耐高温280度C、高密度、隔热、耐热工程材料
280°C of high-temperature, high-density, thermal insulation engineering materials

在於科技始於人性，欲使材料性能兼顧功能並且符合「人性」為要求；本公司致力於製造的具材料與製造設計研發製造，多年來秉持創新開發的精神，對於製造生產及使用過程中所產生問題進行研發及改良以提升使用壽命減少工業傷害。
In order to make sure materials are functional and environmental, we are committed to research and develop required engineering materials, and insist on the spirit of innovation and development over years, as well as R&D and improve the problems came up in the process of carrier production and use to increase service life and reduce industrial injuries!

七大特點
Seven characteristics

1. 低危害、低刺激
2. 高成本
3. 高性能
4. 低重量
5. 高耐用
6. 易於加工
7. 高技術
Identification of Stononlead™

Materials properties

- High-temperature resistance
- Increase service life by resisting to acid
- High combined strength
- High cleanliness
- Low expansion coefficient and low thermal conductivity
- High rigidity
- Can reduce defective rate, and increase production efficiency

280°C, high-temperature resistance, high-density, thermal insulation.

No special treatment, resistance to the spraying and erosion of Flux.

Impact resistance and rubbing resistance, longer life than other local brand.

Low dust, cleaner than other brand. Suitable to be used in package process and low dust demanding environment.

Improve the quality and production yield of SMT engineering.

Beneficial to detail tooling such as tapping.
優勢比較
Advantages comparison

0.4mm壁厚切割特性，提高焊接良率，材質韌性減少加工使用過程中的損傷。
Cutting characteristics of 0.4mm thin-wall improves welding yield, and material's tenacity reduces usage damages in processing.

膨脹係數對
SMT製程的影響
Expansion coefficient to mention the impact on the SMT process

因應焊製程中所使用的載具，由於必須承受高溫及高重複性的操作，在目前電子產品要求輕薄、高密度下，PCB的發展必須輕薄，多層、高密度趨勢繼續發展。受到高溫產生的膨脹現象，使得使用者因慣用的載具材料為鋁合金，因膨脹係數過大，在280度C的高溫中和PCB膨脹差異太大(300mm約0.8mm)，導致產品變形，良率無法提升的問題。

石英鋁™材質的膨脹係數與基板相同，貼合效果更好，低變形量讓PCB在高溫中維持平整，不需提高工作溫度，提升產品良率。

If expansion coefficient of stononlead™ material is same with substrate, then it will fit better, low deformation keeps PCB maintains smooth in high temperature and without raising temperature to improve product yield.

After through high-temperature furnace, swelling phenomenon shows up, and due to user is used to use aluminum carrier which the expansion coefficient is too much, big difference between 280°C high temperature and PCB expansion distance results in product deformation, and yield can not be improved.

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### Comparison of Key Parameters

<table>
<thead>
<tr>
<th>Property</th>
<th>GP Resin Substrate</th>
<th>Stononlead</th>
<th>Aluminum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear expansion coefficient (ppm/°C)</td>
<td>10</td>
<td>11</td>
<td>25</td>
</tr>
<tr>
<td>Thermal conductivity (W/m°K)</td>
<td>1</td>
<td>0.7</td>
<td>200</td>
</tr>
<tr>
<td>Bending strength (MPa)</td>
<td>450</td>
<td>450</td>
<td>260</td>
</tr>
</tbody>
</table>

**Stononlead™** and **Common Composite**

**99.48%** vs. **96.53%**

> During the tooling process, the thin wally yield rate will affect the carrier yield rate and production line life. Thus, the use of Stononlead™ can provide a better performance and longer life.
SGS檢驗
SGS certificated

由於從原料上得到根本的改善，石硫銅既具備了耐高溫，抗酸蝕，高粘合度的性能，除了符合RoHS、PFOS、Anti Static等的要求，更能在完全安全無虞的加工制程的要求下進行DIP及SMT的加工。

不論如何，在研發人員長期的關注之下，石硫銅無論在加工操作或是成本控制上都已是一項顯著的效益。採用石硫銅，就是您當下的正確決定！

Comply with the requirements of ROHS, PFOS and ANTISTATIC.

歡迎來電：(02)9993-7300或E-mail:SOBOU@sunny.twmail.net洽詢
更多應用資料或至官方網站查詢
www.stonolead.com

Sunny Process Co., Ltd.
新北市新莊區復興路三段109號
No.109, Sec. 3, Fuxing Rd., Xinzhuang Dist., New Taipei City 24251, Taiwan (R.O.C.)
TEL: +886-2-89931730 FAX: +886-2-89931732