BEST Inc.  
MSDS 00000120122  

MATERIAL SAFETY DATA SHEET EZReball™

SECTION I - NAME & PRODUCT

ADDRESS: BEST Inc  CONTACT: info@solder.net

3603 Edison Place
Rolling Meadows IL  60008

TRADE NAME, COMMON NAME OR SPECIFICATION: EZReball™ soldering preforms (can be loaded with a variety of solder ball alloys). The weight percent of the metals depends on the number of solder balls in the preform and type of solder ball alloy used.

EMERGENCY TELEPHONE: 847-797-9250

APPROVED BY: Bob Wettermann  August 6, 2013

SECTION II – COMPOSITION

Inert Polyimide Film

As nuisance dust-polyimide polymers

As residuals in film-dimethyl acetamide  127-19-5 < 1

<table>
<thead>
<tr>
<th>Hazardous Ingredients</th>
<th>Wt %</th>
<th>CAS Registry #</th>
<th>OSHA PEL mg/m3</th>
<th>TLV-TWA mg/m3</th>
<th>TLV-Steel mg/m3</th>
<th>Risk Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>0-90</td>
<td>7439-92-1</td>
<td>0.05</td>
<td>0.05</td>
<td>.15</td>
<td>R20/21/33</td>
</tr>
<tr>
<td>Tin</td>
<td>10-96.5</td>
<td>7440-31-5</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Silver</td>
<td>0-4</td>
<td>7440-22-4</td>
<td>0.01</td>
<td>.01</td>
<td>NE</td>
<td>R33</td>
</tr>
<tr>
<td>Copper</td>
<td>0-1</td>
<td>7440-22-4</td>
<td>.1 (fume)</td>
<td>.1 (fume)</td>
<td>NE</td>
<td></td>
</tr>
</tbody>
</table>

Non-hazardous ingredients

Inert Polyimide film
Balance  N/A  N/A  N/A  N/A

Fibrous Glass Cloth
SECTION III - PHYSICAL AND CHEMICAL DATA

Inert Polyimide Film
Melting Point: None
% Volatiles: 1% max
Solubility in Water: Insoluble
Form: Transparent film
Color: Dark Amber to black
Specific Gravity: >1.4

BGA Solder Balls
Boiling point Deg F. (760mm Hg) NA
Vapor Pressure NA
Solubility in Water Insoluble
Evaporation rate NA
Appearance and Odor Silver Gray metal, Odorless, Various shapes and size
% Volatile by weight NA

Fibrous Glass Cloth
Melting Point None
% Volatile Unknown
Solubility in Water Unknown
Appearance Off-weight colored tolls of tape

STABILITY AND REACTIVITY

Inert Polyimide Film
Chemical Stability: Stable at normal temperatures and storage conditions.
Incompatibility with other materials: Non foreseeable
Decomposition: At temperatures above 400 deg C, the major off gases are carbon monoxide and carbon dioxide

BGA Solder Balls
Stability Stable
Incompatibility (Materials to avoid) Oxidizing materials, acids, hydrogen peroxide
Hazardous Decomposition Products Lead oxide fume and/or lead particular may be evolved
Hazardous Polymerization Will not occur
Polymerization: Will not occur.

Decomposition: Carbon monoxide, carbon dioxide, nitrogen oxides

Fibrous Glass Cloth

Stability Expected to be stable at normal temperatures
and storage conditions
Incompatibilities Strong acids or bases.
In the event of fire, oxides of carbon and nitrogen
Hazardous Polymerization Not expected

SECTION IV - FIRE & EXPLOSION HAZARD DATA

FLASH POINT: N/A   METHOD USED: FLAMMABLE LIMITS: N/A

EXTINGUISHING MEDIA: Not flammable, use a dry chemical

SPECIAL FIRE FIGHTING PROCEDURES: Use sufficient local exhaust to reduce the dust. Use self-contained breathing apparatus, NIOSH approved, to avoid dust or fumes generated during fire fighting efforts.

AUTO-IGNITION TEMPERATURE: Not known

SECTION V - HEALTH HAZARD DATA

FIRST AID MEASURES

Inert Polyimide Film

Inhalation: Not a probable route of exposure from the film.

For the film we recommend treating as a nuisance particulate

Before Using polyimide films, read the bulletin on safe handling and use.
Inhalation: Not a probably route of exposure for film
Exposure to alumina or carbon black encapsulated in the polymer is not likely.
a nuisance particulate
Skin Contact: No irritation is expected from handling film. Less than 1ppm dimethyl acetamide
was extracted from film by distilled water at 40 deg C for 4 hours.
Eye contact: Not a probable route of exposure for film
Carcinogenicity Information
The following components are listed by IARC, NTP, OSHA, or ACGIH as carcinogens:
Material IARC NTP OSHA ACGIH
Carbon Black 2B
Dimethyl Acetamide (Residual in film)
All reportable ingredients are listed in the TSCA Chemical Substance Inventory
For the polymer from which the film is made, DuPont recommends treating polymer dust as
Ingestion: Not a probable route of exposure for film

**BGA Solder Balls**
Inhalation: Not a probable route of exposure for films
Skin Contact: Wash with soap and water after handling. If skin irritation develops, consult a physician.
Eye contact: Flush Eyes with water. Consult a physician if irritation persists
Ingestion: Not a probably route of exposure for films or compressed air cleaning systems. Scrap or waste solder should be recycled or stored in sealed dry containers for later disposal. Must be in accordance with federal, state and local regulations.

To maintain exposure below TLV's. bismuth, antimony and indium do not product significant quantities of fume below 900°F

**Fibrous Glass Cloth**
Spill / leak procedure: Due to the physical nature of this material, not expected. Should material be released, pick up to prevent slipping hazard.
Protective Equipment: Wear respiratory protection in the event of fire.
Waste Disposal: Dispose in accordance with local, state and federal regulations
Ventilation: Local ventilation if necessary to maintain airborne levels below established limits
Eye Protection: May be necessary if conditions cause dust
Skin protection: Clothing that covers arms (Long sleeves), Legs (Long pants), and gloves may be necessary
Respiratory Protection: Not normally necessary unless nuisance airborne glass exceeds PAL, then provide in accordance with OSHA 1919.134
Avoid inhalation of solder fume or dust, Vacuuming is recommended. Do not use dry sweeping

**SECTION VI - SPILL, LEAK & DISPOSAL**
Pick up in order to prevent slippage

**SECTION VII - SPECIAL PROTECTION INFORMATION**
Respiratory Protection: Nor normally needed. Seek professional advice prior to respirator selection and use.

Engineering Control: Local exhaust ventilation is recommended to control any air contaminants. Control concentration of all components so that TLVs are not exceeded.

Protect clothing/Equipment: Use eyewear to prevent contact as appropriate to the given operation. If there is danger of molten material contacting the skin or eyes, use eye/protection and heat-resistant gloves.

Hygienic Work Practices: Do not eat, drink or smoke in the immediate work area. Wash hands before eating, drinking or smoking.

**SECTION VIII - SPECIAL PRECAUTIONS & COMMENTS**
FIRE FIGHTING INFORMATION

Inert Polyimide Film

Flammable Properties
Not a fire or explosion hazard.
The flammability characteristic of Polyimide Film is reported as "self-extinguishing"
The film, chars but does not burn in air. It will burn in atmosphere of 100% oxygen.
The processing of polyimide films can cause the generation of static charge.
Precautions for static charges should also be taken when removing plastic films used as protective packaging ".
Extinguishable Media
Fire Fighting Instructions
None required

BGA Solder Balls

Estimated Flammable Limits (% by volume in air)
LEL NA
UEL NA
Flash point (Deg F) NA
Extinguishing Media NA
Special Fire-fighting procedures:
Use NIOSH approved self-contained breathing apparatus and full protective clothing if involved in a fire.
Unusual Fire and explosion Hazard: Moderate in the form of dust when exposed to heat or flame. When heated to high temperatures, lead emits highly toxic fumes.

Fibrous Glass Cloth

Estimated Flammable Limits (% by volume in air)
LEL NA
UEL NA
Flash point (Deg F) NA
Extinguishing Media NA
Special Fire-fighting procedures:
Use NIOSH approved self-contained breathing apparatus and full protective clothing if involved in a fire.
Unusual Fire and explosion Hazard: Moderate in the form of dust when exposed to heat or flame. When heated to high temperatures, lead emits highly toxic fumes.

TRANSPORTATION INFORMATION

Dept of Transportation: Hazardous Waste Solid # NA3077, Class 9, Misc Hazardous Waste

USA REGULATORY INFORMATION

SARA Status: This chemical is subject to the reporting requirements of Sxn 313,-40CFR 372.65