

# SOFT SOLDER

## PRODUCTS AND EXPERTISE IN SOLDERING

- since 1947 -



SOLDER WIRES

WAVE SOLDERING/  
SELECTIVE SOLDERING

SOLDER DIPPING

PLUMBING AND SANITARY  
INSTALLATIONS/OTHER

SOLDER PREFORMS

SOLDER PASTE PRINTING

SOLDER PASTE DISPENSING/  
JET PRINTING PROCESS



The tin based solder preforms are customised parts for specific end customer applications. MBO offers a wide range of preformed solder shapes in tape and reel packaged dedicated to automated assembly or for manual use in bulk packaging.

**Preforms are available in various shapes :**

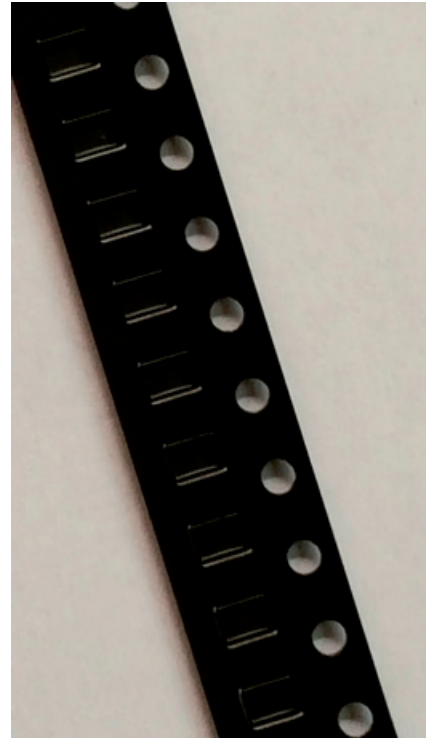
- Ribbon
- Discs, washers
- Squares, rectangles, hexagons

They are produced in several alloys (alloy composition should be validated by MBO engineering department). We offer also preforms with incorporated flux or without flux. Preforms are best used for assembly production especially in applications difficult to access with soldering irons or standard reflow process.

Areas of application where preforms can be of benefit:

- Passive and active components
- Power components (capacitor and fuse)
- Connector pins and receptacles

**Our engineering department will calculate and recommend the best solder preform in order to fulfill your requirements.**



# Solder wires

Solder wire = Alloy + flux

Alloy	Melting point (°C)	
	Solidus	Liquidus
Sn95,5Ag3,8Cu0,7 (SAC 387)	217	Eutectic
Sn96,5Ag3Cu0,5 (SAC 305)	217	220
Sn99Ag0,3Cu0,7 (SAC 0307)	217	227
Sn96,5Ag3,5	221	Eutectic
Sn100	232	Eutectic
Sn97Cu3	227	310
Sn99,3Cu0,7	227	Eutectic
Sn99CuNiGe <span>N</span>	227	Eutectic
SIA® <span>N</span>	-	189
Sn99Cu SP	227	Eutectic
Sn99Cu SP PLUS	227	Eutectic
Sn63Pb37	183	Eutectic
Sn60Pb40	183	190
Sn50Pb50	183	215
Sn40Pb60	183	238
Sn50Pb49Cu	183	215
Sn60Pb38Cu	183	190
Sn62Pb36Ag2	179	Eutectic
Pb70Sn30	183	255
Pb90Sn10	268	302
Pb93,5Sn5Ag1,5	296	301
Sn50Pb32Cd18	145	Eutectic
Sn43Pb43Bi14	144	163
Other on request		

Lead-free alloy Lead alloy

## Solder wire applications



### Applications :

- Soft soldering on printed circuits, soldering of any type of component
- Soldering of power components, of electromechanical parts
- Connectors soldering
- High and low melting point solders are also available to support your specific process
- RoHS lead free solders

### Available flux (J-STD-004 classification)

Classification	MBO cored flux
ROL0	R45*, A0*, R1*, RT15*, FXN*, EL, Ri, <b>RZ N</b>
ROL1	CT2, <b>ROB*</b>
ROM1	A11*, CR, RD, RJ10, CMA, RL
REL0	S45V*, LSO*
ORL0	HY0, JARY, ORG, ORG H
ORM1	HC1, HC2
INH1	HC3
	* = NO CLEAN Flux
<b>ROB</b> : flux dedicated to robot application	

### Flux pen

Developed for manual soldering applications and rework.

Fine pitch application and no clean.

Available flux : **FXL248**, **EXEL 314** (others on request).

### RZ: N

Flux dedicated to solder on zinc substrate.  
Mainly recommended in capacitors industry.

The solder wires may be solid or flux cored. Wire Diameter: from 0.2 to 6mm.

### Supplied on:

- DIN spool from 10g to 20kg
- Drums: from 10kg to 50kg



# Solder dipping

**Dipping is an operation which consists in applying a layer of tin to a metal part.**

The coating is deposited by immersion of the part in a tin bath in fusion. In industry, tinning is mainly used in the electric field and electronics to ensure protection against corrosion of the part (in particular for copper parts), to

offer good electric conductivity and to improve the wettability of the part. **MBO** has of a wide range of alloys and fluxes adapted to the dipping process.

Current alloys (**see table of solder wires**). In addition we offer alloys with special additives suitable for use at higher temperatures. (**HT** version)

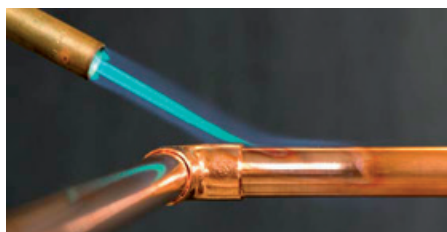


Flux dedicated to dipping			Water soluble residues				
	Alcohol base	Low residues	Water base		Water cleanable residues		
	Rosin	Organic	Organic	Inorganic	Organic		
J-STD-004 Classification	ROL0	ORLO	ORLO	INH1	ORL1	ORM1	ORH1
	TC 325	50S2AMS FXL 880 PB	HYDREXEL 302 LF-H	ME11 PR 303 FA 502	H32M H35M H350M	H351M H352M	H330M

Packaging: plastic containers of 1, 5, 10 and 20 liters



## Plumbing and sanitary installations / Other



**MBO also offers soldering products for the applications of plumbing (assembly of piping) and mechanical assembly (soldering of Stainless parts for example).**

Flux gel or solder paste strongly activated are highly recommended. These consumables are water

soluble and the residues are water cleanable. Liquid fluxes strongly activated are also available in 5, 10 and 20 liters containers: **Z60, PR303, ME11** liquid flux...

Other products are also available according to customer specifications.

### Aluminium soldering:

**HAX 20** = flux gel

Solder wire = coming soon...





# Wave soldering / selective soldering

## MBO Alloys:

- Manufactured by selecting highest purity base metals and by using virgin materials.
- Produced in a rigorously controlled process to ensure the lowest oxide level.
- Alloy composition checked by ICP- AES.

For the current alloys, go to solder wires section to find the requested alloy in the table.

## Alloy forms:

- Bars, ■ Ingots, ■ Sticks, ■ Solid wires, ■ Pellets,
- Domes

Desoxidising tablets (**DESOXY SP** and **DESOXY SP PLUS**) are available to reduce the surface oxydation of the solder bath (Contact **MBO** team to select the right part compatible with your solder bath)

## Lead free Alloys

- Different alloys are available (**SAC305**, **SAC387**, **SAC0307**, **Sn99Cu**, **Sn97Cu3**, **Sn95Sb5**)
- Lead free alloy without any silver content : **Sn99CuSP PLUS** "high performances".

**N SIA®** : lead free alloy that fully replaces the Tin Lead (Sn63Pb37 and Sn60Pb40) in all performances.  
More details on website: [www.mbosolder.com](http://www.mbosolder.com)



	Alcohol base			No clean and low residues		Water cleanable residues
	Rosin			Rosin	Organic	Organic
J-STD-004 Classification	ROL0	ROL1	ROM1	ROL0	ORL0	ORL0
	BC 250	BC 156 BC 310 BC 310.15 BC 310.35 FR 601 FR 719 CMS 2020	BC 340	BCX5M FXL 248	40S2, 40S2A, 40S2AM, 40S2S 50S2A, 50S2AMS MBO 45 LF 40, LF 50-SMT(S) EXEL 112 SO, EXEL 314 EXEL 600, EXEL LF 7 EXEL LF 7 FXL 880 PB	WBF02T WBF04T HYDREXEL 302 LF HYDREXEL 103 LF HYDREXEL 107 <b>WATER-RISE 1 N</b>

Thinners are used with MBO flux to stabilize the alcohol based flux density (**D40S**, **D30S**, **FD80**).

## Solution to protect surface from solder : Peelable mask

Used to temporarily protect areas of the PCB or components from the adhesion of solder.

Formulated with natural latex

### ■ MSP75

### ■ MSP75 Opaque

### ■ MSP75 neutral

### ■ MSP R93-B

**SPEED** version is also available to reduce drying time of 20%.

Available in 250ml bottle and 5kg drum.

## Advantages

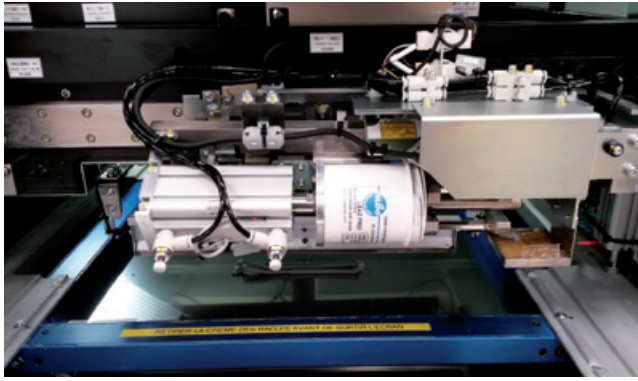
- Alcohol base
- Low rosin content
- Suitable for lead and lead free process

- Alcohol base
- Halide free
- Tests passed due to no rosin content

- Non dangerous product > Easy to handle for transportation
- Full water base flux, VOC free
- Suitable for wave soldering and selective soldering process
- Tests passed due to no rosin content
- Compatible with spray and foam process
- No required density control



# Solder paste printing



<sup>1</sup>for higher temperatures Pb92,5Sn5Ag2,5

Activated version (**RA**) available upon request (**ROL1** classification).

**N RSN 70**: chemical part that allows best in class printing.

No clean	No Clean	Water soluble
Lead free	Lead	Water cleanable residues
ROLO	ROLO	ORLO
<b>RSN 70 LF</b> <b>N</b>	<b>RSN 70</b> <b>N</b>	
SIRIUS 1 LF	SIRIUS 1	CASCADE 1LF-C
ORION 410	ORION 410	CASCADE 1
410	410	
	TITANT HT 12 <sup>1</sup>	

Alloy	Melting point (°C)	
	Solidus	Liquidus
Sn95Sb5	235	240
Sn96.5Ag3.5	221	Eutectic
Sn96.5Ag3 Cu0.5	217	220
Sn95.5Ag3.8Cu0.7	217	Eutectic
Sn99Ag0.3Cu0.7	217	227
Sn98.5Ag0.8Cu0.7	217	224
Sn99CuSP	227	Eutectic
<b>SIA®</b> <b>N</b>	-	<b>189</b>
<b>SnBi plus</b> <b>N</b>	<b>139</b>	<b>187</b>
Sn43Bi57	139	Eutectic
Sn42Bi57,6Ag0,4	139	Eutectic
Sn42Bi57Ag1	139	Eutectic
Sn62Pb36Ag2	179	Eutectic
Sn63Pb37	183	Eutectic
Pb92,5Sn5Ag2,5	296	301
Sn18Pb32Bi50	98	Eutectic
Other on request		

Lead-free alloy Lead alloy

IPC tests passed (SIR, Slump test, Tackforce, Copper Mirror, Solder balling test...)

## Available packaging:

- 250g, 500g jar
- From 500g to 1kg cartridge
- 2.5kg refill container
- Proflo cartridge



- No clean solder paste with low clear residues
- High speed printing
- Long life on screen
- Can be reflowed in air or under nitrogen
- Different activated versions are available
- Powder perfectly spherical and free from oxide
- MBO offers different powder sizes from **type 3 (25-45µm)** to **type 5 (15- 25µm)**. Other powder size available upon request.

Flux gel is suitable for use with soldering and SMD rework as well as other similar applications.

**MOB 39** and **FLT 396** flux gel are suitable for BGA component rework.

These flux gel are no clean and halogen free (**ROLO** according to **J-STD-004**) leaving low residues that are non-corrosive.

Supplied in syringes of 5g, 10g and in 100g, 200g, 400g and 1kg jar



# Solder paste dispensing / Jet printing process

No clean	No Clean	Water soluble
Lead free	Lead	Water cleanable residues
ROLO	ROLO	ORLO
RSN 70 LF Di <span>N</span>	RSN 70 Di <span>N</span>	CASCADE 1
SIRIUS 1 LF Di	SIRIUS 1 Di	
ORION 410 Di	ORION 410 Di	
721	721	
410	410	
ORION 41* JP <span>N</span>	TITANT HT 12 Di <sup>1</sup>	



<sup>1</sup> for higher temperatures melting point Pb92,5Sn5Ag2,5

\*means the viscosity can be adapted to the customer needs.

Activated version (**RA**) available upon request (**ROL1** classification). **SIRIUS 1 MD** dedicated for high temperature. **JP version dedicated to Jet printing process in type 6 (5-15µm).**

**N Jet printing process: Type 6 in SAC 305.**  
**Type 5 in low melting temperature alloy and in Tin Lead.**

Alloy	Melting point (°C)	
	Solidus	Liquidus
Sn95Sb5	235	240
Sn96.5Ag3.5	221	Eutectic
Sn96.5Ag3 Cu0.5	217	220
Sn95.5Ag3.8Cu0.7	217	Eutectic
Sn99Ag0.3Cu0.7	217	227
Sn98.5Ag0.8Cu0.7	217	224
Sn99CuSP	227	Eutectic
SIA® <span>N</span>	-	189
SnBi plus <span>N</span>	139	187
Sn43Bi57	139	Eutectic
Sn42Bi57,6Ag0,4	139	Eutectic
Sn42Bi57Ag1	139	Eutectic
Sn62Pb36Ag2	179	Eutectic
Sn63Pb37	183	Eutectic
Pb92,5Sn5Ag2,5	296	301
Sn18Pb32Bi50	98	Eutectic
Other on request		

Lead-free alloy    Lead alloy

- No clean solder paste with low clear residues
- Manual or automatic dispensing
- Can be reflowed in air or under nitrogen
- Different activated versions are available

MBO is offering different powder sizes from **type 3 (25-45 µm) to type 6 (5-15µm).**

## Packaging :

from 10g to 100g syringe  
 500g, 750g and 1kg cartridge



**MBO products are supporting the following standards :**

- Alloy : **ISO 9453**
- Flux : **ISO 9454**
- **J-STD** specifications

**MBO France certified IATF 16949**



## MBO Services

### Analysis

- A full analysis service is available for determining the quality and content of customer's solder baths.
- Measurements supplied in term of:
  - metals by X-ray spectrography
  - chemicals by potentiometry, chromatography, spectroscopy and spectrometry

### Development of specific products

In order to allow you to achieve your development objectives, MBO team offers you:

- its know-how
- its availability
- its technical assistance
- its research laboratory

**All our products can be supplied with analysis or conformity certificate.**

### GD-DISTRIBUTION

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