

Material Safety Data Sheet

Product Name: NiPdAu Plated Leadframe

Date Prepared: 11 Jul 2011

1. Product Identification

Product Name	NiPdAu plated Leadframe
Chemical Family	Metal Leadframe
Manufacturer	ASM Technology Singapore Pte. Ltd. 2 Yishun Avenue 7 , Singapore 768924 Phone: (65) 67526311

2. Range of Package / Applications

- a. MLF / QFN
- b. SOIC / SOT / SOP / TSSOP
- c. TQFP / QFP
- d. PLCC
- e. Etc.

3. Composition / Information of Ingredients (% by weight)

Material Composition

Base Material: Copper EFTEC64T

Constituent	CAS No.	% by Weight
Cu	7440-50-8	99.17% - 99.39%
Cr	7440-47-3	0.20% - 0.30%
Sn	7440-31-5	0.23% - 0.27%
Zn	7440-66-6	0.18% - 0.26%

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Base Material & Plating Material

Plating Type	Full Plating
Plating material	Ni-Pd-Au
Plating thickness *	Ni : 20~100 μinch Pd: 0.8~6.0 μinch Au: 0.12 μinch (min)
Purity	99.90%

* Plating thickness information is a general specification.

Plating Composition

Plating Composition		% by Weight
Constituent	CAS No.	
Ni	7440-02-0	89.92 – 93.72%
Pd	7440-05-3	5.06 – 9.11%
Au	7440-57-5	0.97 – 1.22%

4. Physical Properties

Freezing point	Not applicable
Vapor pressure (mmHg)	Not applicable
Melting point / Boiling point	Not applicable
Solubility in water	Insoluble in water
Vapor density (Air = 1)	Not applicable
Evaporation rate	Not applicable
Appearance	Solid
Odor	No odor
Thickness	5, 6, 8, 10 mils
Ionic contamination	200 nanogram/sq-cm max

5. Fire, Explosion, Stability and Reactivity Information

Flash Point	None
Flammable limits	None (LFL: not applicable , UFL: not applicable)
Extinguishing media	Leadframe is non –combustible. Use extinguishing media appropriate to the surrounding fire.
Chemical stability (conditions to avoid)	Leadframe is a stable material.
Incompatibility (Materials to avoid)	Strong acid (hydrogen gas involved if in contact)

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6. Health Hazard Information

Inhalation	Not applicable
Ingestion	Not applicable
Skin	Skin contact with this material may cause, in some sensitive individuals, an allergic response if element such as copper and nickel are present.
Eye	Particulate metal (dust) may be dangerous to the eye and surrounding tissue.
Toxicity	There is no information on the toxicity of this material. Under normal handling and use of the solid form of this material there are few health hazards.

7. Emergency and First Aid Procedures

Inhalation	Difficulty in breathing caused by inhalation of dust requires moving where there is fresh air. If breathing has stopped, perform artificial respiration and obtain medical assistance at once.
Ingestion	Swallowing of metals or dust can be treated by drinking large quantities of water and attempt to induce vomiting if conscious. Obtain medical assistance at once.
Skin	Skin cuts and abrasions can be treated by standard first aid. Skin contamination with dust or powder can be removed by washing with soap and water. If irritation persists, obtain medical assistance at once.
Eye	Dust or powder should be flashed from the eyes with copious amounts of clean water. If irritation persists obtain medical assistance. Contact lenses should not be worn if working with metal dusts and powder.

8. Exposure control / Personal Protection

Ventilation	Good general ventilation should be sufficient for most conditions.
Respiratory protection	For most conditions, no respiratory protection should be needed however in dusty atmospheres, wear a NIOSH approved respirator to protect from dust.
Eye protection	Wear safety glasses when risk of eye injury is present, for example, metal powder handling.
Skin protection	Wear clean body covering clothing. Wear gloves to prevent metal cuts and skin abrasions.

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9. Handling and storage

Handling	Good housekeeping to avoid potential contamination
Storage	Store in original vacuum sealed packing. Storage condition: 19 to 25 °C and relative humidity 50 to 70%

10. Environmental protection information

Waste disposable method	Prior to disposal consider if the material has recovery value. Dispose of materials in compliance with the governmental regulations.
Environmental hazards	In solid form, this material poses special environmental problems.

11. Transportation information

Transportation and hazardous materials	Not a hazardous material for shipping
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12. Company Details – Sales/Factory

FACTORIES

STAMPED FRAME:

**ASM ASSEMBLY AUTOMATION LTD (HK)
ASM MATERIAL CHINA**

ETCHED FRAME:

**ASM TECHNOLOGY SINGAPORE
ASM TECHNOLOGY MALAYSIA**

SALES OFFICE:

**SHANGHAI, MALAYSIA, PHILIPPINES, EUROPE, CHINA, TAIWAN, THAILAND,
KOREA, US & JAPAN**

Additional Information

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