



LeFram Technology Corporation

Material Safety data Sheet

: Ag/Cu 、 A42 plated lead frame
: 20 March 2004

1. Product Identification

Product name	Ag /Cu 、 Allow 42 plated lead frame
Chemical family	Metal lead frame
Manufacturer	No. 40, Shui-Ken, Lin 13, Tatung Li. Kuan His Hsinchi, Taiwan R.O.C. Tel: 886-3-5475105
Emergency assistance	Same as above

2. Composition / Information of ingredients (% by weight)

Constituent	C194	C7025	C151	EFFECT64	A42
Cu	MIN 97	BAL	BAL	BAL	---
Fe	2.1~2.6	--	--	--	BAL
Co	--	--	--	--	MAX1.0
Si	--	0.25~1.20	--	--	MAX 0.3
Mn	--	--	MAX 0.005	--	MAX 0.8
Ni	--	2.2~4.2	--	--	40.5~44.5
Zr	--	--	0.05~0.15	--	--
Sn	--	--	--	0.23~0.27	--
P	0.015~0.15	--	--	--	MAX 0.025
Zn	0.05~0.2	--	--	0.18~0.26	--
C	--	--	--	--	MAX0.02
S	--	--	--	--	MAX 0.025
Mg	--	0.05~0.30	--	--	--
Al	--	--	MAX 0.005	--	MAX 0.1
Cr	--	--	--	0.2~0.3	MAX 0.1
Pb	MAX0.03	--	--	--	--
Ti	--	--	--	--	--



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3. 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

4. Fire, explosion, stability and reactivity information

Flash point	None
Flammable limits	None (LFL: not applicable, UFL: not applicable)
Extinguishing media	Lead frame is noncombustible. Use extinguishing media appropriate to the surrounding fire
Chemical stability (conditions to avoid)	Lead frame is a stable material
Incompatibility (Materials to avoid)	Strong Acid (hydrogen gas involved if contact)

5. 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.



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6. Emergency and first aid procedures

Inhalation	Breathing difficulty caused by inhalation of dust requires remove to fresh air. If breathing has stopped, perform artificial respiration and obtain medical assistance at once.
Ingestion	Swallowing metal powder or dust can be treated by having the affected person swallow large quantities of water and attempting 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 flushed 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 powders.

7. 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.

8. Handling and storage

Handling	Good housekeeping in order to prevent the accumulation of dust
Storage	Store in original vacuum sealed packing. Storage condition: 19 to 25 °C and relative humidity <= 60%



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9. Environmental protection information

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

10. Transportation information

Transportation and hazardous materials	Not a hazardous material for shipping.
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Additional Information

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