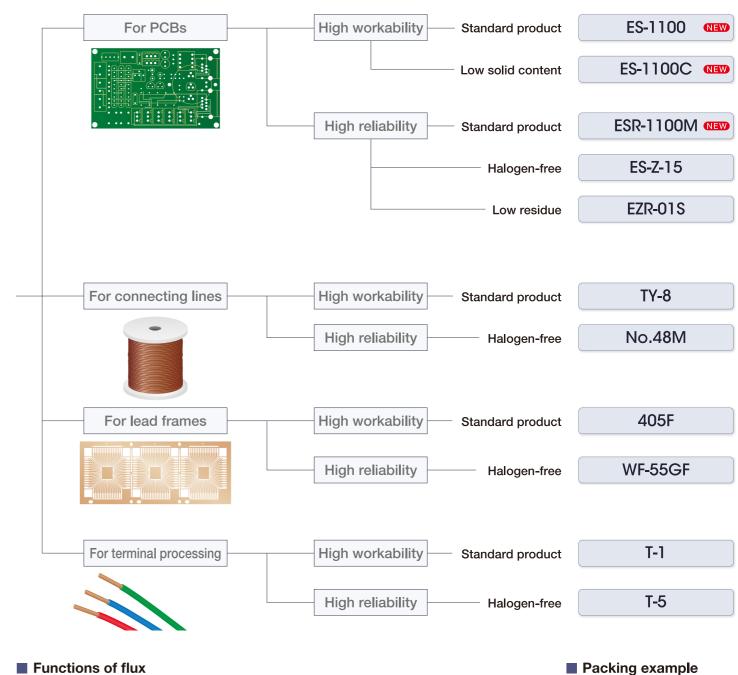


Туре	Factoria	FLUX	Flux Type	Adaptation method				
Туре	Feature	FLUX	IPC J-STD-004C	Soldering	Robot	Laser heating	Sleeve heating	
	Emphasis on wetting speed	GAO-WR	ROL1	0	0	0	_	
High	Emphasis on finish	GAO-ST	ROM1	0	0	_	-	
workability	Low fumes	GAO-LF	ROM1	0	0	_	0	
	For low-temperature soldering	LEO-2	ROL1	0	0	_	-	
	Standard	SEN	ROL1	0	0	0	0	
High	Residue cracking suppression	MACROS	ROL1	0	0	0	-	
reliability	Halogen free	HAL	ROL0	0	0	0	0	
	Low temperature soldering / Halogen free	LEO-2-HF	ROL0	0	0	_	_	

#### ■ Road map to lead-free and flux-cored solder

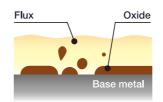


#### Select the most effective product for soldering based on your application and purpose

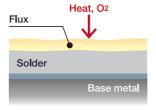


Flux

#### **■** Functions of flux



1. Surface cleaning Isolates oxides on metal surface.



2. Prevention of reoxidation Creates thin film between air and solder to protect solder and base metal surface.

Reduced



3. Wettability enhancement Reduces surface tension and enhances spreading through capillary action.

## **SOLDER PREFORM**

Solder alloys worked into various shapes to achieve effective soldering



#### Supporting the future of solder packaging with a diverse product lineup

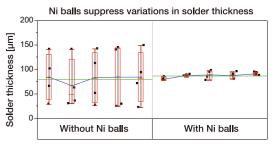
■ In addition to solder alloy composition, shape, and dimensions, each of the five processing shapes can be selected to achieve a variety of synergies with Solder Preform.

	Single Layered	Ni Balls Contained	Flux Cored	SI	hape	
Ribbon				L T W	W Width Min = 0.5mm Max = 70mm  T Thickness Min = 0.05mm Max = 0.35mm	L Length  Please ask about this specification.
Square				SIDE A T	SIDE A  Min = 0.5mm Max = 100mm  T Thickness  Min = 0.05mm Max = 2.5mm	SIDE B Min = 0.5mm Max = 70mm
Disc		•		T OD	OD Outer Diameter  Min = 0.3mm  Max = 62mm	T Thickness  Min = 0.05mm  Max = 2.5mm
Washer				T OD OD	OD Outer Diameter  Min = 1.2mm  Max = 40mm  W Width  Min = 0.05mm  Max = 2.5mm	ID Inner Diameter  Min = 0.6mm  Max = 35mm  • Processing condition (OD-ID)÷2≥T
Chip	•			SIDE A T SIDE B	SIDE A  Min = 0.6mm Max = 3.2mm  T Thickness  Min = 0.3mm Max = 1.6mm	SIDE B Min = 0.3mm Max = 1.6mm

\*Min. and Max. processing dimensions depend on alloy composition and type. Contact our sales department for details.

#### Effect of pellets containing Ni balls





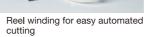
Solder thickness at each measured location

#### ■ Applying shape characteristics to packaging applications



A tape-like preform wound on a reel can be cut into desired shapes just before mounting



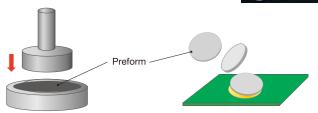




#### Disk

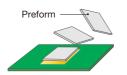
Supplies the solder alloy of the same shape as that of the soldering location



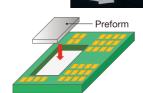


#### Square

Supplies the soldering location with a fixed amount of solder within a given tolerance range



Enables identification by matching the pad shapes of substrates and

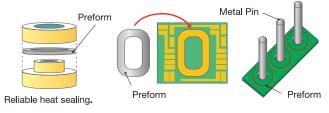


Feeding to where it's difficult to supply solder paste and flux cored solder.

#### Washer

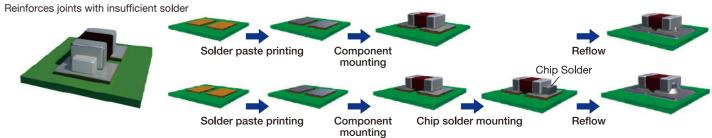
Ensures reliable heating and melting of difficult-to-p paste areas and prevents unven heating



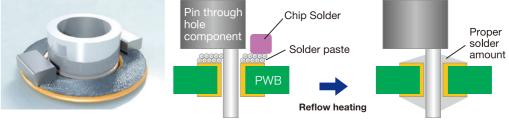


#### Chip

Automatic mounting is possible with chip mounters



Joint reinforcement of pin thru-hole components using reflow





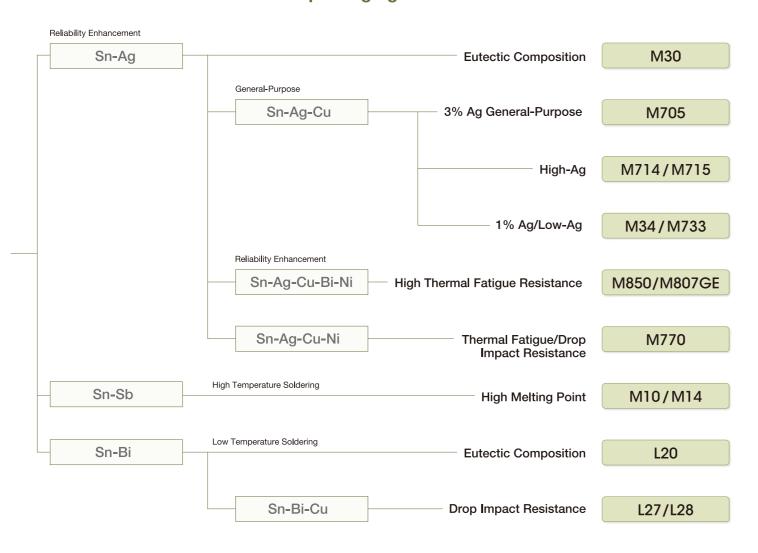


## **SOLDER BALL**

Solder balls are highly spherical balls with guaranteed dimensions and tolerances



## Various compositions and ball diameters are available to support state-of-the-art semiconductor packaging



#### LAS Solder Ball protects Products from "Soft Errors"

Trace amount of alpha rays or cosmic rays discharged from solder materials or semiconductor materials may rewrite memory data, which is called "soft error." In particular, flip chip package is highly sensitive to soft errors, and reduction of alpha rays is required for solder materials or other electronic packaging materials. LAS solder ball is material meets this requirement.

■ Standard specification product
Diameter : 40 to 120 µm
Alpha count : 0.002 cph/cm² or less
Composition : M705 M200



#### ■ TCT and drop test with CSP

CSP TEST Condition

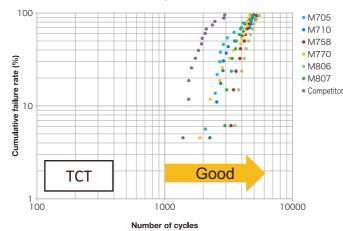
Size: 12 x 12 mm [TCT]

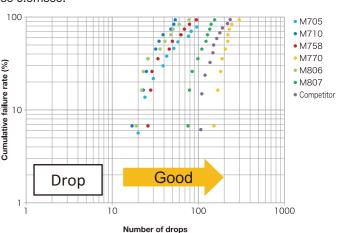
SRO: 0.24mm Temperature Cycle: -40°C/+125°C each 10min

Pitch: 0.5mm

Ball: 0.3mm [Dro

S/F : Cu Impact acceleration : 1500G/Half-sine pulse 0.5msec.





#### ■ TCT and drop test with WLP

WLP TEST Condition

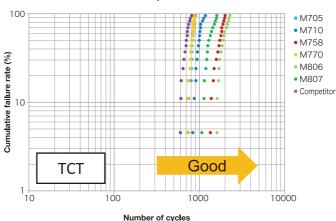
Size: 7 x 7 mm [TCT]

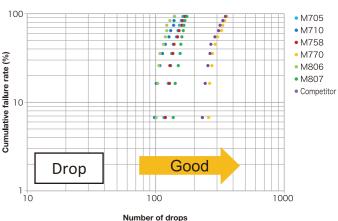
SRO: 0.24mm Temperature Cycle: -40°C/+125°C each 10min

Pitch: 0.5mm

Ball: 0.3mm [Drop]

S/F: Cu Impact acceleration: 1500G/Half-sine pulse 0.5msec.

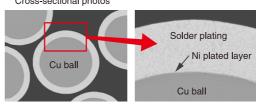




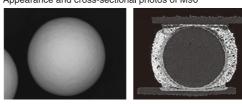
#### **Cu Cored Ball**

Advanced plating technology easily secures space in 3D soldering

#### Cross-sectional photos

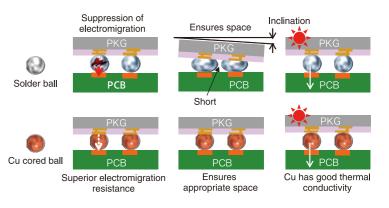


Appearance and cross-sectional photos of M90

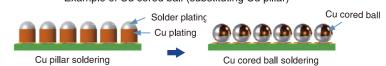


M90 improves drop impact resistance through reforming of the joint interface by Ni in the Ni plating.

#### ■ Features



Example of Cu cored ball (substituting Cu pillar)

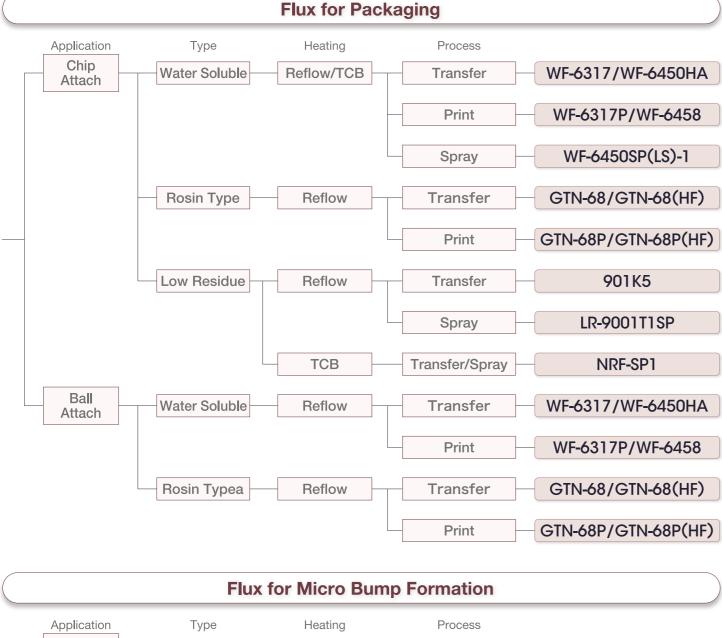


11 SMIC

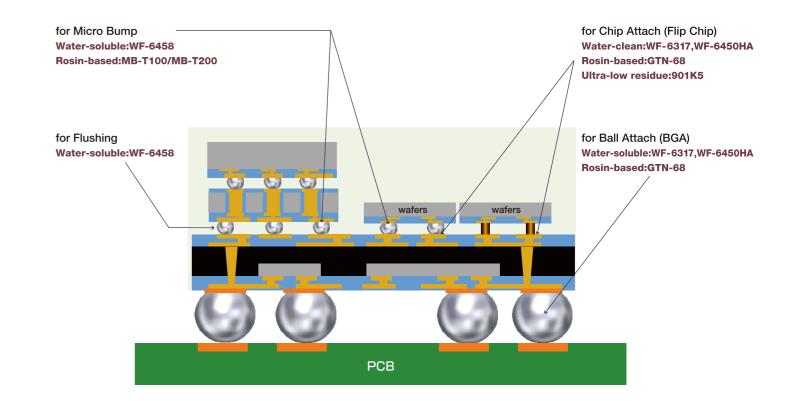
## FLUX for SEMI-CONDUCTORS

Semiconductor flux is a liquid mixture of rosin or other resins, with activators, and solvents

#### Select the most effective product for soldering based on your application and purpose

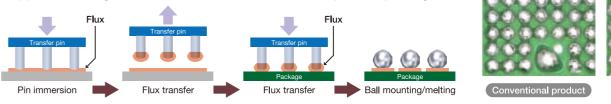


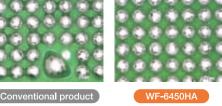
#### Micro Ball Water Soluble Reflow Print WF-6458 Attach Print MB-T100/MB-T200 Rosin Type Reflow SPK-3420 Fusing Water Soluble Reflow Spray/Spincoat Spray/Spincoat 7200A Reflow Rosin Type



#### WF-6450HA

#### Suppresses bridge even at ball attachment to narrow-pitched package

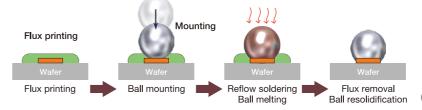




#### MB-T100

#### Highly-activated MB-T100 reproduces dent-free spheres when balls are resolidified

Highly-activated and exhibits high heat resistance, and can be cleaned with semi-aqueous cleaning solution. A halogen-free product is also available.









#### SPK-3420

#### SPK-3420 forms even spherical bumps, and flux residue can be removed by water-cleaning

Halogen-free flux that can be easily removed by water-cleaning even after high-temperature reflow soldering.





# Low-temperature Soldering Solutions that Contribute to Carbon Neutrality in the Environment, MILATERA

To a future leading to  $\Delta t80^{\circ}C$ 

Soldering requirements have changed with the times, and SMIC's low-temperature soldering solution "MILATERA" is the answer.

We provide "MILATERA" to the customers in a three-part system which includes materials, equipment, and our soldering method. Solders with a melting point about 80°C lower than conventional solders allows for low-temperature mounting.

This new carbon-neutral option reduces significant burdens, costs, and CO<sub>2</sub> emissions throughout the supply chain.

SMIC is aiming for a future where manufacturing is done while considering both people and the environment.

Through our technology and passion, we will pave the way for various possibilities as partners in ushering in a bright future nurtured over more than 80 years.

Reducing temperature can reduce other factors and lead to positive outcomes.

That's why the reduction by SMIC's "MILATERA" will lead to a positive future. The warmheartedness of our customers and partners who support this initiative will help to lower the earth's temperature.

We want to deliver next-generation mounting technologies that will lead to a brighter future for both companies and society.

Wave soldering

**Reflow soldering** 

**Manual soldering** 



BITHUS-Wave



Flux mixing machine MTM-4L



**TABLUX** 



MILATERA BAR



MILATERA PASTE



**MILATERA FLUX CORED** 

## **NEW BITHUS-Wave MTF series**

#### Adapted to the challenges of low-temperature wave soldering



#### [Features]

- Newly developed proprietary mechanism adapted to low-temperature soldering
- Possible reduction of CO<sub>2</sub> emissions during production by 15% or more
- Confirmed high joint reliability and sufficient shock resistance after soldering



RK Nozzle that inhibits dross adhesion for superior solderability

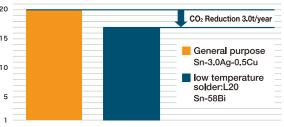


Air Curtain Quenching System for reliable solder solidification



SY Cutter that enables dross reuse

#### **CO₂** reduction calculation



Solder type		General purpose Sn-3.0Ag-0.5Cu	low temperature solder:L20 Sn-58Bi	Reduction amount	unit	Reduction rate
Ele	ctric energy	57,024	48,384	▲8,640	kWh/year	-15.15%
CO	D <sub>2</sub> nissions	20.01	16.98	▲3.0	t/year	-15.14%

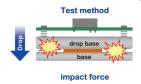
#### High joint reliability



PCB	Consumer-use PCBs
Observation target	Power relay components
Test conditions	After 2,000 cycles or more at -50/85°C, 30 min each

No breakage even after 100 drops at 1,500 G

No cracks leading to breakage







Fillet surface

Fillet cross section

	MTF-300	MTF-400
Dimensions (L×W×H)	4,340 × 1,340 × 1,540 mm	4,340 × 1,340 × 1,540 mm
Conveyor height	780±20 mm	780±20 mm
Conveyor Speed	0.5 - 2.0 m/min	0.5 - 2.0 m/min
PCB dimensions (W×L)	50 × 100 - 300 × 450 mm	50 × 100 - 400 × 450 mm
Component height(highest)	≦100mm, ≧5mm	≤100mm, ≥5mm
Preheater (heated zone length)	1,600 (400/zone×4) mm	1,600 (400/zone×4) mm
Solder pot capacity (approx.)	460kg(L20,Sn-58Bi)	460kg(L20,Sn-58Bi)
Power requirement	200V approx 32 5kW 100A 3-phase	200V approv 32 5kW 100A 3-phase

## Flux mixing machine MTM-4L·TABLUX

### Streamlining Flux Transportation and Storage and Contributing to Carbon Neutrality



Flux mixing machine MTM-4L

#### [Features]

- Solidified flux can be handled as a non-hazardous material
- Easy to produce the required amount of flux at the customer's site
- Solvents are procured through customer-accessible sources



Resin-based solid flux **TABLUX** 

	MTM-4L
Dimensions (L×W×H)	830×600×1,319mm
FLUX production capacity	4 L
Settable solvent capacity	18L
Stirring control	speed control motor
Power requirement	3-phase, AC 200V, 1KvA

#### New proposal for flux supply













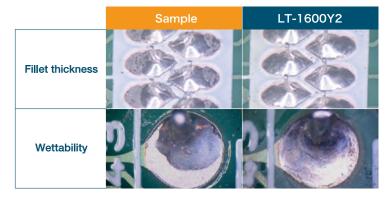


## **NEW POST FLUX LT-1600Y2**

Adapted to the challenges of low-temperature wave soldering using molecular analysis technology

#### [Features]

- Optimized viscosity ensures good fillets
- Optimized flux activity at low temperatures ensures high wettability



## **Reflow soldering**

#### **MILATERA PASTE 155HF series**

CO₂ reduction calculation

#### Adapted to the challenges of low-temperature reflow soldering

- [Features] Resolves challenges unique to low-temperature soldering with proprietary technology
  - CO₂ emissions can be reduced by 22% or more by lowering the packaging temperature
  - Product lineup suitable for various applications

**▲1.6** 

CO<sub>2</sub> Reduction 1.6t/year

■ low temperature solder:L20

▲5,088 kWh/year -22.27%

t/year -22.28%

## L20.L23. L28,L29

**MILATERA PASTE 155HF series** 

	Particle size	Type4,Type5
Flux	type	155HF
riux	IPC classification	ROL0
	viscosity	180Pa.s
1	Warranty	6 months

## Stencil thickness: : 0.12mm Pad size : 0.46mm :Cu-OSP BGA size BGA ball composition :SAC305 BGA ball size :Φ0.4mm 155HF

#### Feature Comparison Chart



L29-155HF Sn-Ag-Cu paste

## Manual soldering



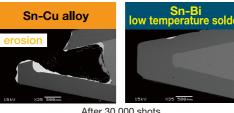
#### **MILATERA FLUX CORED LEO-2 series**

#### Achieved mass production supplies ahead of the rest of the industry

[ Features ] • Established mass production technology for flux-cored solder with Sn-Bi solder, which is difficult to process

- Significantly reduced soldering iron tip wear
- Product lineup suitable for various applications

#### Soldering iron tip corrosion test results



#### MILATERA FLUX CORED LEO-2 series

adaptation	L20		
type	LEO-2	LEO-2-HF	
Content	2%	2%	
IPC classification	ROL1	ROL0	
Halide content	0.1%or less	0.02% or less	
temperature	280-380°C		
	type Content IPC classification	type LEO-2 Content 2% IPC classification ROL1 Halide content 0.1%or less	

After 30,000 shots

## Carbon neutrality in metal mining, refining, and packaging In melting **SMIC** In raw material production Scope 2 In the packaging process Customers using solder

#### Recycling and Environmental Support

#### ■ SMIC Group's Solder Recycling System

In cooperation with TAK-G, our affiliate company, we have been recycling solder for about 40 years. With the emergence of lead-free solder in the 2000s, an old era with two elements, tin and lead, into a new era with three elements, tin, silver, and copper. Today, we use more elements. Because of this development, it was required to install facilities to deal with multiple elements for recycling solder. As a result, we developed special technology that limited the emergence of hazardous materials to the absolute minimum and a solder recycling system that could reproduce high-purity solder in our own refining method. The importance of recycling solder is increasing nowadays, and the amount of recycling has doubled in the last few years, and this is expected to continue. We have assumed responsibility as a material manufacturer prior to the era when mineral recycling became popular. We will continue to actively promote investment in human resources and technological innovation toward further development of a system in which we collect the used solder products of our company and recycle them and the realization of recycling solder with multiple elements in order to achieve a sustainable society with effective utilization of limited mineral resources and the control of air pollution.

#### **Recycled Material Usage Rates**



#### Recovery







#### Reuse





Reclamation





#### **Reduction of Harmful Chemicals**

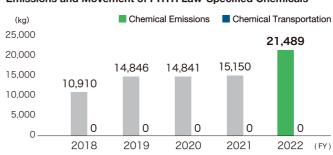


Our development, purchasing, manufacturing, and environmental departments manage chemical substances based on our environmental management system to protect our health and the environment and to realize safe and secure social life. In particular, per our plans we are implementing a reduction or prohibition of the use of chemicals that have a large environmental footprint. We also define reduction goals every year and make focused efforts.

#### Emissions and Movement of PRTR **Law-Specified Chemicals**

We comply with the PRTR law to track the amount of applicable substances we handle, emit, and transport.

#### **Emissions and Movement of PRTR Law-Specified Chemicals**



#### Soil and Groundwater Pollution Countermeasures

We are taking the following initiatives as soil and groundwater pollution countermeasures. We also work to prevent pollution by conducting emergency response drills, as well as risk training to prevent leaks of polluted water.

Soil	Voluntary component analysis (once per year)
Water quality and Groundwater	Final drain and groundwater inspections (chlorine residue, pH, etc. conducted daily) Component analysis and measurement of drain water and groundwater (conducted monthly)
Rainwater	Voluntary component analysis (twice per year)



## The Realization of a **Stable Supply Chain for the SMIC Group**

The SMIC Group has established a system to ensure a stable supply for its customers in Japan and around the world in order to ensure a solid foundation for a stable supply. In 2022, we faced challenges in manufacturing at our overseas group companies due to flooding and urban lockdown, but we were able to continue supplying our customers thanks to the systems we had in place. We are operating a BCP to ensure that we can fulfill our responsibility to supply our customers even in the event of unforeseen circumstances.

#### COMPANY PROFILE

#### SENJU METAL INDUSTRY CO., LTD. / SMIC GROUP

DUNS# 690663091

**ESTABLISHED** April 15, 1938

**HEADQUARTERS** 23 Senjuhashidocho, Adachi-ku,

**ADDRESS** Tokyo 120-8555 PRESIDENT Ryoichi Suzuki

#### **BUSINESS SCALE**

CAPITAL (SIMPLE)

REVENUE(CONSOLIDATED)

¥96.846 million

(April 1, 2022 - December 31, 2022)

¥400,000,000

EMPLOYEES (CONSOLIDATED) 2,204 (As of December 31, 2022)

#### **BUSINESS PORTFOLIO**

- ·Smelting, alloying, casting, and expansion of metals, manufacture and sale of processed goods
- ·Manufacture and sale of metal powders and bearings
- ·Manufacture and sale of solvents and adhesives for soldering
- ·Manufacture and sale of soldering equipment
- •Manufacture and sale of fire extinguishing equipment (affiliated company business)
- •Manufacture and sale of machinery related to the above businesses
- ·Internal dispatch business

#### Segments in Japan













Chubu Segment Seto

Kansai Segment Nishiwaki

#### LIST OF MAJOR AFFILIATED COMPANIES

#### JAPAN

Industrial Analysis Service Ltd. Senju Sprinkler Co., Ltd. Senju Electronic Corp. Senju Giken Co., Ltd. Senju System Technology Co., Ltd.

#### AMERICA

Senju America Inc. Senju Comtek Corp. Senju Fire Protection Corp.

#### EUROPE (GERMANY, CZECHIA)

Tianjin

Shanghai

Huizhou

Hong Kong

Malaysia

Seniu Metal Europe GmbH Senju Manufacturing Europe s.r.o.

#### ASIA

Senju (Malaysia) Sdn. Bhd. Senju Trading (M) Sdn. Bhd. Senju (Thailand) Co., Ltd. Senju Solder (Phils.) Inc. Beijing Senju Fire Fighting Equipment Co., Ltd. Senju Metal (Tianjin) Co., Ltd.

Tianjin Senju Electronics Co., Ltd.

**JAPAN** 

Shanghai Senju Business Management Consulting Co., Ltd.

Senju Metal (Shanghai) Co., Ltd.

Senju Metal (Huizhou) Co., Ltd.

Senju Metal (Hong Kong) Limited

Senju Electronic Materials (Hong Kong) Co., Ltd.

Senju Electronic (Taiwan) Co., Ltd.

Senju Metal Industry Co., Ltd. Kaohsiung Branch Senju Metal Korea Co., Ltd.

#### **Affiliated Companies in Japan**













We created an official Instagram account.